

GraybaR

GENERAL CATALOG

No. 102



GraybaR

INDEX TO
CATALOG NUMBERS

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31	222	43	590	56A21, 56P25	403	66CL	698
31	604	43	911	57	215	66X727, 66X728	786
31	418	43, 43B	900	57	405	67	232
31	949	43	514	57	976	67	224
31	89	43	286, 289, 331	58	976	67	86
31	854	43N3 to 43N16	495	58, 59	90	67, 68	405
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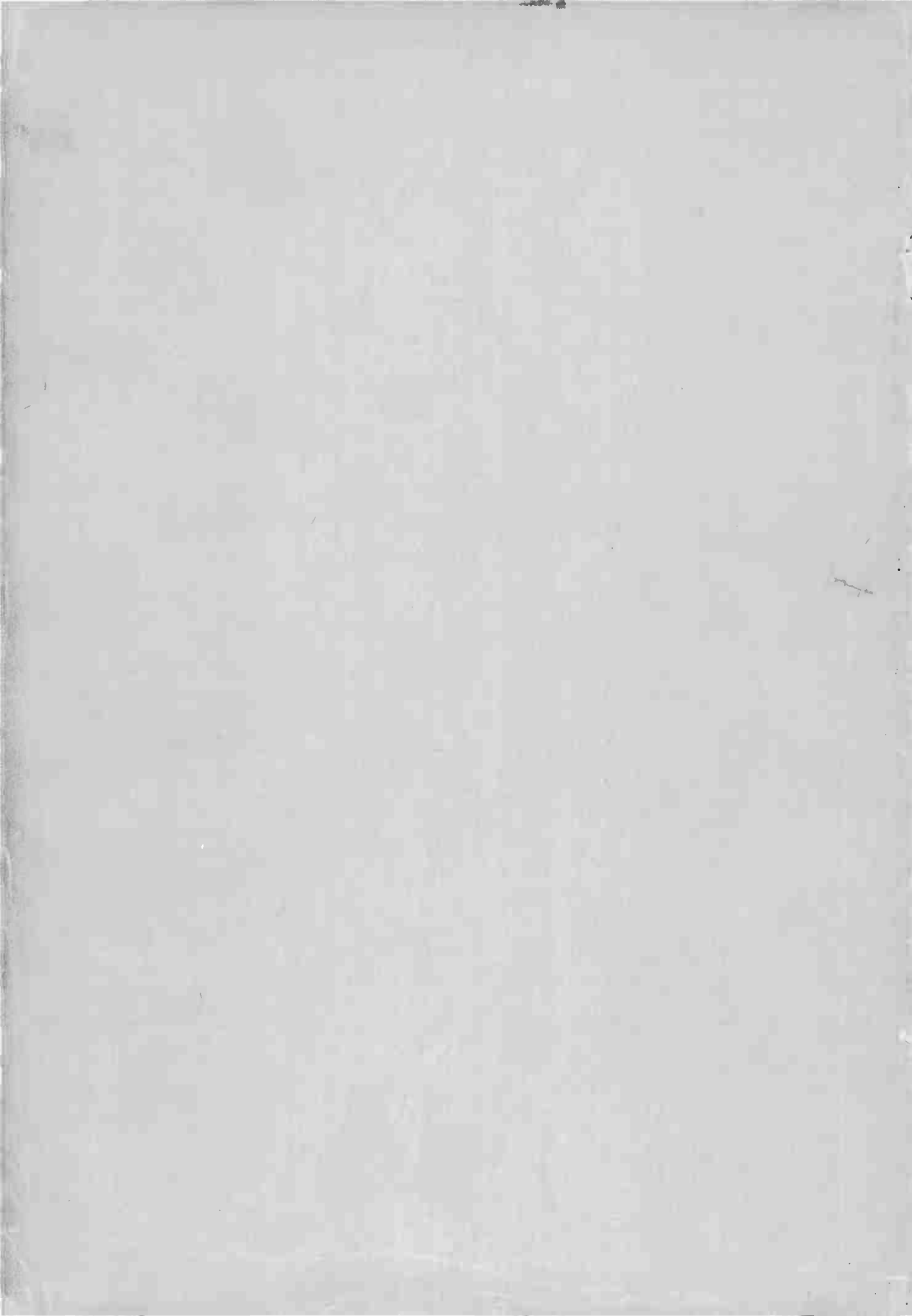
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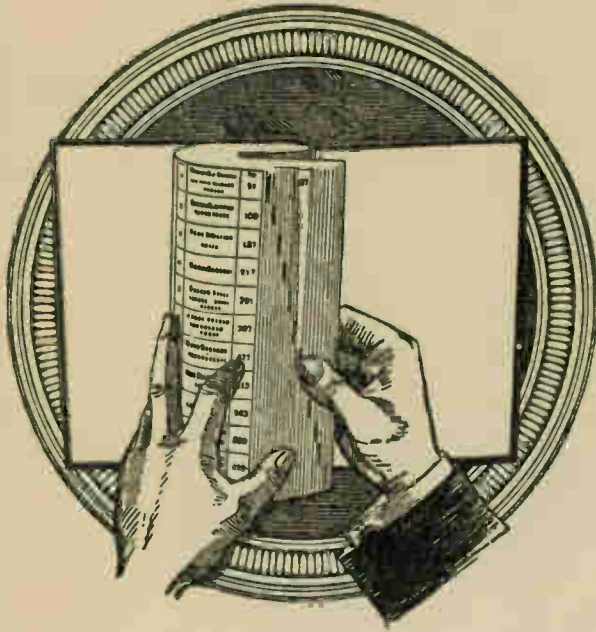
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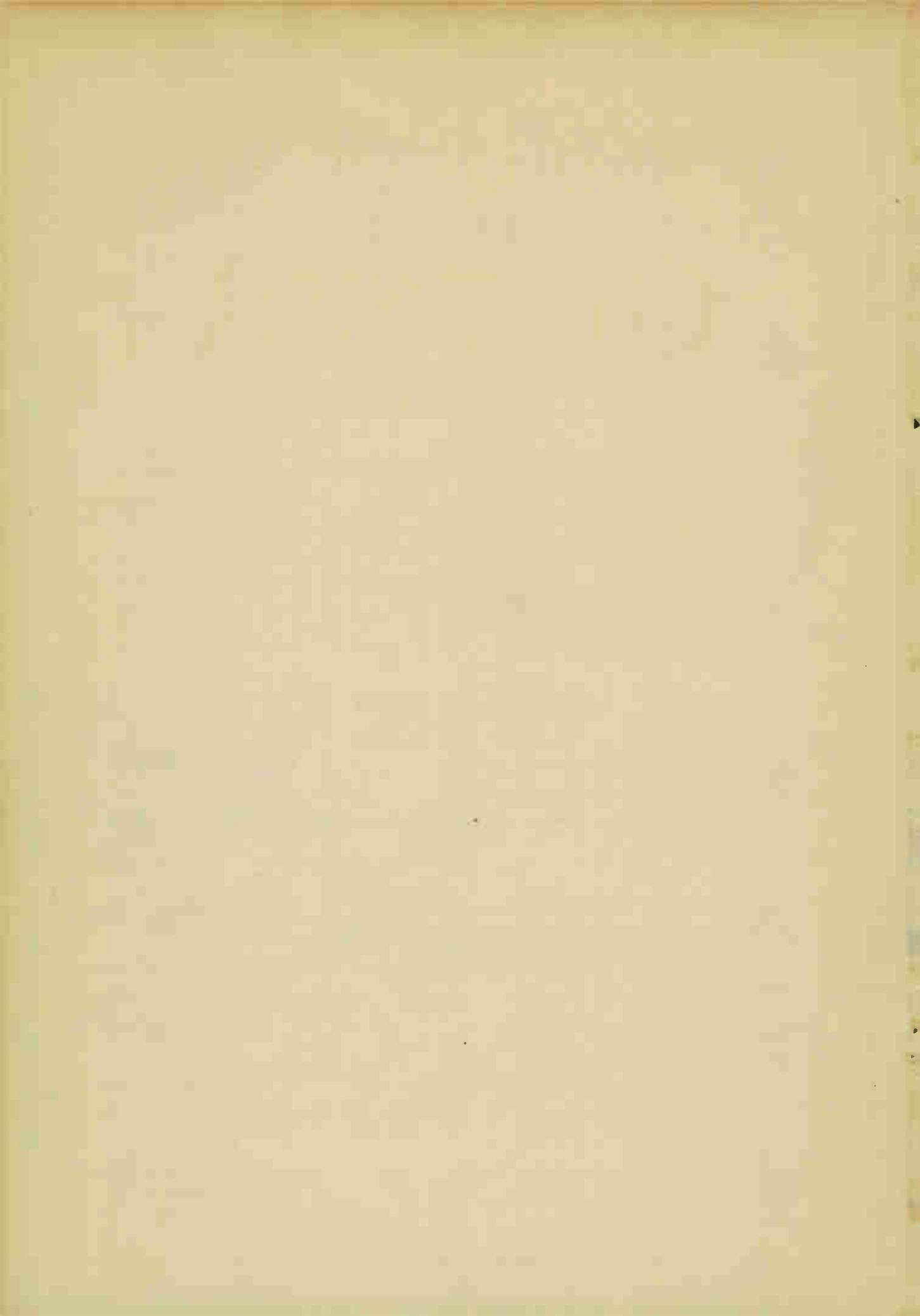
A **BLACK GUIDE MARK** is printed on the outer margin of the first page of each section of this catalogue. In each instance the guide mark is printed directly opposite the wording on this end sheet which refers to the particular section.

1—Fold back the pages of the catalogue as shown in the illustration, which will expose the edges of the guide marks.

2—Place the thumb of the right hand on the mark opposite the marginal section which contains the kind of goods sought.

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GraybaR

ELECTRIC COMPANY

—CATALOG No. 102—



We believe Graybar Catalog No. 102 to be the most complete electrical material catalog yet published. We have tried to include all frequently or widely used electrical items; but *if you don't see what you want listed in this catalog, ask your nearby Graybar office for literature and full information.*

•

PRICES IN THIS CATALOG ARE APPROXIMATE LIST PRICES AND
SUBJECT TO CHANGE WITHOUT NOTICE

GRAYBAR'S Creed AS A DISTRIBUTOR

The Graybar Electric Company Believes:

1. That it performs an economic service for the wholesale buyer of electrical goods by maintaining adequate, well-selected, and convenient stocks of quality materials, thus relieving him of the burdens of handling, storage, investment, and obsolescence.
2. That likewise it performs an economic service for the maker of electrical goods by providing immediate nation-wide distribution without duplication of warehousing, selling, and credit operations; and,
3. That in performing these services, it lowers the cost of distribution to the benefit of the entire Industry; and,
4. That, consequently, it has a recognized place in the economic structure of the Industry and that it need not and should not engage in any activity detrimental to the Industry;
5. That finally, since its own success will follow the success of the Industry, it should endeavor in its publicity to bring about a greater public appreciation of Electricity; and that it should pursue and encourage sound merchandising and credit practices and in every way possible contribute to the advancement of the Electrical Industry.



GRAYBAR ELECTRIC COMPANY—DISTRIBUTORS OF 60,000 ELECTRICAL ITEMS THROUGH MORE THAN 80 DISTRIBUTING HOUSES

AT YOUR SERVICE



GRAY



BARTON



A 71-Year Background of Experience

THEN

The illustration above of the two founders—Gray and Barton—whose names were combined to make Graybar, and the original factory, sales and office force, almost tells the story without words.

“The business in those early days before electric lighting, before central stations, and in fact, before 98% of the electrical things so familiar today, was a very simple business.

“Bells, Buzzers, Telegraph Equipment, and Annunciators were made in this small plant and sold by a top-hatted sales force of two or three men.

NOW

Graybar makes available through more than 80 distributing houses, the products of nearly 300 manufacturers. From coast to coast and border to border, wholesale electrical buyers can find prompt, intelligent service on almost everything electrical. Dependable products, knowledge of your electrical needs and the willingness to stand back of everything we supply are also features of Graybar Service.

“We hope that this catalog of 1072 pages, listing the more frequently used electrical items of all types, except household appliances, will prove of value to you.

PRICES

Prices found in this catalog are revised to agree with the latest lists at the time of going to press. It is understood that they are subject to change without notice and are, therefore, not offered by us as a quotation. It is contemplated that all prices are for shipment from our warehouse unless otherwise specified, except such goods as are shipped regularly direct from factories, in which cases prices are for factory delivery unless otherwise specifically agreed upon.

ORDERS

When possible, we have placed opposite each article a catalog number. When ordering material, kindly order by the catalog number and give a description of the article required.

* You are requested to specify the routing over which you prefer shipments to be made. In the absence of specific instructions, we shall use our best judgment in selecting the route, but we are not responsible for extra trucking expenses at destination.

TERMS

Our terms are 30 days net from date of invoice.

* Payments may be made by check, bank draft, postal or express money order, drawn to the order of or endorsed to the order of the Graybar Electric Company, Inc.

* Payments in currency through the mails even if registered are not recommended and are at sender's risk. We are not responsible for loss or miscarriage of the mails.

* Receipts are not issued for remittances unless requested. Our endorsement on remittance is acknowledgment of the receipt of the funds.

* We solicit new accounts on a credit basis, and in order to give prompt service, request that where you are not rated by the Commercial Agencies, references or other information of a credit character be forwarded with the order. These will be immediately acted upon, and the results held in strict confidence for our sole use and, when reasonably satisfactory, shipment will follow with all possible dispatch.

* To avoid the delay incidental to communicating with references, etc., it would be mutually convenient, when immediate shipment is desired, to instruct us to ship C. O. D. by express, or parcel post (insured if so instructed) or by freight subject to sight draft through a local bank against bill of lading.

* We shall advise the terms on future orders promptly after communications from references are received.

RETURNED GOODS

To save transportation charges, and to facilitate the handling of goods upon receipt, you are requested not to return goods without having obtained shipping instructions from us.

SHIPMENTS

As experienced packers are employed, and as reasonable care is used in packing, we cannot be held responsible for breakage in packages which are delivered in "good order" by the carrier.

* Shipments of glassware are made at your risk.

* Goods ordered to be shipped by parcel post will be sent only at the purchaser's risk of loss or damage.

Habirshaw Bare and Insulated Wire

General Information



Stocks

We carry at our various distributing houses large stocks of wires and cables, which, in addition to the large reserve stock carried by the manufacturers from whom we buy, gives this company a unique and comprehensive assortment. We handle thousands of types of wires, bare and insulated, suitable for general purposes, and, of course, in addition, special wires and cables for aerial, underground, submarine, mine, signal, telephone, and telegraph service.

Factory Facilities

Factory facilities for the manufacture of rubber covered wires and cables have been continually improved, so that to-day the Graybar Electric Company is in a position to offer its customers unsurpassed facilities for the production of rubber insulated wires, and we are as well able to have produced promptly special wires and cables such as are used by the railroads, the mines and the United States Government.

Price and Quality

The Graybar Electric Company sells its wires and cables at prices consistent with the quality of material used, and our customers will find that we are in line with other suppliers of high grade wires and cables.

Special Wires

Although the foregoing refers principally to the standard types of rubber covered wire, the same holds good to other classes of insulated wire handled by the Graybar Electric Company. We are in a position to furnish not only material from a large stock of wires and cables, which meet these ordinary specifications, and from which shipment can usually be made as soon as order is received, but we also have exceptional facilities for executing promptly all orders for emergency or special cables even of the most complicated construction.

Service

Our distributing houses are so well located and our stocks are so large that we are able to give customers service of a quality that cannot be exceeded by any of our competitors in any part of the country, and salesmen can unhesitatingly assure their customers that all stock of Graybar Electric wire receives the most careful scrutiny and inspection by men experienced in that line of work.

Habirshaw Wire and Cable Insulation

Habirshaw wires and cables, distributed by the Graybar Electric Company are insulated with rubber, synthetic plastic material, asbestos or varnished cambric. The various types of insulation are briefly described below.

Black Core Code Grade Compound Underwriters' Type R

Habirshaw Code Grade Rubber Compound is a standard compound and, although designed primarily to meet the minimum requirements of the National Electrical Code, it possesses superior electrical, mechanical and aging properties. Its quality and uniformity are carefully controlled by rigid inspection.

Performance Test Compound Underwriters' Type RP

Habirshaw Performance grade type of rubber insulation is a high grade insulation having long life, good electrical and physical properties as well as low water absorption. This insulation conforms to the N.E.M.A. Building Wire Specification for Performance Test Insulation and also to A.S.T.M. Specification D-353-39T Performance Rubber Compound.

The suitability of this type of compound as insulation is determined solely by physical and electrical tests. No limitations as to the kind or amount of rubber or other ingredients are specified, so as to permit the use of new materials and modern developments in the art, provided rigid tests are complied with. Performance grade compound replaces Thirty Per Cent grades and is one which represents the most advanced progress in compounding unrestricted by chemical analysis. It is approved by the Underwriters' Laboratories for operation at 60° C. copper temperature.

Some of the special compounds regularly furnished by the Habirshaw Cable and Wire Division, Phelps Dodge Copper Products Corporation, are briefly described below.

Complete specifications and information on these types of insulation will be furnished on request.

Habirite

Habirshaw Habirite is a high voltage compound of the oil base type for use in circuits up to 27,000 volts in both single and multiple conductor constructions. It is corona-resistant and has remarkable aging qualities, as indicated by natural life and Geer Oven aging test A.S.T.M. No. D-353-39T.

Recommended for installation at low voltages where cable is to be subjected to alternate wet and dry conditions up to 70° C. Habirite is furnished with any of the standard coverings such as lead sheath, tough rubber jacket, neoprene sheath, cotton braid, asbestos braid, etc.

Principal application is in medium voltage distribution circuits and series street lighting.

Habirite braided cables were used by the New York World's Fair for their 4000-volt distribution system both buried and in ducts.

Heat Resistant Grade Compound Underwriters' Type RH

Habirshaw Heat Resistant Grade Compound represents the most modern development in so-called super-aging compounds. It shows remarkable results in both Oxygen Bomb and Geer Oven aging tests and has been approved by the Underwriters' Laboratories for operation at 75° C. copper temperature. This compound is standard for I.M.S.A. Fire and Police Signal Cables.

Forty Per Cent and Sixty Per Cent Jacket Compounds

These compounds are used for abrasion-proof coverings on portable cords, arc-welding cable, mine cable, etc.

Habirdry Moisture-Proof Compound Underwriters' Type RW

Habirshaw Habirdry is a moisture-proof non-leaded building wire which provides economical and dependable wiring for wet locations. Habirdry is highly resistant to contaminating elements in wet ducts. It is a heat-resisting type compound and one that has exceptionally long life. Habirdry has been thoroughly tested and approved by the Underwriters' Laboratories for installation in wet locations where the code ordinarily requires a lead sheathed cable.

Habirshaw Wire and Cable

Continued

Habirdure

Habirshaw Habirdure wires and cables are insulated with a plasticized synthetic resin which is non-inflammable, highly resistant to oils and corrosive chemicals. It is mechanically tough and requires no outer protective covering. Electrically it has exceptionally high dielectric strength and is highly corona-resistant. Habirdure insulation is practically non-aging as it does not oxidize. It is made in a wide variety of fadeless colors. The clean, smooth, tough finish of Habirdure wire makes it easy to install.

Habirduet

A single conductor non-leaded cable developed for severe conditions encountered on public utility secondary distribution systems, ideal for wet locations. Habirduet insulation is a special moisture and heat-resistant rubber compound applied in standard 600-volt wall thicknesses. Habirduet cable is covered with a rubber filled tape and a saturated cotton braid. It has proven satisfactory for operation up to 75°C. conductor temperature.

Habirduet XXX

Habirduet XXX has in addition to the fine heat-resisting qualities of Habirduet an extremely low water absorption, less than 10 mg. per square inch of exposed surface.

Both Habirduet and Habirduet XXX after 504 hours in the oxygen bomb at 70°C. meet the requirements of 25 per cent maximum depreciation in tensile strength and elongation.

Habirubber

A cable consisting of a conductor covered with a single belt of rubber insulation whose excellent physical properties necessitate no covering over it. Habirubber is recommended for use on 600-volt circuits for burial directly in the ground or for installation in underground ducts.

Varnished Cloth Insulation

Habirshaw varnished cambric insulated cables are manufactured and guaranteed in accordance with I.P.C.E.A. Specifications. Wires and cables of this type may be used at higher operating temperatures than rubber insulated cable and are used for switchboard wiring, feeders and power wiring. They are also used for voltages higher than ordinarily recommended for rubber cables.

Asbestos Insulation

Habirshaw asbestos wires and cables conform with the N.E.M.A. Standard for asbestos and asbestos-varnished cambric insulated wires and cables. Asbestos insulated cables are supplied for operation where temperatures are exceedingly high and preclude the use of other insulations.

Two general types are supplied. Type AVC, a combination asbestos and varnished cambric construction for use in conduits or exposed wiring in locations where exposed to heat and moisture at voltages up to and including 8000 volts. Where extreme moisture is encountered, lead sheathed asbestos cables are recommended. Type A is an all-asbestos construction for use in exposed wiring up to 600 volts in dry locations where high temperatures are encountered.

Habirprene

A tough rubber-like jacket recommended for installations which are exposed to sunlight. It is recommended also for installations where the cable is in contact with oil.

Other Compounds

In addition to the above, rubber compounds can be furnished for special service conditions.

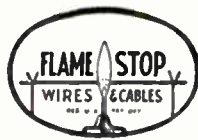
Inquiries involving use of special rubber compounds should be referred to Graybar Electric Company for complete engineering advice.

The Habirshaw Cable and Wire Division, Phelps Dodge Copper Products Corporation, is in a position, with its well-equipped research laboratories and technical staff, to give expert advice on all special problems. Write to your nearest Graybar office.

Habirshaw Wire and Cable

Continued

Flame-Stop Finish



The N.E.C. requires that all 600-volt braided building wire have a flame retarding, moisture-resisting finish, one of the most constructive rulings ever introduced, tending to improve the quality of wire.

Several years ago, Habirshaw, looking to the future, developed Habirshaw Flame-Stop Wire with the required flame retarding and moisture resisting finish.

There have been many hundred millions of feet of Habirshaw Flame-Stop Wire installed in the outstanding buildings of the United States due to the foresight of the leading architects, engineers and electrical contractors.

Habirshaw Flame-Stop Wire is backed up by Habirshaw's policy slogan "Proven by the test of time."

Habirshaw Wires and Cables are also supplied with metallic protective coverings. Lead sheathed and Parkway cables are carried in stock; steel strip and wire armored and other special coverings are manufactured to order.

Reels

Reels not included in price of cable, but charged separately and paid for at price charged, net 30 days, without discount. All such reels returned in good condition, reasonable wear and tear excepted, freight collect to point of origin within 12 months from date of original shipment from factory, will be credited at price originally charged. Reels requiring repairs will be accepted at option of Seller, in which case a reasonable charge for repairs will be deducted from credit allowance.

Reels returned after 12 months from date of original shipment will be accepted for credit under same conditions as above, but subject to deduction if such reels are returned in a depreciated condition.

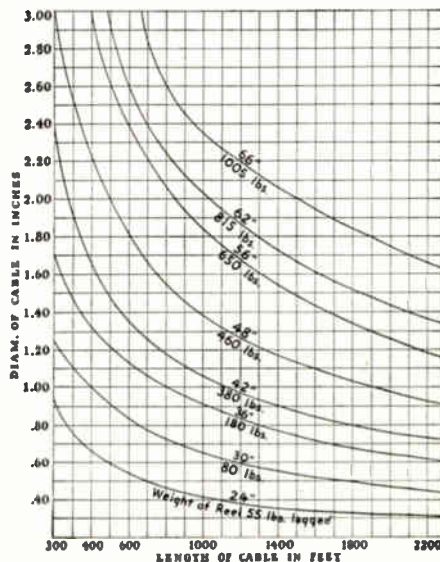
On all such reels returned after 12 months from date of original shipment, however, Seller reserves right to allow no credit for reels which are in a condition unsatisfactory to Seller, or which in Seller's opinion have become partly or wholly obsolete due to changes in Seller's manufacturing and shipping standards or methods.

No charge made for wood lagging and no credit allowed for return of wood lagging.

Reel Capacities

Curves Showing Reel Capacity for Cable Diameters Up to 3 Inches Example

Diameter of Cable	1.60 inches
Length of Cable	730 feet
Reel to Use	48-inch



Habirshaw Small Diameter Building Wire

600 Volts, N.E.C.

Habirshaw Small Diameter Building Wire has been developed principally to fill the need for rewiring purposes. Many buildings today are inadequately wired, and due to limitations of existing conduits, the needed extra capacity cannot be provided by Types R, RP, or RH wire. Through the use of small diameter building wire, it is possible to deliver increased wattages approximately three times greater than using existing conduits.

Habirshaw Small Diameter Building Wires are furnished in three general types: Type RHT, for all-purpose wiring and Types RPT and SN, for rewiring purposes only.

Type RPT

Thin Wall Rubber Insulated Braided Type



Type RPT Small Diameter Building Wire is recommended for rewiring purposes only and where copper temperatures do not exceed 60°C.

Size A.W.G. No.	Thickness Insulation 64ths Inch	SINGLE BRAID		DOUBLE BRAID	
		Approx. O.D. In.	Approx. Net Wt. Lb. per 1000 Feet	Approx. O.D. In.	Approx. Net Wt. Lb. per 1000 Feet
14	2	.152	21	.168	24
12	2	.169	28	.185	31
10	2	.190	40	.206	45
Stranded					
14	2	.160	22	.176	25
12	2	.180	29	.196	33
10	2	.203	42	.219	47

Type RHT

Thin Wall Rubber Insulated Braided Type



Type RHT Small Diameter Building Wire is an all-purpose wire and therefore may be used for new wiring as well as for rewiring jobs. Type RHT may be operated at copper temperatures up to 75°C.

When used for new wiring, the Code does not permit a greater conduit fill than that approved for Types R, RP, and RH wires.

Size A.W.G. No.	Thickness Insulation 64ths Inch	SINGLE BRAID		DOUBLE BRAID	
		Approx. O.D. In.	Approx. Net Wt. Lb. per 1000 Feet	Approx. O.D. In.	Approx. Net Wt. Lb. per 1000 Feet
14	2	.152	21	.168	24
12	2	.169	28	.185	31
10	2	.190	40	.206	45
8	3	.249	70	.267	72
Stranded					
14	2	.160	22	.176	25
12	2	.180	29	.196	33
10	2	.203	42	.219	47
8	3	.266	72	.284	80

Number of Conductors in Conduit or Tubing for Types RPT and RHT

Small Diameter Building Wire, Types RHT and RPT, 600 volts for rewiring in existing raceways as provided in subparagraph "e" of Section 3005 N.E.C.

Size A.W.G. No.	SIZE CONDUIT OR TUBING, INCHES								
	No. CONDUCTORS IN ONE CONDUIT OR TUBING								
	1	2	3	4	5	6	7	8	9
14	1/2	1/2	1/2	1/2	1/2	3/4	3/4	3/4	3/4
12	1/2	1/2	1/2	1/2	1/2	3/4	3/4	3/4	3/4
10	1/2	1/2	1/2	1/2	3/4	3/4	1	1	1
*8	1/2	1/2	3/4	3/4	1	1	1 1/4	1 1/4	1 1/4

*Approved only in Type RHT.

Habirdure—Type SN

All-Synthetic Insulated Type



Type SN Small Diameter Building Wire differs from the conventional rubber insulated braided building wires in that the insulation consists of a wall of Habirdure, a synthetic resin. Habirdure has exceptionally high dielectric strength, is practically non-aging and is highly resistant to moisture, oil, acids, and alkalis. The tough nature of the material makes it unnecessary to use a braided covering for protection against mechanical injury. The omission of an overall braiding reduces the outside diameter to a minimum and makes Type SN the smallest of the Small Diameter Building wires. Its hard, smooth surface makes it extremely easy to pull. Type SN is furnished in a range of bright, fadeless colors which are unaffected under the roughest possible handling during installation.

Type SN is approved for rewiring purposes and for operation at copper temperatures up to 60°C. Type SN is supplied in a large range of sizes from No. 14 A.W.G. to No. 4/0 A.W.G. inclusive.

Size A.W.G. No.	Thickness Insulation 64ths Inch	Solid		Approx. O.D. In.	Approx. Net Wt. Lb. per 1000 Feet
		Approx. O.D. In.	Approx. Net Wt. Lb. per 1000 Feet		
14	2	.130		.130	20
12	2	.147		.147	28
10	2	.168		.168	41
8	3	.227		.227	69
Stranded					
8	3		.246		75
6	4		.314		119
4	4		.363		176
2	4		.423		263
1	5		.496		339
1/0	5		.537		416
2/0	5		.582		514
3/0	5		.634		633
4/0	5		.692		787

Number of Conductors in Conduit or Tubing

Small Diameter Building Wire, all synthetic Type SN, 600 volts for rewiring existing raceways as provided in subparagraph "e" of Sections 3005, N.E.C.

Size A.W.G. No.	SIZE CONDUIT OR TUBING, INCHES								
	No. CONDUCTORS IN ONE CONDUIT OR TUBING								
	1	2	3	4	5	6	7	8	9
14	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
12	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
10	1/2	1/2	1/2	1/2	1/2	3/4	3/4	3/4	3/4
8	1/2	1/2	1/2	3/4	3/4	1	1	1	1
6	1/2	3/4	3/4	1	1	1 1/4	1 1/4	1 1/4	1 1/4
5	1/2	3/4	3/4	1	1	1 1/4	1 1/4	1 1/4	1 1/2
4	1/2	3/4	1	1	1 1/4	1 1/4	1 1/4	1 1/2	1 1/2
3	1/2	1	1	1 1/4	1 1/4	1 1/4	1 1/2	1 1/2	2
2	1/2	1	1	1 1/4	1 1/4	1 1/2	1 1/2	2	2
1	3/4	1 1/4	1 1/4	1 1/2	1 1/2	2	2	2	2 1/2
1/0	3/4	1 1/4	1 1/4	1 1/2	2	2	2	2 1/2	2 1/2
2/0	3/4	1 1/4	1 1/2	2	2	2	2 1/2	2 1/2	2 1/2
3/0	3/4	1 1/2	1 1/2	2	2	2 1/2	2 1/2	3	3
4/0	1	1 1/2	2	2	2 1/2	2 1/2	3	3	3

Habirshaw Rubber Covered Braided Wire and Cable

600 Volts N.E.C.S.

Type R Code Grade—Solid—Single Conductor



Size A.W.G. No.	Thick. Insulation 64ths In.	Single Braided		Type Package Bundle	Shipping Wt. Lb. per 1000 Feet
		Approx. O.D. Inches	Std. Pkg. Feet		
*18	1	.10	5000	5 Coils	10
*16	1	.11	5000	5 Coils	14
18	2	.13	5000	5 Coils	14
16	2	.14	5000	5 Coils	18
14	2	.19	2500	†5 Coils	30
12	3	.21	2500	†5 Coils	40
10	3	.23	2500	†5 Coils	55
8	4	.28	500	†Coil	86
6	4	.32	500	†Coil	120
4	4	.38	500	†Coil	180
Double Braided					
14	3	.22	2500	5 Coils	36
12	3	.24	2500	5 Coils	47
10	3	.26	2500	5 Coils	62
8	4	.32	500	†Coil	96
6	4	.36	500	†Coil	135
4	4	.41	500	†Coil	190

Type R Code Grade—Stranded—Single Conductor



Size A.W.G. No.	Thick. Insulation 64ths In.	Single Braided		Type Package Bundle	Shipping Wt. Lb. per 1000 Feet
		Approx. O.D. Inches	Std. Pkg. Feet		
14	3	.19	2500	5 Coils	32
12	3	.21	2500	5 Coils	43
10	3	.23	2500	5 Coils	59
8	4	.30	500	†Coil	93
6	4	.36	500	†Coil	135
4	4	.40	500	†Coil	195
2	4	.46	500	†Coil	285
Double Braided					
14	3	.23	2500	5 Coils	38
12	3	.25	2500	5 Coils	50
10	3	.27	2500	5 Coils	67
8	4	.33	500	†Coil	103
6	4	.38	500	†Coil	145
4	4	.45	500	†Coil	205
2	4	.51	500	†Coil	295
1	5	.59	1000	Reel, 30"	435
1/0	5	.63	1000	Reel, 36"	560
2/0	5	.67	1000	Reel, 36"	660
3/0	5	.73	1000	Reel, 36"	780
4/0	5	.78	1000	Reel, 36"	930

*Fixture Wire.

†Can also be furnished in 500-foot coils put up in individual cartons.

‡Single coils paper wrapped.

Habirshaw Rubber Covered Flexible Cable

Type R Code Grade—Single Conductor



Size B&S	No. of Wires	Size Wires	Double Braid		Approx. Wt. Lb. per 1000 Feet
			Thickness Wall In.	Diameter Over All In.	
0000	133	.0399	5/64	.850	900
000	133	.0356	5/64	.780	730
00	133	.0317	5/64	.725	610
0	133	.0282	5/64	.670	490
1	133	.0251	5/64	.610	415
2	133	.0226	5/64	.550	325
4	49	.0291	5/64	.477	212
6	49	.0231	5/64	.423	146
8	49	.0183	5/64	.321	93
10	37	.0168	5/64	.240	55
12	19	.0186	5/64	.218	40
14	19	.0147	5/64	.198	30

Habirshaw Rubber Covered Braided Wire and Cable

600 Volts N.E.C.

Type R Code Grade—Circular Mill—Stranded Single-Conductor



Size Circular Mils	Thick. Insulation 64ths In.	Approx. O.D. In.	Std. Pkg. Feet	Type Package	Shipping Wt. Lb. per 1000 Feet
300000	6	.92	1000	Reel, 42"	1390
350000	6	.87	1000	Reel, 42"	1560
400000	6	1.02	1000	Reel, 42"	1740
450000	6	1.06	1000	Reel, 42"	1905
500000	6	1.10	1000	Reel, 42"	2095
600000	7	1.21	500	Reel, 42"	2695
650000	7	1.24	500	Reel, 42"	2890
700000	7	1.28	500	Reel, 42"	3055
750000	7	1.32	500	Reel, 42"	3230
800000	7	1.35	500	Reel, 42"	3400
900000	7	1.41	500	Reel, 42"	3740
1000000	7	1.47	500	Reel, 42"	4070
1250000	8	1.64	500	Reel, 48"	5490
1500000	8	1.76	500	Reel, 48"	6305
1750000	8	1.88	500	Reel, 56"	7590
2000000	8	1.98	500	Reel, 56"	8420

Unless otherwise specified the above lengths and packing will be furnished. Where special lengths are required, this should be specially noted on orders.

Type RD Code Grade—Twin Flat-Conductor



Size A.W.G. No.	Thick. Insulation 64ths In.	Approx. O.D. In.	Std. Pkg. Feet	Type Package Bundle	Shipping Wt. Lb. per 1000 Feet
12	3	.24x .45	500	Coil	92
10	3	.26x .49	500	Coil	125
8	4	.32x .60	500	Coil	190
6	4	.36x .68	1000	Reel, 30"	325
Stranded					
14	3	.23x .43	500	Coil	76
12	3	.25x .47	500	Coil	99
10	3	.27x .52	500	Coil	130
8	4	.33x .64	500	Coil	200
6	4	.38x .72	1000	Reel, 30"	340

Coils paper wrapped.

NOTE. For both cable and wire corrugated paper is used on reels up to 42 inches inclusive. Lagging is used only when specified. Sizes 48 to 84 inches inclusive, lagged.

Reels

Some sizes and kinds of wires necessarily must be shipped on reels.

In such cases the reels will be billed at cost and credited at full billing value, if returned to mill in good condition within twelve months of shipping date.

Obtain return tags and shipping instructions before shipping reels.

Habirshaw Rubber Covered Braided Wire Type RM, N. E. C. S.—3-Conductor—Solid 600 Volts



Each conductor of the 3-Conductor Rubber Covered House Wire is insulated by Black Core rubber compound. The covering over insulation is a 2 to 6 A.W.G., one rubber filled tape, and an 8 to 14 A.W.G., one saturated braid.

The conductors are grouped by twisting. They are filled with jute, covered by one rubber filled tape. The whole is covered by a saturated cotton braid.

Size A.W.G. Gauge	No. of Strands	Rubber Wall 64th Inch	Approximate O.D. Inches	Std. Pkg. Feet	Type Package	Shipping Wt., Lbs. per 1000 Feet
14	1	3	.499	1000	Reel, 30"	157
12	1	3	.536	1000	Reel, 30"	199
10	1	3	.579	1000	Reel, 30"	260
8	1	4	.703	1000	Reel, 36"	401
6	1	4	.792	1000	Reel, 36"	572
4	1	4	.914	1000	Reel, 36"	860

NOTE.—Corrugated paper used on reels up to 42 inches, inclusive, lagging used on above sizes only when specified. Sizes 48 to 84 inches inclusive, lagged.

Habirshaw Rubber Covered Braided Cable Type RM, N.E.C.S.—3-Conductor—Stranded 600 Volts



The 3-conductor stranded code house cable is used under the same conditions as solid 3-conductor code house cable unless greater flexibility is required, especially in larger sizes. Number of conductors, 3.

Range of sizes, 500,000 cm to 14 A. W. G., stranded.

Insulation on each conductor, "Black Core" rubber compound.

Covering over insulation, 500,000 cm to 6 A.W.G., one rubber filled tape, 8 to 14 A. W. G., one saturated braid.

Grouping of conductors, twisted.

Fillers, jute.

Covering over jute, one rubber filled tape.

Covering over all, one saturated braid.

Size A.W.G. Gauge	No. of Strands	Rubber Wall 64th Inch	Approximate O.D. Inches	Std. Pkg. Feet	Type Package	Shipping Wt., Lbs. per 1000 Feet
14	7	3	.507	1000	Reel, 30"	190
12	7	3	.547	1000	Reel, 30"	230
10	7	3	.592	1000	Reel, 30"	290
8	7	4	.742	1000	Reel, 36"	434
6	7	4	.839	1000	Reel, 36"	617
4	7	4	.942	1000	Reel, 42"	861
3	7	4	1.002	1000	Reel, 42"	1035
2	7	4	1.071	1000	Reel, 42"	1246
1	19	5	1.224	1000	Reel, 48"	1584
1/0	19	5	1.312	500	Reel, 42"	1914
2/0	19	5	1.409	500	Reel, 48"	2319
3/0	19	5	1.520	500	Reel, 48"	2824
4/0	19	5	1.645	500	Reel, 56"	3451
250000cm	37	6	1.815	500	Reel, 56"	4110
300000 "	37	6	1.933	500	Reel, 62"	4819
350000 "	37	6	2.043	500	Reel, 62"	5520
400000 "	37	6	2.144	500	Reel, 62"	6216
450000 "	37	6	2.239	500	Reel, 62"	6910
500000 "	37	6	2.329	500	Reel, 62"	7597

NOTE.—Corrugated paper used on reels up to 42 inches inclusive, lagging used on above sizes only when specified. Sizes 48 to 84 inclusive, lagged.

Habirshaw Rubber and Lead Covered Cable 600 Volts N.E.C.S.

Type RL Code Grade—Solid—Single Conductor



Size A.W.G. No.	No. of Strands Concentric	Thickness Insulation 64ths In.	Thickness Lead Sheath 64ths Inch	Diameter Over Lead Inches	Approx. Ship. Wt. Lb. per 1000 Ft.
18	1	2	2	.19	130
16	1	2	2	.20	140
14	1	3	2	.25	170
12	1	3	2	.27	190
10	1	3	3	.32	285
8	1	4	3	.38	335
6	1	4	4	.47	545
4	1	4	4	.52	640

Type RL Code Grade—Stranded—Single-Conductor



14	7	3	2	.25	175
12	7	3	2	.27	195
10	7	3	3	.32	300
8	7	4	3	.38	445
6	7	4	4	.47	575
4	7	4	4	.52	680
3	7	4	4	.55	745
2	7	4	4	.58	825
1	19	5	4	.64	1015
1/0	19	5	4	.68	1120
2/0	19	5	4	.73	1270
3/0	19	5	4	.78	1440
4/0	19	5	4	.84	1645

C. M.

250,000	37	6	5	.95	2355
300,000	37	6	5	1.00	2595
350,000	37	6	5	1.06	2950
400,000	37	6	5	1.10	3180
450,000	37	6	5	1.14	3400
500,000	37	6	5	1.19	3610
600,000	61	7	6	1.33	4665
650,000	61	7	6	1.36	4890
700,000	61	7	6	1.40	5355
750,000	61	7	6	1.43	5575
800,000	61	7	6	1.47	5785
900,000	61	7	6	1.53	6210
1,000,000	61	7	6	1.59	6625
1,250,000	91	8	7	1.79	8645
1,500,000	91	8	7	1.91	9655
1,750,000	127	8	7	2.02	11300
2,000,000	127	8	7	2.13	12305

Type RDL Code Grade—Solid—Twin Flat-Conductor



18	1	2	2	.19x .33	185
16	1	2	2	.20x .35	200
14	1	3	2	.25x .44	255
12	1	3	3	.30x .51	410
10	1	3	3	.32x .55	465
8	1	4	3	.38x .66	560
6	1	4	4	.47x .81	900
4	1	4	4	.52x .91	1075

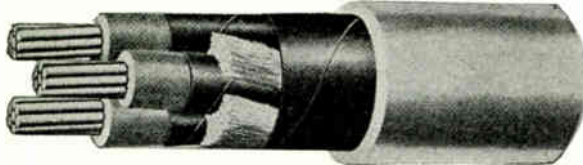
Habirshaw Lead Covered Cable
Stranded Twin Flat Conductor
 Type RDL—600 Volts, N.E.C.S.



Used under the same conditions as stranded single conductor lead covered wire. Sizes range from 0000 to 14 A.W.G., stranded. Black Core rubber compound insulation on each conductor. Rubber filled tape or braid covering over insulation. Conductors grouped parallel. When specified, round cable with 2 conductors twisted will be furnished. Covering over all is lead sheath. Type letter R D L.

Size A.W.G.	No. of Strands Concentric	Thickness Insulation 64ths Inch	Thickness Lead Sheath 64ths Inch	Diameter Over Lead Inches	Approx. Ship. Wt. Lbs. per 1000 Ft.
14	7	3	2	.260x .455	265
12	7	3	3	.310x .525	430
10	7	3	3	.335x .575	485
8	7	4	3	.395x .695	580
6	7	4	4	.465x .804	955
4	7	4	4	.510x .900	1140
3	7	4	4	.540x .955	1270
2	7	4	4	.570x1.020	1670
1	19	5	5	.675x1.190	2170
1/0	19	5	5	.715x1.275	2550
2/0	19	5	5	.760x1.365	2835
3/0	19	5	5	.810x1.470	3185
4/0	19	5	5	.870x1.585	3835

Habirshaw Lead Covered Cable
 Type RML—600 Volts, N.E.C.S.



Used for 3-phase circuits. Stranded are used where extra flexibility is required in smaller sizes and always in larger sizes where solid conductors would make cable too stiff to handle.

Contains 3 conductors. Sizes range from 500,000 cm. to 14 A. W. G. Each conductor insulated with Black Core rubber compound. Insulation covered by rubber filled tape. Conductors twisted, filled with jute. Rubber-filled tape covering over jute. Lead sheath covering over all.

Stranded, 3-Conductor Round

Size A.W.G.	No. of Strands Concentric	Thickness Insulation 64ths Inch	Thickness Lead Sheath 64ths Inch	Diameter Over Lead Inches	Approx. Ship. Wt. Lbs. per 1000 Ft.
14	7	3	3	.56	535
12	7	3	3	.60	600
10	7	3	4	.64	890
8	7	4	4	.77	1060
6	7	4	4	.92	1595
4	7	4	5	1.03	2120
3	7	4	5	1.09	2455
2	7	4	5	1.16	2705
1	19	5	6	1.33	3695
1/0	19	5	6	1.42	4335
2/0	19	5	6	1.52	4785
3/0	19	5	6	1.63	5805
4/0	19	5	7	1.79	6910
250,000	37	6	7	1.96	7710
300,000	37	6	7	2.08	9110
350,000	37	6	7	2.19	9845
400,000	37	6	8	2.32	11145
450,000	37	6	8	2.42	11860
500,000	37	6	8	2.50	12580

Solid, 3-Conductor Round

Size A.W.G.	No. of Strands Concentric	Thickness Insulation 64ths Inch	Thickness Lead Sheath 64ths Inch	Diameter Over Lead Inches	Approx. Ship. Wt. Lbs. per 1000 Ft.
18	1	2	3	.41	375
16	1	2	3	.44	405
14	1	3	4	.56	515
12	1	3	4	.60	575
10	1	3	4	.64	850
8	1	4	4	.77	1005
6	1	4	4	.92	1265
4	1	4	5	1.03	2010

Habirshaw Solid Traffic Control Cable
 600 Volts



Habirshaw Traffic Signal Control Cables are suitable for general application in control circuits rated at 600 volts or less. For normal installations, and particularly in aerial circuits, this type of cable is constructed with an overall braid covering.

A cotton braid is normally furnished, conforming to the heavy braid requirements of A.S.T.M. Designation D27, latest revision thereof. However, if desired, a cotton loom covering can be supplied.

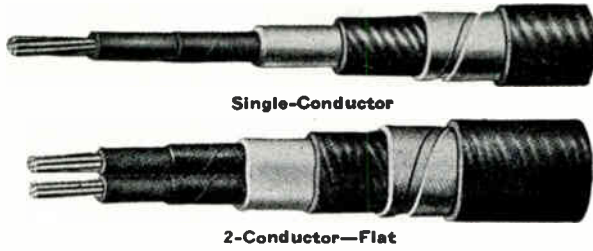
Habirshaw Traffic Signal Control Cables can be supplied in accordance with various specifications, however, the specification for Rubber Insulated, Heavy Braid or Loom Covered Multi-Conductor Signal Cable of the International Municipal Signal Association, Inc., is normally followed.

The individual rubber insulated conductors of Habirshaw Traffic Signal Control Cable are normally enclosed in a colored cotton braid, conforming to N.E.M.A. Standard Color Coding.

Size A.W.G. No.	CONDUCTORS		Thickness Insulation Inches	BRAID FINISHED CABLE	
	No.	Diameter Inches		Overall Diameter Inches	Weight per 1000 Feet
14	2	.06408	3/64	.43x .24	78
14	3	.06408	3/64	.50	138
14	4	.06408	3/64	.55	172
14	5	.06408	3/64	.60	209
14	6	.06408	3/64	.66	248
14	7	.06408	3/64	.66	269
14	8	.06408	3/64	.75	324
14	9	.06408	3/64	.80	357
14	10	.06408	3/64	.86	408
14	12	.06408	3/64	.90	464
12	2	.08081	3/64	.47x .27	99
12	3	.08081	3/64	.53	173
12	4	.08081	3/64	.59	218
12	5	.08081	3/64	.65	265
12	6	.08081	3/64	.72	317
12	7	.08081	3/64	.72	355
12	8	.08081	3/64	.81	415
12	9	.08081	3/64	.87	467
12	10	.08081	3/64	.93	522
12	12	.08081	3/64	.96	597
10	2	.1019	3/64	.52x .29	131
10	3	.1019	3/64	.58	255
10	4	.1019	3/64	.64	285
10	5	.1019	3/64	.72	355
10	6	.1019	3/64	.79	401
10	7	.1019	3/64	.79	470
10	8	.1019	3/64	.88	545
10	9	.1019	3/64	.94	605
10	10	.1019	3/64	1.01	688
10	12	.1019	3/64	1.05	778

Conductors of stranded construction can be furnished, also cables with lead sheath.

Habirshaw Steel Tape Parkway Cable



Parkway cables are used for transmission and distribution where it is preferable to bury the cables directly in the ground rather than to put them in ducts. Any kind of cable will be furnished with park cable covering, but the following types are in general use for distribution purposes.

Insulation on each conductor, Black Core rubber compound for 5000 volts or less. For higher voltage, special high voltage rubber.

Covering over insulation, rubber filled tape. Covering over tape, lead sheath.

Covering over lead sheath, asphalted jute.

Protective armor, two ungalvanized steel tapes, wound in the same direction, the outer tape covering the spaces between turns of the inner tape.

Outside covering, asphalted jute.

Parkway cables with galvanized steel tapes will be furnished when so specified.

Habirshaw Parkway Cables are made to conform to I.P.C.E.A. standards for rubber insulation and metallic coverings.

0/600 Volts

1-Conductor—Rubber Insulated

Size A.W.G. No.	No. of Strands Con- centric	Thick. Insu- lation 64ths In.	Thick. Lead Covering 64ths In.	Thick. Steel Tape Armor, In.	FINISHED CABLE		
					Overall O.D. In.	Net Wt. Lb. per 1000 Feet	Ship. Wt. Lb. per 1000 Feet
14	1	3	3	.020	.632	430	516
12	1	3	3	.020	.649	463	556
10	1	3	3	.020	.670	507	608
8	1	4	3	.020	.727	610	732
6	1	4	3	.020	.761	696	835
4	7	4	3	.020	.831	863	1036
2	7	4	4	.020	.922	1205	1446
1	19	5	4	.020	.993	1400	1680
1/0	19	5	4	.020	1.035	1543	1851
2/0	19	5	4	.020	1.079	1715	2058
3/0	19	5	4	.020	1.156	1915	2298
4/0	19	5	5	.020	1.245	2405	2886

2-Conductor—Rubber Insulated—Flat

14	1	3	3	.020	.657x	.845	569	683
12	1	3	3	.020	.674x	.879	625	750
10	1	3	4	.020	.726x	.952	835	1002
8	1	4	4	.020	.783x1.	.066	1053	1264
6	1	4	4	.020	.817x1.	.134	1193	1434
4	7	4	5	.020	.918x1.	.307	1718	2062
2	7	4	5	.030	1.038x1.	.485	2265	2718
1	19	5	5	.030	1.109x1.	.629	2672	3206
1/0	19	5	6	.030	1.182x1.	.740	3245	3894
2/0	19	5	6	.030	1.227x1.	.834	3605	4326
3/0	19	5	6	.030	1.278x1.	.934	4036	4843
4/0	19	5	6	.030	1.336x2.	.050	4550	5460

3-Conductor—Rubber Insulated

14	1	3	4	.020	.934	1015	1218
12	1	3	4	.020	.971	1112	1334
10	1	3	4	.020	1.014	1226	1471
8	1	4	4	.020	1.138	1542	1850
6	1	4	5	.020	1.243	2015	2418
4	7	4	5	.030	1.463	2800	3360
1	7	4	5	.030	1.582	3370	4044
2	19	5	6	.030	1.767	4290	5148
1/0	19	5	6	.030	1.855	4760	5712
2/0	19	5	6	.030	1.952	5300	6360
3/0	19	5	6	.030	2.063	5980	7176
4/0	19	5	7	.030	2.219	7200	8640

Habirshaw Steel Tape Parkway Cable

Continued

1001/2000 Volts

1-Conductor—Rubber Insulated

Size A.W.G. No.	No. of Strands Con- centric	Thick. Insu- lation 64ths In.	Thick. Lead Covering 64ths In.	Thick. Steel Tape Armor In.	FINISHED CABLE		
					Overall O.D. In.	Net Wt. Lb. per 1000 Feet	Ship. Wt. Lb. Per 1000 Feet
14	1	5	3	.020	.694	537	644
12	1	5	3	.020	.711	571	685
10	1	5	3	.020	.732	615	738
8	1	5	3	.020	.758	666	799
6	1	6	3	.020	.823	810	972
4	7	6	4	.020	.925	1129	1355
2	7	6	4	.020	.985	1348	1618
1	19	7	4	.020	1.056	1545	1854
1/0	19	7	4	.020	1.097	1692	2028
2/0	19	7	4	.020	1.167	1863	2236
3/0	19	7	5	.020	1.250	2293	2752
4/0	19	7	5	.020	1.308	2581	3097

2001/3000 Volts

1-Conductor—Rubber Insulated

14	1	7	3	.020	.757	645	774
12	1	7	3	.020	.774	680	816
10	1	7	3	.020	.795	724	869
8	1	7	3	.020	.821	780	936
6	1	8	4	.020	.917	1072	1286
4	7	8	4	.020	.987	1277	1532
2	7	8	4	.020	1.047	1492	1790
1	19	8	4	.020	1.087	1617	1940
1/0	19	8	4	.020	1.153	1765	2118
2/0	19	8	4	.020	1.198	1934	2320
3/0	19	8	5	.020	1.281	2387	2864
4/0	19	8	5	.020	1.339	2668	3202

3001/4000 Volts

1-Conductor—Rubber Insulated

14	1	9	3	.020	.819	752	902
12	1	9	3	.020	.836	787	944
10	1	9	3	.020	.857	833	1000
8	1	9	4	.020	.914	1045	1254
6	1	9	4	.020	.948	1146	1375
4	7	9	4	.020	1.028	1352	1622
2	7	9	4	.020	1.078	1561	1873
1	19	9	4	.020	1.143	1690	2028
1/0	19	9	4	.020	1.184	1840	2208
2/0	19	9	5	.020	1.259	2247	2696
3/0	19	9	5	.020	1.312	2480	2976
4/0	19	9	5	.020	1.370	2752	3302

4001/5000 Volts

1-Conductor—Rubber Insulated

14	1	10	3	.020	.851	806	967
12	1	10	3	.020	.868	842	1010
10	1	10	4	.020	.920	1040	1248
8	1	10	4	.020	.946	1118	1342
6	1	10	4	.020	.980	1220	1464
4	7	10	4	.020	1.050	1425	1710
2	7	10	4	.020	1.135	1630	1956
1	19	10	4	.020	1.175	1765	2118
1/0	19	10	5	.020	1.247	2142	2570
2/0	19	10	5	.020	1.292	2339	2807
3/0	19	10	5	.020	1.344	2570	3084
4/0	19	10	5	.030	1.443	3008	3610

2001/3000 Volts

2-Conductor—Rubber Insulated—Flat

8	1	7	5	.020	.908x1.	.276	1550	1860
6	1	7	5	.020	1.033x1.	.475	2035	2442

3001/4000 Volts

2-Conductor—Rubber Insulated—Flat

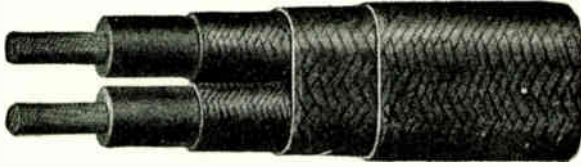
8	1	9	5	.030	1.030x1.	.469	1971	2365
6	1	9	5	.030	1.064x1.	.538	2182	2618

4001/5000 Volts

2-Conductor—Rubber Insulated—Flat

8	1	10	5	.030	1.062x1.	.533	2120	2544
6	1	10	5	.030	1.096x1.	.601	2330	2796

Habirshaw Pole and Bracket Cable 600 Volts



This type of cable is recommended for wiring between the pole base and the lighting fixture inside an ornamental pole and between the overhead circuit and the lighting fixture on a street lighting bracket; for internal or external wiring, or for any other application requiring a two-conductor, flexible cable insulated for 600 volts and less between conductors, and for higher voltages used in series street lighting between the conductor and ground.

Non-Belted—Two-Conductor

The construction consists of tinned copper conductors, rubber insulation (30% rubber to A.S.T.M. specifications can be supplied at same price) rubber filled tape or saturated braid on each conductor, the two insulated conductors laid parallel with one rubber filled tape and single cotton braid overall saturated with weatherproof compound and finish.

Application: For 600-volt service for plain conductors, and 0 to 600 volts, 2001 to 3000 volts, 3001 to 4000 volts service between conductors and ground.

Belted—Two-Conductor

The construction consists of tinned copper conductors, rubber insulation, rubber filled tape or saturated braid on each conductor, the two insulated conductors laid parallel, rubber belt, rubber filled tape and single braid or double braid overall, saturated with weather-proof compound and finished.

Application: For 600-volt service between conductors, and 4001 to 6000 volts, 7001 to 9000 volts, and 9001 to 10,000 volts between conductors and ground.

Habirshaw Armored Submarine Cable



Armored cable, or submarine cable, as it is sometimes called, is used under water for crossing rivers, bays and lakes.

Armored cable may be insulated with paper, varnished cambric or rubber compound. If insulated with paper or varnished cambric, a lead sheath is required. If insulated with rubber compound, a lead sheath is preferable, but may be omitted where the water, in which the cable is to be laid, does not contain injurious impurities and does not attain an unusually high temperature. If the cable is rubber insulated and not lead covered, it has a rubber filled cotton tape.

The leaded or taped core is served with jute yarn, run through hot asphalt compound, then armored with galvanized steel wires, *run through hot asphalt compound, served with two layers of yarn and finally run through asphalt compound.

The asphalt and jute over the armor may be omitted, if desired.

Upon receipt of inquiry stating the conditions of service, our Engineering Department will furnish additional data.

*Hot asphalt compound is also applied during armoring at the points where the armor wires come into contact, insuring complete sealing of the armor.

Habirshaw Signal Wire and Cable Association of American Railroads, Signal Division Standard

Railway signal wire is made to conform with the exacting specifications of the Association of American Railroads, Signal Section Standard and represents the standard engineering practice in this line.

The present Association of American Railroads, Signal Section Standard specification for rubber insulation is a development resulting from a study of the manufacture, inspection and use of rubber insulated wire extending over a period of many years, by a strong and representative committee of signal engineers who have given considerable time and attention to this subject. The specification has undergone changes in this time and every change has improved the product and confirmed the opinion of signal engineers as to the excellent quality of the insulation which it exacts. Habirshaw also makes a higher grade signal wire known as Habirite signal wire which is recommended for locations where operating conditions are exceptionally severe.

Habirshaw has specialized on A.A.R. Signal wire and makes all standard types including the following:

Rubber Insulated Signal Wire for 600 Volts or Less



Single conductor, solid or stranded.

Range of sizes, Nos. 1/0 to 18 A.W.G.

Insulation, A.A.R. Signal Section compound.

Covering over insulation is one cotton braid, weatherproof saturated and finished.

Thickness of insulation: Nos. 18 and 16 A.W.G., $\frac{3}{16}$ inch; Nos. 14 to 9 A.W.G., $\frac{1}{4}$ inch; Nos. 8 to 4 A.W.G., $\frac{5}{16}$ inch; and Nos. 2 to 1/0 A.W.G., $\frac{3}{8}$ inch.

Aerial Braided Cable, for 600 Volts or Less



Number of conductors as specified.

Range of sizes, Nos. 1/0 to 18 A.W.G., solid or stranded.

Insulation, A.A.R. Signal Section compound.

Paraffined jute fillers. Has one rubber filled tape over assembly; one cotton braid weatherproof saturated and finished overall. Can be furnished lead covered if requested.

Thickness of insulation: Nos. 18 and 16 A.W.G., $\frac{3}{16}$ inch; Nos. 14 to 9 A.W.G., $\frac{1}{4}$ inch; Nos. 8 to 4 A.W.G., $\frac{5}{16}$ inch; and Nos. 2 to 1/0 A.W.G., $\frac{3}{8}$ inch.

Habirshaw Control Cable



Station control cables are used for the remote control of outdoor or automotive substations and are installed in conduit being either braid or lead covered.

Number of conductors, as required.

Usual size, 19 No. 22 A.W.G. or 19 No. 25 A.W.G.

Insulation on each conductor, rubber compound of quality specified.

Thickness of insulation each conductor, $\frac{3}{16}$ inch, for 600-volt service unless otherwise specified.

Covering over insulation, colored dry cotton braid.

Grouping of conductors, cabled.

Fillers, dry jute.

Covering over assembly, one rubber filled tape.

Covering overall, one weatherproof saturated cotton braid, lead rubber jacket, or nonmetal sheath, as specified.

Identification of circuits may be made by ridged tracer in each layer of conductors, by color of rubber, or by colored braids on the conductors according to N.E.M.A. color code.

Upon receipt of inquiry stating conditions of service, our Engineering Department will furnish additional data.

Habirshaw Varnished Cambric Insulated Cable



Varnished Cambric Insulated Cable is used: In power stations and sub-stations for connecting machinery and apparatus of all voltages (see Apparatus Cable and Station Cable); In buildings in place of rubber insulated cable, where special reliability is desired; On vibrating structures where paper insulation cannot be used due to the crystallization of the lead sheath.

Insulation consists of varnished cambric tapes applied helically to the conductor with intervening layers of mineral base grease.

Varnished Cambric Insulated Cable is covered as follows: Apparatus cable, saturated cotton braid or varnished treated braid; Station cable, flameproof braid; Building mains, a saturated cotton braid or a rubber filled tape and one saturated cotton braid; Underground cable, lead sheath; Cable for outdoor structures, a rubber filled cotton tape, two galvanized steel tapes, and a layer of asphalted jute under and over the armor.

Upon receipt of inquiry stating conditions of service, our Engineering department will furnish additional data.

Specifications

Walls of Varnished Cambric, Inches

Single Conductor and Multiple Conductor Shielded Cables				Multiple Conductor Belted Cable			
Rated Voltage Volts Phase to Phase	Size A.W.G. or C.M.	Neutral Grounded	Neutral Ungrounded	Rated Voltage Volts Phase to Phase	Size A.W.G. or C.M.	NEUTRAL GROUNDED Cond. Belt	NEUTRAL UNGROUND ED Cond. Belt
0-600	14-8	.047	.047	0-600	14-8	.047	.047
	7-2	.063	.063		7-2	.063	.063
	1-4/0	.078	.078		1-4/0	.078	.078
	213,000-500,000	.094	.094		213,000-500,000	.094	.094
	500,001-1,000,000	.109	.109		500,001-1,000,000	.094 .031	.094 .031
	Over 1,000,000	.125	.125		Over 1,000,000	.109 .031	.109 .031
*601-1000	14-2	.063	.063	*601-1000	14-2	.063	.063
	1-4/0	.078	.078		1-4/0	.078	.078
	213,000-500,000	.094	.094		213,000-500,000	.094	.094
	500,001-1,000,000	.109	.109		500,001-1,000,000	.094 .031	.094 .031
	Over 1,000,000	.125	.125		Over 1,000,000	.094 .031	.109 .031
1001-2000	12-2	.078	.078	1001-2000	12-2	.078	.078
	1-4/0	.094	.094		1-4/0	.094	.094
	213,000-500,000	.094	.094		213,000-500,000	.094	.094
	500,001-1,000,000	.109	.109		500,001-1,000,000	.094 .031	.094 .031
	Over 1,000,000	.125	.109		Over 1,000,000	.109 .031	.109 .031
2001-3000	10-2	.094	.094	2001-3000	10-2	.078	.078
*(Incl. 2500)	1-4/0	.094	.094	*(Incl. 2500)	1-4/0	.094	.094
	213,000-500,000	.109	.109		213,000-500,000	.094 .031	.094 .031
	500,001-1,000,000	.109	.109		500,001-1,000,000	.094 .047	.094 .047
	Over 1,000,000	.125	.125		Over 1,000,000	.109 .047	.109 .047
3001-4000	8-4/0	.109	.109	3001-4000	8-4/0	.094	.094
	213,000-500,000	.125	.125		213,000-500,000	.094 .047	.094 .047
	500,001-1,000,000	.125	.125		500,001-1,000,000	.094 .063	.094 .063
	Over 1,000,000	.141	.141		Over 1,000,000	.109 .063	.109 .063
4001-5000	8-4/0	.125	.141	4001-5000	8-4/0	.094	.094
*(Incl. 4500)	213,000-1,000,000	.141	.156	*(Incl. 4500)	213,000-1,000,000	.109 .063	.109 .063
	Over 1,000,000	.141	.156		Over 1,000,000	.109 .078	.109 .078
5001-6000	8-4/0	.141	.156	5001-6000	8-4/0	.094	.094
	213,000-1,000,000	.141	.172		213,000-1,000,000	.109 .078	.109 .078
	Over 1,000,000	.141	.172		Over 1,000,000	.109 .078	.109 .078
6001-7000	8 and Larger	.156	.172	6001-7000	8 and Larger	.109	.109
7001-8000	6 and Larger	.172	.188	7001-8000	6 and Larger	.109	.109
*(Incl. 7500)				*(Incl. 7500)			
8001-9000	6 and Larger	.172	.203	8001-9000	6 and Larger	.125 .094	.125 .125
9001-10000	6 and Larger	.188	.234	9001-10000	6 and Larger	.141 .094	.141 .141
10001-11000	6 and Larger	.203	.250	10001-11000	6 and Larger	.156 .094	.156 .156
11001-12000	6 and Larger	.219	.250	11001-12000	6 and Larger	.156 .109	.156 .156
12001-13000	6 and Larger	.234	.281	12001-13000	6 and Larger	.172 .109	.172 .172
13001-14000	6 and Larger	.234	.296	13001-14000	6 and Larger	.188 .109	.188 .188
*14001-15000	6 and Larger	.250	.328	*14001-15000	6 and Larger	.203 .109	.203 .203
15001-16000	4 and Larger	.266	.344	15001-16000	4 and Larger	.219 .109	.219 .219
16001-17000	4 and Larger	.281	.359	16001-17000	4 and Larger	.219 .109	.219 .219
17001-18000	4 and Larger	.296	.....			
18001-19000	4 and Larger	.313	.....			
19001-20000	2 and Larger	.328	.....			
20001-21000	2 and Larger	.344	.....			
21001-22000	2 and Larger	.359	.....			
*22001-23000	2 and Larger	.375	.....			
23001-24000	2 and Larger	.391	.....			
24001-25000	2 and Larger	.406	.....			
25001-26000	2 and Larger	.422	.....			
26001-27000	2 and Larger	.438	.....			
27001-28000	1 and Larger	.453	.....			

*Recommended by the N.E.M.A.—N.E.L.A. Joint Committee on voltage standardization as "preferred voltage ratings" for general apparatus, except 1000 which has been added because of the large amount of very low voltage cable used.

All cables have an operating tolerance of 5% above the rated voltage except those rated at 15,000 volts and below which have no operating tolerance. All cables for three-phase circuits are rated on the conductor to conductor basis.

Unless otherwise specified, two-conductor cable will be of the round type.

Specifications listed above are recommended by I.P.C.E.A.

Habirshaw Service Drop and Entrance Cable 600 Volts, 3-Conductor

Habirshaw concentric bare neutral cable may be used economically for many types of installations such as service drop cable from secondary wires at the pole point of attachment at building, service entrance cable or combination service drop and service entrance permitting a non-splice connection between service wires at pole and service equipment.

It also has further use as a range cable and can be used for this service within the building up to range receptacle.

Habirshaw Service Drop and Entrance Cables have a smooth moisture-resisting flame-retarding finish. Standard color for Style SBU cable is black. Standard color for Styles SBUN and SBAT is neutral gray. However, other colors can be furnished upon request. The coverage of insulated conductors by the concentrically stranded bare neutral makes Habirshaw Service Drop and Entrance Cables virtually tamperproof.

Standard fittings are available for all types.

Style SBU Service Drop Cable Underwriters' SD



Style SBU is primarily a service drop cable for use from secondary wires at the pole to point of attachment at building. It may also be used as a service entrance cable if protected by conduit.

Style SBU cables have either one or two insulated inner conductors over which is laid a concentric bare conductor protected by a paper tape and moisture and flame-resisting braid. In 3-conductor cables, the insulated conductors are coded for quick identification.

No. Conductors	SIZE A.W.G. No.		Approx. O.D. In.	Approx. Ship. Wt. Lb. per 1000 Feet
	Insulated Conductor	Bare Neutral Concentric Conductor		
2	12	12	.322	110
3	12	12	.354x.534	190
2	10	10	.333	170
3	10	*12	.368x.560	220
3	10	12	.378x.576	230
2	8	*10	.408	230
2	8	8	.414	240
3	8	*10	.459x.687	320
3	8	8	.464x.692	340
2	6	8	.452	300
2	6	6	.470	310
3	6	8	.502x.768	420
3	6	6	.515x.781	460
2	4	6	.524	430
2	4	4	.540	440
3	4	6	.569x.889	580
3	4	4	.577x.897	640
2	2	4	.600	600
2	2	2	.622	610
3	2	4	.637x1.01	860
3	2	2	.655x1.04	960

Style SBAT Service Entrance Cable Underwriters' SE—Armored



Style SBAT armored service entrance cable for use without conduit is similar in construction to Style SBUN except that it has a flat steel armor tape applied directly over the bare neutral. It is approved for the same service as Style SBUN without exception. Style SBAT cable is generally used on the exterior of a building where it may be subject to mechanical injury.

No. Conductors	SIZE A.W.G. No.		Approx. O.D. In.	Std. Coil Length Feet	Approx. Ship. Wt. Lb. per 1000 Feet
	Insulated Conductor	Bare Neutral Concentric Conductor			
2	12	12	.391	250	120
3	12	12	.429x.546	250	201
2	10	10	.420	250	136
3	10	*12	.440x.585	250	237
3	10	10	.402x.600	250	257
2	8	*10	.475	250	241
2	8	8	.505	250	260
3	8	*10	.513x.716	250	378
3	8	8	.542x.755	250	410
2	6	8	.549	250	313
2	6	6	.567	250	349
3	6	8	.586x.843	200	498
3	6	6	.599x.856	150	532
2	4	6	.615	200	415
2	4	4	.631	200	454
3	4	6	.647x.952	150	695
3	4	4	.655x.960	150	737
2	2	4	.691	150	580
2	2	2	.731	150	675
3	2	4	.715x1.08	100	943
3	2	2	.733x1.10	100	1034

Style SBUN Service Entrance Cable Underwriters' SE



Style SBUN, service entrance cable can be installed on exterior and interior of a building without conduit.

Approved by the Underwriters for service directly to the range receptacle and may be used for the entire service or any portion of the wiring between the pole line and the electric range or service receptacle.

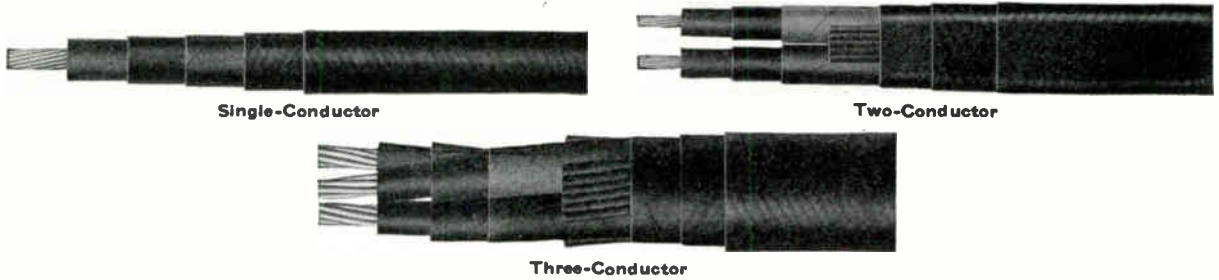
The use of Style SBUN cable reduces the items required for any installation to a minimum and thereby effects savings where used.

Style SBUN entrance cables have either one or two insulated inner conductors over which is laid a concentric bare conductor protected by two heavy rubberized tapes and a substantial weatherproofed cotton braid, finished gray or other suitable color if desired, and forming a smooth, moisture-proof covering.

No. Conductors	SIZE A.W.G. No.		Approx. O.D. In.	Std. Coil Length Feet	Approx. Ship. Wt. Lb. per 1000 Feet
	Insulated Conductor	Bare Neutral Concentric Conductor			
2	12	12	.361	250	87
3	12	12	.393x.525	250	154
2	10	10	.388	250	115
3	10	*12	.420x.525	250	183
3	10	10	.432x.585	250	205
2	8	*10	.455	250	170
2	8	8	.475	250	189
3	8	*10	.493x.721	250	331
3	8	8	.512x.740	250	342
2	6	8	.519	250	236
2	6	6	.537	250	266
3	6	8	.556x.828	200	432
3	6	6	.569x.841	150	469
2	4	6	.585	200	338
2	4	4	.601	200	388
3	4	6	.617x.937	150	624
3	4	4	.625x.945	150	672
2	2	4	.661	150	500
2	2	2	.683	150	566
3	2	4	.683x1.06	100	868
3	2	2	.703x1.08	100	921

*Not approved for use under N.E. Code.

Habirshaw Trench Type Nometal Cable For Direct Burial in Earth



Habirshaw Nometal Cable is adapted to the following types of services:
POWER COMPANIES. Low and medium tension networks, series and multiple street lighting, underground service entrances, rural underground distribution, etc.
RAILROADS. Signalling, power and lighting for yards.
MUNICIPALITIES. Street lighting, traffic signals.
AIRPORTS. Lighting and signalling.
INDUSTRIAL PLANTS. Lighting and power in yards.

The salient feature of Habirshaw Nometal Cable is that it alone of all the non-metallic trench cables has a continuous, homogeneous, non-fibrous sheath. The Habirshaw Nometal sheath is of vulcanized oil compound, a material known for half a century for water and acid-proofness, resistance to air and ozone, oxidation and decay, and general permanence.

Habirshaw Nometal Cable can be supplied with a special covering when it is desired to install it into ducts for network systems or other special service. Complete information sent on request.

600 Volts

Single-Conductor

Size A.W.G. No.	Thickness Insulation 64ths Inches	Sheath Mils	Inner Jute Mils	Outer Jute Mils	Approx. O.D. In.
14	3	50	38	62	.488
12	3	50	38	62	.505
10	3	50	38	62	.526
8	4	50	38	62	.584
6	4	50	38	62	.639
4	4	50	38	62	.687
2	4	50	38	62	.747
1	5	50	38	62	.818
1/0	5	50	38	62	.859
2/0	5	50	38	62	.904
3/0	5	50	38	62	.956
4/0	5	50	38	62	1.014

Two-Conductor

Size A.W.G. No.	Thickness Insulation 64ths Inches	Sheath Mils	Inner Jute Mils	Outer Jute Mils	Approx. O.D. In.
14	3	50	38	62	.806x .518
12	3	50	38	62	.840x .535
10	3	50	38	62	.882x .550
8	4	50	38	62	.996x .613
6	4	50	38	62	1.108x .669
4	4	50	38	62	1.204x .717
2	4	50	38	62	1.324x .777
1	5	50	38	62	1.506x .878
1/0	5	50	58	62	1.588x .929
2/0	5	50	58	62	1.678x .974
3/0	5	50	58	62	1.782x 1.026
4/0	5	50	58	62	1.898x 1.084

Three-Conductor

Size A.W.G. No.	Thickness Insulation 64ths Inches	Sheath Mils	Inner Jute Mils	Outer Jute Mils	Approx. O.D. In.
14	3	50	38	62	.848
12	3	50	38	62	.884
10	3	50	38	62	.930
8	4	50	38	62	1.055
6	4	50	38	62	1.175
4	4	50	38	62	1.279
2	4	50	38	62	1.408
1	5	50	58	62	1.601
1/0	5	50	58	62	1.690
2/0	5	50	58	62	1.786
3/0	5	50	58	62	1.898
4/0	5	50	58	62	2.023

3000 Volts

Single-Conductor

Size A.W.G. No.	Thickness Insulation 64ths Inches	Sheath Mils	Inner Jute Mils	Outer Jute Mils	Approx. O.D. In.
10	7	50	38	62	.651
8	7	50	38	62	.677
6	8	50	38	62	.764
4	8	50	38	62	.812
2	8	50	38	62	.872

Two-Conductor

Size A.W.G. No.	Thickness Insulation 64ths Inches	Sheath Mils	Inner Jute Mils	Outer Jute Mils	Approx. O.D. In.
8	7	50	38	62	1.184x .707
6	8	50	38	62	1.358x .794
4	8	50	58	62	1.494x .882

Three-Conductor

Size A.W.G. No.	Thickness Insulation 64ths Inches	Sheath Mils	Inner Jute Mils	Outer Jute Mils	Approx. O.D. In.
8	7	50	38	62	1.257
6	8	50	58	62	1.485
4	8	50	58	62	1.588
2	8	50	58	62	1.717

5000 Volts

Single-Conductor

Size A.W.G. No.	Thickness Insulation 64ths Inches	Sheath Mils	Inner Jute Mils	Outer Jute Mils	Approx. O.D. In.
10	10	50	38	62	.744
8	10	50	38	62	.771
6	10	50	38	62	.826
4	10	50	38	62	.874

Two-Conductor

Size A.W.G. No.	Thickness Insulation 64ths Inches	Sheath Mils	Inner Jute Mils	Outer Jute Mils	Approx. O.D. In.
10	10	50	38	62	1.320x .775
8	10	50	38	62	1.372x .801
6	10	50	58	62	1.524x .897
4	10	50	58	62	1.620x .945

Three-Conductor

Size A.W.G. No.	Thickness Insulation 64ths Inches	Sheath Mils	Inner Jute Mils	Outer Jute Mils	Approx. O.D. In.
10	10	50	38	62	1.404
8	10	50	58	62	1.500
6	10	50	58	62	1.621
4	10	50	58	62	1.724
2	10	50	58	62	1.853

Habirshaw Rubber Sheathed Parkway Cable



Single Conductor



Two-Conductor



Three-Conductor

Habirshaw Rubber Sheathed Parkway Cable is designed for use either in ducts or buried directly in the ground.

INSULATION. A.S.T.M. Class AO insulation (D-27-39T) or latest revision is recommended, other grades can be furnished upon application.

SHEATH. Moisture-resisting tough rubber compound containing not less than 60 per cent by weight of rubber designed to withstand exposure to moisture, alkalis and acids.

SINGLE-CONDUCTOR. Has no separator between insulation and sheath on sizes up to and including 4/0.

MULTIPLE-CONDUCTOR. Has a rubber filled tape over each conductor; jute fillers and a rubber filled tape over the assembly under the sheath.

These cables are designed to conform to dimensional and performance requirements as established in N.E.M.A. standard for Rubber Sheathed Parkway Cables.

Data for sizes and voltages not listed herein will be furnished upon application.

600 Volts
Single-Conductor

Size A.W.G. No.	Strands	Thickness Insulation 64ths Inches	Thickness Sheath 64ths Inches	Approx. O.D. Inches	APPROX. Wt., Lb.	
					Per 1000 Fr.	Ship.
14	1	5	5	.220	32	38
12	1	5	5	.237	37	44
10	1	5	5	.258	53	64
8	1	5	5	.284	77	92
6	7	5	5	.339	130	156
4	7	5	5	.380	174	209
2	7	5	5	.448	263	316
1	19	6	6	.520	340	408
1/0	19	6	6	.561	420	504
2/0	19	6	6	.607	515	618
3/0	19	6	6	.658	635	762
4/0	19	6	6	.716	785	942

Two-Conductor

14	1	3	5	.562	115	138
12	1	3	5	.596	145	174
10	1	3	6	.667	200	240
8	1	4	6	.784	290	348
6	7	4	6	.894	389	466
4	7	4	7	1.023	545	654
2	7	4	7	1.143	740	888
1	19	5	8	1.316	970	1164
1/0	19	5	8	1.399	1150	1380
2/0	19	5	8	1.490	1380	1656
3/0	19	5	8	1.593	1640	1968
4/0	19	5	8	1.708	1970	2364

Three-Conductor

14	1	3	6	.622	190	228
12	1	3	6	.659	235	282
10	1	3	6	.703	280	336
8	1	4	6	.826	410	492
6	7	4	7	.982	566	679
4	7	4	7	1.085	780	936
2	7	4	7	1.218	1085	1302
1	19	5	8	1.395	1360	1632
1/0	19	5	8	1.484	1640	1968
2/0	19	5	8	1.583	1920	2304
3/0	19	5	8	1.692	2300	2760
4/0	19	5	10	1.889	2930	3516

2001 to 3000 Volts
Single-Conductor

Size A.W.G. No.	Strands	Thickness Insulation 64ths Inches	Thickness Sheath 64ths Inches	Approx. O.D. Inches	APPROX. Wt., Lb.	
					Per 1000 Fr.	Ship.
4	7	8	4	.607	315	378
2	7	8	5	.699	451	537
1	19	8	5	.739	520	620
1/0	19	8	5	.780	602	718
2/0	19	8	5	.825	703	839
3/0	19	8	5	.877	840	1008
4/0	19	8	5	.935	1023	1228

Two-Conductor

4	7	8	8	1.304	740	888
2	7	8	8	1.424	1000	1200
1	19	8	8	1.504	1150	1380
1/0	19	8	8	1.586	1340	1608
2/0	19	8	8	1.676	1565	1878
3/0	19	8	10	1.843	1920	2304
4/0	19	8	10	1.969	2300	2760

Three-Conductor

4	7	8	8	1.383	1090	1308
2	7	8	8	1.512	1445	1734
1	19	8	8	1.598	1625	1950
1/0	19	8	8	1.686	1895	2274
2/0	19	8	10	1.846	2320	2784
3/0	19	8	10	1.958	2760	3312
4/0	19	8	10	2.083	3270	3924

4001 to 5000 Volts
Single-Conductor

4	7	10	5	.701	386	459
2	7	10	5	.761	503	599
1	19	10	5	.801	572	682
1/0	19	10	5	.842	657	788
2/0	19	10	5	.887	769	923
3/0	19	10	5	.939	910	1092
4/0	19	10	6	1.029	1252	1496

Two-Conductor

4	7	10	8	1.430	865	1038
2	7	10	8	1.550	1145	1350
1	19	10	8	1.635	1270	1524
1/0	19	10	8	1.712	1460	1752
2/0	19	10	10	1.865	1780	2136
3/0	19	10	10	1.969	2085	2502
4/0	19	10	10	2.085	2460	2952

Three-Conductor

4	7	10	8	1.518	1250	1500
2	7	10	8	1.648	1610	1932
1	19	10	8	1.734	1800	2160
1/0	19	10	10	1.885	2200	2640
2/0	19	10	10	1.982	2565	3078
3/0	19	10	10	2.094	2990	3588
4/0	19	10	10	2.219	3500	4200

Habirshaw Habirdure Non-Inflammable Wire and Cable

Type SN—600 Volts



Habirshaw Habirdure Non-Inflammable Wire and Cable is insulated with a synthetic plastic material which is non-inflammable, highly resistant to oils and corrosive chemicals. Electrically it has high dielectric strength and is highly corona-resistant. It is mechanically tough and requires no outer protective covering.

In view of its oil proofness and neat appearance, Habirdure wire is particularly recommended for machine tool and printing press wiring, switchboards, chemical plants, sewage disposal plants and around batteries, in fact, in all places where oil or corrosive substances affect the usual grades of rubber.

Habirdure is approved by the Underwriters' Laboratories under Guide Card 460-190Y, File E13092 for use as follows:

In recognized metal raceways where exposed to oil, temperatures not exceeding 60°C., and in damp places but not in moist locations as described in Section 3035 of the 1937 Edition of the National Electrical Code.

On switchboards where oil is not present and temperatures do not exceed 80°C.

Within appliances where exposed to oil and temperatures not exceeding 60°C.

Within appliances where exposed to air and temperatures not exceeding 80°C.

Habirdure can be supplied in the following colors: black, blue, green, yellow, brown, red, orange, white, and purple.

Size A.W.G. No.	Strands	Wall Thickness Inches	Approx. O.D. Inches	Approx. Net Wt. Lb. per 1000 Feet
*20	Solid	3/64	.098	7
	7	3/64	.102	8
*18	Solid	3/64	.106	9
	7	3/64	.112	10
	19	3/64	.112	10
*16	Solid	3/64	.117	13
	7	3/64	.124	14
	19	3/64	.125	14
14	Solid	3/64	.130	20
	7	3/64	.139	22
	19	3/64	.140	22
12	Solid	3/64	.147	28
	7	3/64	.158	31
	19	3/64	.159	31
10	Solid	3/64	.168	41
	7	3/64	.182	45
	19	3/64	.183	45
8	Solid	3/64	.224	69
	7	3/64	.244	75
	19	3/64	.245	75
6	Solid	3/64	.246	75
	7	3/64	.292	110
	19	3/64	.314	119
4	Solid	3/64	.316	119
	7	3/64	.316	119
	19	3/64	.363	176
3	Solid	3/64	.365	176
	7	3/64	.366	176
	19	3/64	.367	176
2	Solid	3/64	.391	215
	7	3/64	.391	215
	19	3/64	.394	215
1	Solid	3/64	.395	215
	7	3/64	.395	215
	19	3/64	.423	267
1/0	Solid	3/64	.427	267
	7	3/64	.427	267
	19	3/64	.428	267
2	Solid	3/64	.428	267
	7	3/64	.428	267
	19	3/64	.496	339
3	Solid	3/64	.497	339
	7	3/64	.497	339
	19	3/64	.497	339
4	Solid	3/64	.503	339
	7	3/64	.503	339
	19	3/64	.503	339

*For 300 volts.

Habirshaw Tree Wire

Solid—Single Conductor
Grounded and Ungrounded Neutral



Habirshaw Tree Wire is a single, rubber insulated, medium-hard drawn, tinned copper conductor, enclosed in protective coverings of rubber filled tapes, pre-asphalt saturated with weather-resisting compound.

It is used to maintain uniform line voltage where service lines extend through trees. It prevents dangerous arcs, eliminates short circuits, leakage, swinging grounds and removes the cause of flickering lights and radio interference.

Habirshaw Tree Wire gives maximum protection at low cost. It is available in a wide range of voltages, has long life, and gives dependable, uninterrupted service.

Circuit Voltage	Size A.W.G. No.	On Insulators		Approx. Overall Diameter Inches	Approx. Net Wt. Lb. per 1000 Feet
		Thickness Insulation 64ths Inches	Approx. Net Wt. Lb. per 1000 Feet		
0-600	8	4	7	.526	194
	6	4	8	.560	240
	4	4	9	.602	304
601-1000	8	4	7	.526	194
	6	5	8	.591	260
	4	5	9	.633	329
1001-5000	8	5	8	.557	215
	6	5	9	.591	260
	4	5	10	.633	329
0-600	8	4	7	.526	194
	6	4	8	.560	240
	4	4	9	.602	304
601-1000	8	4	7	.526	194
	6	5	8	.591	260
	4	5	9	.633	329
1001-2000	8	5	8	.557	215
	6	6	9	.623	284
	4	6	10	.665	352
2001-3000	8	7	9	.620	259
	6	8	10	.685	335
	4	8	11	.727	409
3001-4000	8	9	11	.682	310
	6	9	12	.716	364
	4	9	13	.758	437
4001-5000	8	10	12	.715	370
	6	10	13	.748	391
	4	10	14	.790	473

Habirshaw P.D.C.P. Habir-Bus Drop Cable



For branch circuits from bus to individual machine tool drives. Habir-Bus Drop Cable is resistant to oil, grease, gasoline and mechanical abuses. It is flexible and easy to handle. Provides a low cost installation.

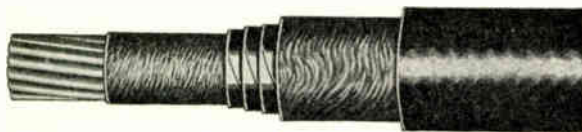
The cable consists of three rubber insulated stranded copper conductors, color-coded, and one uninsulated ground conductor cabled together with impregnated jute fillers, covered with a pre-saturated fibrous tape and a heavy durable loom, saturated and finished with a compound that renders it flame-retarding and moisture-resisting.

For installing this cable, adaptable fittings can be obtained from leading fitting manufacturers.

Size A.W.G. No.	Strands	Approx. O.D. In.	Approx. Ship. Wt. Lb. per 1000 Feet
1/0	19/.1055	1.580	2680
1	19/.0664	1.480	2300
2	7/.0974	1.300	1990
3	7/.0867	1.250	1637
4	7/.0772	1.215	1338
6	7/.0612	1.076	937
8	7/.0486	.900	602
10	7/.0385	.743	427
12	7/.0305	.661	407
14	7/.0242	.621	362

Habirshaw Braided A.V.C Power Cable

Stranded Conductor
600 Volts



Insulated with felted asbestos, varnished cambric, felted asbestos and asbestos braid.

For general power wiring, either open or in conduit where heat with limited moisture or vapor is encountered. It will maintain uninterrupted service under conditions prohibitive to ordinary insulations.

Steel mills, boiler rooms, industrial plants, refineries, power plants, soaking pits, furnaces, ovens, lehrs, tender frames, and steam tunnels present many applications for this heat and moisture-resistant cable.

Finished black with a compound that will resist heat, flame, moisture, oil and corrosive vapors.

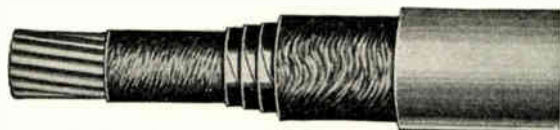
Where exposed to excessive moisture, lead covered cables should be used.

Approved by Underwriters' Laboratories.

Available in 1000, 2000, 3000, 5000, and 8000-volt construction.

Habirshaw Lead Sheathed A.V.C. Power Cable

Stranded Conductor
600 Volts



Recommended for use in conduit exposed to widely varying conditions throughout its length.

It is particularly suitable for power stations located at tidewater where ducts are sometimes flooded but other parts of the same circuit are exposed to high temperature, also where condensation is especially heavy, as in ashpits where it is the practice to wet down ashes.

Lead sheathed cable is of standard A.V.C. construction, except that a lead sheath has been substituted for the asbestos braid.

The lead sheath enables this cable to stand up successfully when completely and continually submerged.

Approved by Underwriters' Laboratories

Size A.W.G.	Stranding	Bare Diam. In.	*Avg. Nom. Fin. Diam. In.	STD. SHIP. LENGTHS, FT. Coils	Reels	Approx. Net Wt. Lb. per 1000 Feet
18	7/.0151	.045	.255	1000	....	33
16	7/.0193	.058	.270	1000	....	39
14	7/.0242	.073	.285	1000	....	46
12	7/.0305	.092	.305	1000	....	59
10	7/.0385	.116	.330	500	....	76
8	7/.0486	.146	.360	500	....	100
6	7/.0612	.184	.395	500	1000	141
5	7/.0688	.206	.420	....	1000	166
4	7/.0772	.232	.445	....	1000	193
3	7/.0867	.260	.470	....	1000	238
2	7/.0974	.292	.505	....	1000	287
1	19/.0664	.332	.585	....	1000	371
1/0	19/.0745	.373	.625	....	1000	476
2/0	19/.0837	.418	.670	....	1000	571
3/0	19/.0940	.470	.720	....	1000	690
4/0	19/.1055	.528	.780	....	1000	839

Size C.M.	Stranding	Bare Diam. In.	*Avg. Nom. Fin. Diam. In.	STD. SHIP. LENGTHS, FT. Coils	Reels	Approx. Net Wt. Lb. per 1000 Feet
250,000	37/.0822	.575	.885	....	500	1017
300,000	37/.0900	.630	.940	....	500	1188
350,000	37/.0973	.681	.995	....	500	1357
400,000	37/.1040	.728	1.040	....	500	1525
450,000	37/.1103	.772	1.085	....	500	1692
500,000	37/.1162	.814	1.125	....	500	1860
550,000	61/.0950	.855	1.165	....	500	2027
600,000	61/.0992	.893	1.205	....	500	2193
650,000	61/.1032	.929	1.240	....	500	2359
700,000	61/.1071	.964	1.275	....	500	2524
750,000	61/.1109	.998	1.310	....	500	2689
800,000	61/.1145	1.031	1.345	....	500	2854
850,000	61/.1180	1.062	1.375	....	500	3018
900,000	61/.1215	1.093	1.405	....	500	3182
950,000	61/.1248	1.123	1.435	....	500	3346
1,000,000	61/.1280	1.152	1.465	....	500	3510

*A tolerance of plus or minus 5% is necessary due to variations in process of manufacture. Dielectric test voltages in kilovolts, 2.5 for sizes 18 to 8, 3.0 for 6 to 4/0 and 4.0 for 250,000 to 1,000,000 C.M.

Size A.W.G.	Stranding	Bare Diam. In.	*Avg. Nom. Fin. Diam. In.	Std. Ship. Length of Reels Ft.	Approx. Net Wt. Lb. per 1000 Feet
18	7/.0151	.045	.290	1000	209
16	7/.0193	.058	.305	1000	224
14	7/.0242	.073	.320	1000	243
12	7/.0305	.092	.340	1000	267
10	7/.0385	.116	.360	1000	301
8	7/.0486	.146	.390	1000	348
6	7/.0612	.184	.430	1000	412
5	7/.0688	.206	.450	1000	454
4	7/.0772	.232	.480	1000	504
3	7/.0867	.260	.505	1000	563
2	7/.0974	.292	.570	1000	774
1	19/.0664	.332	.620	1000	890
1/0	19/.0745	.373	.660	1000	1005
2/0	19/.0837	.418	.705	1000	1144
3/0	19/.0940	.470	.755	1000	1313
4/0	19/.1055	.528	.815	1000	1516

Size C.M.	Stranding	Bare Diam. In.	*Avg. Nom. Fin. Diam. In.	Std. Ship. Length of Reels Ft.	Approx. Net Wt. Lb. per 1000 Feet
250,000	37/.0822	.575	.955	500	2033
300,000	37/.0900	.630	1.010	500	2269
350,000	37/.0973	.681	1.060	500	2500
400,000	37/.1040	.728	1.105	500	2724
450,000	37/.1103	.772	1.150	500	2944
500,000	37/.1162	.814	1.190	500	3161
550,000	61/.0950	.855	1.265	500	3786
600,000	61/.0992	.893	1.305	500	3923
650,000	61/.1032	.929	1.340	500	4140
700,000	61/.1071	.964	1.375	500	4356
750,000	61/.1109	.998	1.410	500	4570
800,000	61/.1145	1.031	1.440	500	4783
850,000	61/.1180	1.062	1.470	500	5042
900,000	61/.1215	1.093	1.505	500	5201
950,000	61/.1248	1.123	1.535	500	5407
1,000,000	61/.1280	1.152	1.560	500	5613

*A tolerance of plus or minus 5% is necessary due to variations in process of manufacture. Dielectric test voltages in kilovolts, 2.5 for sizes 18 to 8, 3.0 for 6 to 4/0 and 4.0 for 250,000 to 1,000,000 C.M.

Habirshaw A.V.C. Boiler Room Wire and Cable

Solid Conductor
600 Volts



Sizes 18 to 8 are insulated with varnished cambric and a heavy layer of felted asbestos. Sizes 6 to 4/0 have an additional layer of felted asbestos over the conductor.

Used for open wiring and general conduit work where exposed to heat, corrosive vapors, oil, or grease. Designed especially for boiler rooms, ovens, furnaces, lehrs, tender frames, soaking pits, elevators and locomotive control panels. Where parts of the circuit are liable to long periods of submersion, lead sheathed A.V.C. cable is recommended.

Finished black with a compound that will resist heat, flame, moisture and corrosive vapors.

Approved by Underwriters' Laboratories.

Solid

Size A.W.G. No.	Stranding	Bare Diam. In.	*Avg. Nom. Fin. Diam. In.	STD. SHIP. LENGTHS, Ft. Coils	Reels	Approx. Net Wt. Lb. per 1000 Feet
18040	.220	1000	2000	27
16051	.235	1000	2000	31
14064	.245	1000	2000	38
12081	.265	1000	1500	47
10102	.285	1000	1500	62
8128	.310	500	1000	87
6162	.385	500	1000	138
5182	.405	...	1000	160
4204	.425	...	1000	193
3229	.450	...	1000	231
2258	.480	...	500	279
1289	.530	...	500	348
1/0325	.565	...	500	422
2/0365	.605	...	500	543
3/0410	.650	...	500	657
4/0460	.700	...	450	800

Stranded

Size A.W.G. No.	Stranding	Bare Diam. In.	*Avg. Nom. Fin. Diam. In.	STD. SHIP. LENGTHS, Ft. Coils	Reels	Approx. Net Wt. Lb. per 1000 Feet
18	7/.0151	.045	.225	1000	2000	27
16	7/.0193	.058	.240	1000	2000	31
14	7/.0242	.073	.255	1000	2000	38
12	7/.0305	.092	.275	1000	1500	47
10	7/.0385	.116	.295	1000	1500	63
8	7/.0486	.146	.325	1000	1000	88
6	7/.0612	.184	.405	500	1000	140
5	7/.0688	.206	.430	500	1000	162
4	7/.0772	.232	.455	...	1000	196
3	7/.0867	.260	.480	...	1000	235
2	7/.0974	.292	.515	...	500	283
1	19/.0664	.332	.575	...	500	353
1/0	19/.0745	.373	.615	...	500	429
2/0	19/.0837	.418	.640	...	500	551
3/0	19/.0940	.470	.710	...	500	667
4/0	19/.1055	.528	.770	...	450	812

*A tolerance of plus or minus 5% is necessary due to variations in process of manufacture. Dielectric test voltages in kilovolts, 2.5 for sizes 18 to 8 and 3.0 for 6 to 4/0.

Habirshaw Heat Resisting Fixture Wire

300 Volts

Underwriters' Type AF—Plain



White Asbestos Insulation



Black Asbestos Insulation

Underwriters' Type AF—Braided



Solid Color Braid



Solid Color Braid with Marker

Heat-Resisting Fixture Wire is designed for use in lighting fixtures, such as small motor leads, wiring of electric ranges, electrified office equipment, radio apparatus, and miniature switchboards.

Size A.W.G. No.	Stranding Min. In.	Thick. Insulation In.	AVERAGE FINISHED DIAMETER, INCHES—			STAN. SHIP. LENGTHS, Ft.		APPROX. NET WT. Lb. 1000 Ft. Cotton Rayon		
			Plain	Cotton	Rayon	Spools	Coils	Plain	Cotton	Rayon
18	16/30	.031	.110	.135	.125	500	1000	11	13	12
16	26/30	.031	.125	.150	.140	500	1000	15	17	16
14	41/30	.031	.140	.165	.155	500	1000	20	23	22
12	65/30	.047	.195	.220	.210	250	500	36	40	38
*12	65/30	.040	.180	.205	.195	250	500	33	37	36
10	105/30	.047	.220	.245	.235	250	500	51	55	53
*10	105/30	.040	.205	.230	.220	250	500	47	51	50

*Not approved by the Underwriters' Laboratories as fixture wire.

A tolerance of plus or minus 5% is necessary due to variations in process of manufacture.

Habirshaw A.V.C. Switchboard Wire and Cable

Solid Conductor
600 Volts



Consists of a tinned copper conductor either solid or stranded, a wall of varnished cambric, a heavy wall of felted asbestos impregnated with flame and moisture-resisting insulating compound and a closely woven braid of cotton finished with a flame-resisting compound.

Standard colors are gray and black; other colors can be furnished as specified.

Approved by Underwriters' Laboratories.

Size A.W.G. No.	Bare Diameter Inches	*Average Nominal Finished Diameter Inches	STD. SHIP. LENGTHS, Ft.		Approx. Net Wt. Lb. per 1000 Feet
			Coils	Reels	
18	.040	.180	1000	3000	23
16	.051	.195	1000	2500	27
14	.064	.205	500	2500	34
12	.081	.225	500	2000	44
10	.102	.245	500	1500	59
8	.128	.270	500	1000	82
6	.162	.370	....	1000	155
4	.204	.410	....	1000	210
2	.258	.465	....	1000	300
1	.289	.495	....	1000	365
1/0	.325	.530	....	500	435
2/0	.365	.570	....	500	530
3/0	.410	.615	....	500	650
4/0	.460	.665	....	450	800

*A tolerance of plus or minus 5% is necessary due to variations in process of manufacture. Dielectric test voltages in kilovolts, 2.5 for sizes 18 to 8 and 3.0 for 6 to 4/0.

Habirshaw All-Asbestos Power and Rheostat Cable
Stranded Conductor
600 Volts



All-Asbestos Power and Rheostat Cable is recommended for open wiring at 600 volts or less where subjected to heat, fumes, oil, grease, or fire hazard, and in applications such as grid jumper connections, connections from grids to face-plates, switchboard wiring in hot locations, elevator and locomotive panel wiring.

Approved by the Underwriters' Laboratories.

Size A.W.G.	Stranding	Bare Diam. In.	*Avg. Nom. Fin. Diam. In.	STD. SHIP. LENGTHS, FT. Coils	Reels	Approx. Net Wt. Lb. per 1000 Feet
18	7/.0151	.045	.215	1000	....	26
16	7/.0193	.058	.230	1000	....	31
14	7/.0242	.073	.245	1000	....	38
12	7/.0305	.092	.265	1000	....	48
10	7/.0385	.116	.290	500	....	63
8	7/.0486	.146	.320	500	....	87
6	7/.0612	.184	.395	500	1000	132
5	7/.0688	.206	.420	...	1000	157
4	7/.0772	.232	.445	...	1000	188
3	7/.0867	.260	.470	...	1000	227
2	7/.0974	.292	.505	...	1000	274
1	19/.0664	.332	.605	...	1000	388
1/0	19/.0745	.373	.645	...	1000	462
2/0	19/.0837	.418	.690	...	1000	555
3/0	19/.0940	.470	.740	...	1000	672
4/0	19/.1055	.528	.800	...	1000	819

Size C.M.	Stranding	Bare Diam. In.	*Avg. Nom. Fin. Diam. In.	STD. SHIP. LENGTHS, FT. Coils	Reels	Approx. Net Wt. Lb. per 1000 Feet
250,000	37/.0822	.575	.905	...	500	982
300,000	37/.0900	.630	.960	...	500	1219
350,000	37/.0973	.681	1.015	...	500	1317
400,000	37/.1040	.728	1.060	...	500	1482
450,000	37/.1103	.772	1.105	...	500	1647
500,000	37/.1162	.814	1.145	...	500	1812
550,000	61/.0950	.855	1.185	...	500	1977
600,000	61/.0992	.893	1.225	...	500	2142
650,000	61/.1032	.929	1.260	...	500	2307
700,000	61/.1071	.964	1.295	...	500	2470
750,000	61/.1109	.998	1.330	...	500	2631
800,000	61/.1145	1.031	1.365	...	500	2796
850,000	61/.1180	1.062	1.395	...	500	2961
900,000	61/.1215	1.093	1.425	...	500	3126
950,000	61/.1248	1.123	1.455	...	500	3291
1,000,000	61/.1280	1.152	1.485	...	500	3456

*A tolerance of plus or minus 5% is necessary due to variations in process of manufacture. Dielectric test voltage 1.5 kilovolts on all sizes.

Habirshaw Motor Lead Wire
Single Conductor—600 Volts



Habirshaw extra flexible motor lead wire is available with tinned copper or bare copper conductor, with or without cotton separator, insulation N.E.C. rubber and weather-proof or lacquer finish braid.

Size A.W.G.	Thickness Inches	Stranding	Coils Feet	Ship. Wt., Lb., per 1000 Ft.
18	1/32	16x30	500	14
16	1/32	26x30	500	18
14	3/64	41x30	500	32
12	3/64	105x30	500	43
10	3/64	133x29	500	55
8	3/64	133x29	250	121
6	3/64	133x27	250	136
4	3/64	133x25	250	194

Habirshaw Mold Cured Cords and Cables
Rubber Armored—Cured in Lead

Made in many types to meet various service conditions. Used wherever a flexible portable lead is needed for the transmission of electrical energy. The 60% Habirshaw mold cured rubber jacket is unexcelled for toughness and resistance to abrasion. Recommended for electric shovels, dredges, mining equipment, and other portable services where a flexible, abrasion-resisting cable is required.

Type W—600 Volts



Size A.W.G. No.	Stranding	Single-Conductor		Two-Conductor		Three-Conductor		Four-Conductor	
		Approx. O.D. In.	Approx. Wt. Lb. per 1000 Feet	Approx. O.D. In.	Approx. Wt. Lb. per 1000 Feet	Approx. O.D. In.	Approx. Wt. Lb. per 1000 Feet	Approx. O.D. In.	Approx. Wt. Lb. per 1000 Feet
8	49	.42	175	.79	500	.90	735	.97	845
8	133	.43	180	.80	505	.91	745	.99	855
6	49	.48	250	.91	760	.99	910	1.07	1065
6	133	.49	245	.93	765	1.01	910	1.10	1065
6	259	.51	250	.94	775	1.02	930	1.11	1085
5	49	.52	280	1.00	875	1.09	1060	1.18	1355
5	133	.52	275	1.00	875	1.09	1060	1.18	1355
4	49	.54	325	1.11	995	1.21	1225	1.32	1575
4	133	.55	330	1.14	1010	1.23	1340	1.35	1590
4	259	.56	325	1.14	1015	1.23	1340	1.35	1595
3	49	.60	395	1.21	1160	1.28	1485	1.39	1760
3	133	.62	405	1.24	1285	1.31	1510	1.43	1795
3	259	.63	390	1.24	1290	1.31	1515	1.43	1810
2	49	.65	435	1.24	1410	1.35	1685	1.50	2220
2	133	.65	465	1.31	1440	1.39	1935	1.55	2270
2	259	.65	445	1.30	1420	1.38	1905	1.54	2230
2	427	.65	435	1.30	1420	1.38	1905	1.54	2230
1	133	.72	570	1.49	1910	1.57	2245	1.75	3055
1	259	.72	545	1.48	1880	1.56	2210	1.74	3015
1	427	.72	525	1.48	1885	1.56	2215	1.74	3015
1/0	133	.76	635	1.58	2155	1.71	2945	1.87	3305
1/0	259	.77	625	1.57	2125	1.70	2905	1.85	3245
1/0	427	.77	620	1.57	2125	1.70	2905	1.85	3245
2/0	133	.82	750	1.71	2815	1.82	3345	2.02	4295
2/0	259	.82	730	1.70	2775	1.81	3250	2.01	4235
2/0	427	.82	730	1.70	2775	1.81	3300	2.01	4240
3/0	259	.88	950	1.82	2940	1.97	4055	2.15	4815
3/0	427	.89	970	1.84	3000	1.99	4120	2.16	4885
4/0	259	.94	1110	1.98	3870	2.11	4645	2.34	5635
4/0	427	.95	1140	2.01	3955	2.13	4730	2.37	5760

Type S Cord—600 Volts



For electrical tools and appliances.

Size A.W.G. No.	Two-Conductor		Three-Conductor		Four-Conductor	
	Approx. O.D. In.	Approx. Wt. Lb. per 1000 Feet	Approx. O.D. In.	Approx. Wt. Lb. per 1000 Feet	Approx. O.D. In.	Approx. Wt. Lb. per 1000 Feet
18	.390	82	.405	93	.435	114
16	.405	93	.430	111	.485	140
14	.530	158	.560	299	.605	340
12	.605	316	.635	355	.665	395
10	.640	359	.690	420	.745	490

Type SJ Cord—300 Volts



For drop lights, lamps, and small tools.

Size A.W.G. No.	Two-Conductor		Three-Conductor		Four-Conductor	
	Approx. O.D. In.	Approx. Wt. Lb. per 1000 Feet	Approx. O.D. In.	Approx. Wt. Lb. per 1000 Feet	Approx. O.D. In.	Approx. Wt. Lb. per 1000 Feet
18	.305	61	.335	77	.360	90
16	.330	73	.360	95	.390	110
14	.425	116	.470	150	.....	.....

Phelps Dodge Bare Copper Wire and Cable

The Bare Copper Wire and Cable listed below are manufactured by the American Copper Products Division of Phelps Dodge Copper Products Corporation at their mills, Bayway, New Jersey.

They are all made, unless otherwise specified, to the specifications of the American Society for Testing Materials which are the recognized American Standard.

Solid Conductor



Size A.W.G. No.	Diam. In.	Cap. C.M.	WEIGHT, POUNDS		
			Per 1000 Feet	Per Mile	Std. Pkg. in Coils
14	.064	4107	12.43	66	250
13	.072	5178	15.68	83	250
12	.081	6530	19.77	104	250
11	.091	8234	24.92	132	250
10	.102	10380	31.43	166	250
9	.114	13090	39.63	209	250
8	.128	16510	49.98	264	250
7	.144	20820	63.02	333	250
6	.162	26250	79.46	420	250
5	.182	33100	100.2	529	250
4	.204	41740	126.4	667	250
3	.229	52640	159.3	841	250
2	.258	66370	200.9	1061	250
1	.289	83690	253.3	1337	250

Concentric Strands



Size A.W.G.	Standard Stranding	WEIGHT, POUNDS	
		Per 1000 Feet	Per Mile
8	7	51	269
6	7	81	428
5	7	102	540
4	7	129	681
3	7	163	858
2	7	205	1082
1	7	258	1364
1/0	7	326	1720
2/0	7	411	2169
3/0	7	518	2736
4/0	19 or 7	653	3450

Size C.M.	Standard Stranding	WEIGHT, POUNDS	
		Per 1000 Feet	Per Mile
250,000	19	772	4076
300,000	19	926	4891
350,000	19	1080	5706
400,000	19	1235	6521
450,000	37	1389	7336
500,000	37	1544	8151
550,000	37	1698	8966
600,000	37	1853	9781
650,000	37	2007	10596
700,000	37	2161	11412
750,000	61	2316	12227
800,000	61	2470	13042
850,000	61	2624	13857
900,000	61	2779	14672
950,000	61	2933	15487
1,000,000	61	3088	16302

Phelps Dodge Weatherproof Wire and Cable

Triple Braid—URC Finish

Weather-resisting wires and cables (weatherproof) with the saturant and finish of similar character known to the industry as Type URC.

Solid



Size A.W.G. No.	Wt. Lb. per 1000 Feet	STANDARD PACKAGE, FT.		APPROX. NET WT., LB.	
		Reels	Coils	Reels	Coils
*14	25	.....	900	.....	23
*12	35	.....	700	.....	25
*10	53	4500	1750	239	93
9	62	.....	.....	.....	.....
*8	75	3400	2200	255	165
6	112	2860	1430	320	160
5	135	2200	1100	297	149
4	164	1700	875	279	144
3	199	1400	1400	279	279
2	260	1250	1250	325	325
1	316	990	990	313	313
1/0	407	3500	760	1425	309
2/0	502	3000	600	1506	301
3/0	629	2500	500	1572	315
4/0	767	2000	400	1534	307

*Also furnished in bundles, 100 pounds to a bundle.

Stranded



Size A.W.G. No.	Wt. Lb. per 1000 Feet	Standard Package Reels Feet	Net Wt. Lb. Std. Pkg. Reels
6	115	3000	345
5	140	2000	280
4	170	2000	340
3	206	1500	309
2	270	1250	338
1	328	1000	328
0	424	4000	1700
00	522	3500	1830
000	653	3000	1960
0000	800	2500	2000

Size C.M. No.	Wt. Lb. per 1000 Feet	Standard Package Reels Feet	Net Wt. Lb. Std. Pkg. Reels
300,000	1,174	3000	3522
350,000	1,345	2500	3363
400,000	1,553	2400	3727
450,000	1,724	2000	3448
500,000	1,894	2000	3788
600,000	2,235	1600	3576
700,000	2,650	1500	3975
750,000	2,822	1400	3951
800,000	2,992	1250	3740
900,000	3,332	1000	3332
1,000,000	3,674	1000	3674
1,250,000	4,508	800	3606
1,500,000	5,380	700	3766
1,750,000	6,193	600	3716
2,000,000	7,008	500	3504

Phelps Dodge Slow Burning Wire and Cable

Underwriters' Approved
Solid—Triple Braid

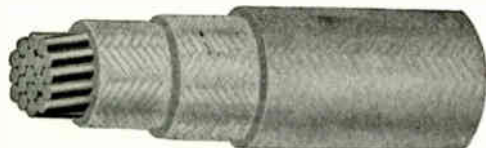


All three braids of cotton are thoroughly saturated with white fireproof compound. The compound used on the outer braid becomes very hard, but still the wire retains its flexibility. As this insulation does not deteriorate in a continued high temperature, it is especially suitable for engine and boiler rooms, furnaces, and foundries.

Size A.W.G. No.	Wt. Lb. per 1000 Feet	STANDARD PACKAGE, FT.		APPROX. NET WT., LB.	
		Reels	Coils	Reels	Coils
14	40	.....	.....	.....	*100
12	55	.....	.....	.....	*100
10	80	.....	.....	.....	*100
8	100	.....	.....	.....	*100
6	160	.....	1430	.....	229
4	220	.....	875	.....	193
2	320	.....	1250	.....	400
1	365	.....	990	.....	361
1/0	495	3500	760	1733	376
2/0	600	3000	600	1800	360
3/0	760	2500	500	1900	380
4/0	925	2000	400	1850	370

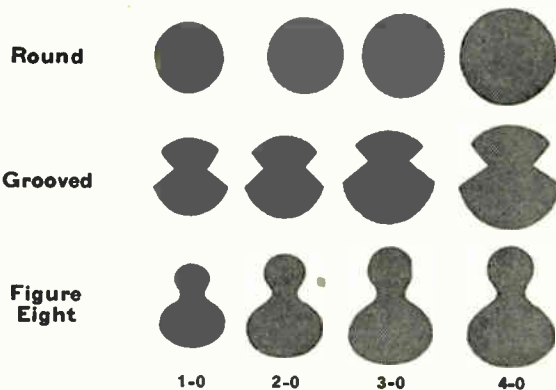
*Approximate weight per bundle.

Stranded—Triple Braid



Size A.W.G. No.	Wt. Lb. per 1000 Feet	STANDARD PACKAGE, FT.		APPROX. NET WT., LB.	
		Reels	Coils	Reels	Coils
8	105	.....	2000	.....	210
6	165	.....	1500	.....	248
5	195	.....	1250	.....	181
4	230	.....	1000	.....	230
3	280	.....	1320	.....	370
2	335	.....	1000	.....	335
1	380	.....	800	.....	304
1/0	510	3500	700	1785	357
2/0	625	3000	600	1875	375
3/0	785	2500	500	1963	393
4/0	960	4000	400	3840	384

Phelps Dodge Trolley Wire



Furnished round, grooved, or in figure 8.

Size A.W.G. No.	Diameter Mils	Ohms per 1000 Feet	Ohms per Mile	Wt. Lb. per 1000 Feet	Wt. Lb. per Mile
1/0	325	.1011	.5340	319.5	1687
2/0	365	.0802	.4235	402.8	2127
3/0	410	.0636	.3359	507.9	2682
4/0	460	.0504	.2663	640.5	3382

Phelps Dodge Rectangular Copper Bus Bar



P-D Rectangular Copper Bus Bars are guaranteed to have a minimum conductivity of 98%. They are manufactured by the extrusion process, instead of being drawn assuring even temper and full straight edges.

P-D bars fully comply with the latest A.S.T.M. specification, but can be manufactured to individual specification when specified.

Size Bar Inches	Cross Section Square Inches	*Carrying Capacity Amperes	Weight Pounds per Foot
1/4x2	.250	250	.962
1/8x2 1/2	.313	313	1.205
1/8x3	.375	375	1.444
1/4x2	.500	500	1.925
1/4x2 1/2	.625	625	2.41
1/4x3	.750	750	2.89
1/4x4	1.000	1000	3.85
3/8x3	1.125	1125	4.33
3/8x4	1.500	1500	5.77

*At current density of 1000 amperes.

Phelps Dodge Seamless Copper Bus Tubing Bulldog Brand



The advantages due to the inherent properties of tubular bus bars for high amperages have been a deciding factor in the increasing use of copper tubes for outdoor busses. Bulldog copper bus bar tubes have a minimum conductivity of 98%, can be bent to meet special field conditions, or flattened for terminal connections.

Uniform in temper, accurately manufactured to size by the extrusion process, Bulldog copper bus tubes lend themselves readily to clamp connectors or internal splices.

Standard Weight Copper Tubing

I.P.S. Inches	O.D. Inches	I.D. Inches	Area C.M.	Carrying Capacity Amperes	Weight Pounds Per Foot
1/2	.840	.625	317,471	317	.95
3/4	1.05	.822	423,524	424	1.31
1	1.315	1.062	633,016	633	1.79
1 1/4	1.66	1.368	851,200	851	2.63
1 1/2	1.90	1.600	1,017,900	1018	3.15
2	2.375	2.062	1,368,136	1368	4.20

Extra Heavy Copper Tubing

1/2	.840	.542	411,834	412	1.33
3/4	1.05	.736	560,804	561	1.75
1	1.315	.951	824,824	825	2.478
1 1/4	1.66	1.272	1,137,616	1138	3.465
1 1/2	1.90	1.494	1,377,964	1178	4.190
2	2.375	1.933	1,904,136	1904	5.733

Phelps Dodge P-M-G Rigid Conduit and EMT Tubing

P-M-G conduit is available in both standard heavy wall rigid conduit and thin-wall electrical metallic tubing. P-M-G metal is a rustless alloy of unusually high tensile strength.

This conduit is recommended for use where severe corrosive conditions exist and is suitable for such installations as chemical plants, railroad terminals, dairy barns, textile finishing and dye plants, also installations in coastal areas or where conduit might be directly subjected to salt spray.

P-M-G conduit is fully approved by Underwriters' Laboratories and fittings of the same alloy are available from many manufacturers. Complete bulletin on request.

General Cable Guardian* Rubber Insulated Building Wire and Cable

Code Grade Type R—600 Volts
(Conforming to all Requirements of Federal Specification J-C-101-b)

Performance Grade Type RP—600 Volts
(Formerly Known as 30%)

Thermax Underwriters' Heat-Resisting Grade Type RH—600 Volts
(Conforming to all Requirements of Federal Specification J-C-106-a)

Moisture-Resisting Grade Type RW—600 Volts
(Approved by Underwriters' Laboratories for Use in Moist Locations as Described in Sections 2304B and 3035 of National Electric Code)

Solid Conductors, Single Braid



Size A.W.G.	No. of Strands	Diameter Individual Strands Inches	Diameter Inches	Insulation Thickness Inches	Overall Diameter Inches	Net Wt. Lb. per 1000 Ft.
14	Solid	.....	.06408	3/64	.19	26
12	Solid	.....	.08081	3/64	.21	35
10	Solid	.....	.1019	3/64	.23	49
8	Solid	.....	.1285	3/64	.28	80
†6	Solid	.....	.1620	3/64	.32	115

Stranded Conductors, Single Braid

14	7	.0242	.0726	3/64	.20	27
12	7	.0305	.0915	3/64	.22	37
10	7	.0385	.116	3/64	.24	52
8	7	.0486	.146	3/64	.30	84

Solid Conductors, Double Braid or Tape and Braid



14	Solid	.....	.06408	3/64	.22	29
12	Solid	.....	.08081	3/64	.24	38
10	Solid	.....	.1019	3/64	.26	54
8	Solid	.....	.1285	3/64	.32	85
†6	Solid	.....	.1620	3/64	.36	120

Stranded Conductors, Double Braid or Tape and Braid

14	7	.0242	.0726	3/64	.23	30
12	7	.0305	.0915	3/64	.25	40
10	7	.0385	.116	3/64	.27	56
8	7	.0486	.146	3/64	.33	90
6	7	.0612	.184	3/64	.38	126
4	7	.0772	.232	3/64	.45	190
3	7	.0867	.260	3/64	.48	230
2	7	.0974	.292	3/64	.51	278
1	19	.0664	.332	5/64	.59	364
1/0	19	.0745	.373	5/64	.63	443
2/0	19	.0837	.418	5/64	.67	540
3/0	19	.0940	.470	5/64	.73	663
4/0	19	.1055	.528	5/64	.78	814

C.M.						
250,000	37	.0822	.575	3/64	.86	962
300,000	37	.0900	.630	3/64	.92	1139
350,000	37	.0973	.681	3/64	.97	1300
400,000	37	.1040	.728	3/64	1.02	1473
500,000	37	.1162	.814	3/64	1.10	1815
600,000	61	.0992	.893	7/64	1.21	2177
700,000	61	.1071	.964	7/64	1.28	2512
750,000	61	.1109	.998	7/64	1.32	2673
800,000	61	.1145	1.031	7/64	1.35	2848
900,000	61	.1215	1.093	7/64	1.41	3194
1,000,000	61	.1280	1.152	7/64	1.47	3530
1,250,000	91	.1172	1.289	8/64	1.64	4400
1,500,000	91	.1284	1.412	8/64	1.76	5240
1,750,000	127	.1174	1.526	8/64	1.88	6060
2,000,000	127	.1255	1.631	8/64	1.98	6890

*Trade-mark.

†Not listed in National Electrical Code.

For current carrying capacity—National Electrical Code—see another page.

General Cable Guardian* Rubber Insulated Building Wire and Cable

Small Diameter Performance Grade Type RPT 600 Volts

Small Diameter Thermax* Heat-Resisting Grade Type RHT—600 Volts



Solid Conductors, Single Braid

Size A.W.G.	Insulation Thickness Inches	Overall Diameter Inches	Net Weight Lb. per 1000 Ft.
14	2	.16	21
12	2	.18	28
10	2	.20	40
†8	3	.25	70

Stranded Conductors, Single Braid

14	2	.16	22
12	2	.18	29
10	2	.20	42
†8	3	.27	72

Solid Conductors, Double Braid

14	2	.19	24
12	2	.21	31
10	2	.23	45
†8	3	.29	75

Stranded Conductors, Double Braid

14	2	.20	25
12	2	.22	33
10	2	.24	47
†8	3	.30	80

*Trade-mark.

†Thermax grade only.

For current carrying capacity—National Electrical Code—see another page.

General Cable Guardian* Synthetic Insulated Building Wire and Cable

Gencaseal* Type SN Small Diameter—600 Volts



Solid Conductors, No Outer Covering

Size A.W.G.	Insulation Thickness Inches	Overall Diameter Inches	Net Weight Lb. per 1000 Ft.
14	2	.130	20
12	2	.150	28
10	2	.170	41
8	3	.230	69

Stranded Conductors, No Outer Covering

8	3	.250	75
6	4	.310	119
4	4	.360	176
2	4	.420	263
1	5	.500	339
1/0	5	.540	416
2/0	5	.580	514
3/0	5	.630	633
4/0	5	.690	787

*Trade-mark.

For current carrying capacity—National Electrical Code—see another page.

General Cable Guardian* Rubber Insulated Fixture Wire

Code Grade Underwriters' Type RF—300 Volts

Solid or Stranded Conductors, Single Braid

Size A.W.G.	Insulation Thickness Inches	Overall Diameter Inches	Net Weight Lb. per 1000 Ft.
‡20	1/64	.09	6
‡20	1/32	.12	10
‡18	1/64	.11	9
‡18	1/32	.13	12
‡16	1/64	.12	12
‡16	1/32	.14	16

*Trade-mark.

‡Does not carry Underwriters' labels.

General Cable Guardian* Rubber Insulated Building Wire and Cable

Code Grade Type RD—600 Volts

(Conforming to all Requirements of Federal Specification J-C-101-b)

Performance Grade Type RPD—600 Volts
(Formerly Known as 30%)

Thermax Underwriters' Heat-Resisting Grade Type RHD—600 Volts

(Conforming to all Requirements of Federal Specification J-C-106-a)

Moisture-Resisting Grade Type RWD—600 Volts

(Approved by Underwriters' Laboratories for Use in Moist Locations as Described in Sections 2304B and 3035 of National Electric Code)



Solid Conductors, Double Braid

Size A.W.G.	No. of Strands	CONDUCTORS		Insulation Thickness Inches	Overall Diameter Inches	Net Wt. Lb. per 1000 Ft.
		Diam. Individual Strands Inches	Diameter Inches			
14	Solid	.....	.06408	3/64	.41x .22	62
12	Solid	.....	.08081	3/64	.45x .24	82
10	Solid	.....	.1019	3/64	.49x .26	114
8	Solid	.....	.1285	3/64	.60x .32	174
†6	Solid	.....	.1620	3/64	.68x .36	285

Stranded Conductors, Double Braid

Size A.W.G.	No. of Strands	CONDUCTORS		Insulation Thickness Inches	Overall Diameter Inches	Net Wt. Lb. per 1000 Ft.
		Diam. Individual Strands Inches	Diameter Inches			
14	7	.0242	.0726	3/64	.43x .23	64
12	7	.0305	.0915	3/64	.47x .25	84
10	7	.0385	.116	3/64	.52x .27	124
8	7	.0486	.146	3/64	.64x .33	186
6	7	.0612	.184	3/64	.72x .38	295

Lead Sheathed Code Grade Type RDL—600 Volts

(Conforming to all Requirements of Federal Specification J-C-101-b)

Lead Sheathed Performance Grade Type RPDL—600 Volts

(Formerly Known as 30%)

Lead Sheathed Thermax *Underwriters' Heat-Resisting Grade Type RHDL—600 Volts

(Conforming to all Requirements of Federal Specification J-C-106-a)



Solid Conductors

Size A.W.G.	No. of Strands	CONDUCTORS		Insulation Thickness Inches	Sheath Thickness Inches	Overall Diameter Inches	Net Wt. Lb. per 1000 Feet
		Diam. Individual Strands In.	Diam. In.				
14	Solid	.....	.06408	3/64	3/64	.44x .25	218
12	Solid	.....	.08081	3/64	3/64	.51x .30	350
10	Solid	.....	.1019	3/64	3/64	.55x .32	403
8	Solid	.....	.1285	3/64	3/64	.66x .38	532
†6	Solid	.....	.1620	3/64	3/64	.77x .45	800
†4	Solid	.....	.2043	3/64	3/64	.95x .51	1003

Stranded Conductors

Size A.W.G.	No. of Strands	CONDUCTORS		Insulation Thickness Inches	Sheath Thickness Inches	Overall Diameter Inches	Net Wt. Lb. per 1000 Feet
		Diam. Individual Strands In.	Diam. In.				
14	7	.0242	.0726	3/64	3/64	.46x .26	228
12	7	.0305	.0915	3/64	3/64	.53x .31	368
10	7	.0385	.116	3/64	3/64	.57x .33	425
8	7	.0486	.146	3/64	3/64	.70x .40	563
6	7	.0612	.184	3/64	3/64	.81x .47	848
4	7	.0772	.232	3/64	3/64	.96x .54	1066
2	7	.0974	.292	3/64	3/64	1.03x .58	1310
1	19	.0664	.332	5/64	5/64	1.19x .67	1860
1/0	19	.0745	.373	5/64	5/64	1.27x .72	2120
2/0	19	.0837	.418	5/64	5/64	1.36x .76	2395
3/0	19	.0940	.470	5/64	5/64	1.47x .81	2730
4/0	19	.1055	.528	5/64	5/64	1.58x .87	3120

*Trade-mark.

†Not listed in National Electrical Code.

For current carrying capacity—National Electrical Code—see another page.

General Cable Guardian* Rubber Insulated Building Wire and Cable

Lead Sheathed Code Grade Type RL—600 Volts

(Conforming to all Requirements of Federal Specification J-C-101-b)

Lead Sheathed Performance Grade Type RPL—600 Volts

(Formerly Known As 30%)

Lead Sheathed Thermax Underwriters' Heat-Resisting Grade Type RHL—600 Volts

(Conforming to all Requirements of Federal Specification J-C-106-a)

Solid Conductors



Size A.W.G.	No. of Strands	CONDUCTORS		Insulation Thickness Inches	Sheath Thickness Inches	Overall Diameter Inches	Net Wt. Lb. per 1000 Feet
		Diam. Individual Strands In.	Diam. In.				
14	Solid	..	.06408	3/64	3/64	.25	135
12	Solid	..	.08081	3/64	3/64	.27	153
10	Solid	..	.1019	3/64	3/64	.32	260
8	Solid	..	.1285	3/64	3/64	.38	320
†6	Solid	..	.1620	3/64	3/64	.45	520
†4	Solid	..	.2043	3/64	3/64	.51	620

Stranded Conductors



Size A.W.G.	No. of Strands	CONDUCTORS		Insulation Thickness Inches	Sheath Thickness Inches	Overall Diameter Inches	Net Wt. Lb. per 1000 Feet
		Diam. Individual Strands In.	Diam. In.				
14	7	.0242	.0726	3/64	3/64	.25	142
12	7	.0305	.0915	3/64	3/64	.27	161
10	7	.0385	.116	3/64	3/64	.32	274
8	7	.0486	.146	3/64	3/64	.38	337
6	7	.0612	.184	3/64	3/64	.47	548
4	7	.0772	.232	3/64	3/64	.52	655
2	7	.0974	.292	3/64	3/64	.58	770
1	19	.0664	.332	5/64	5/64	.64	931
1/0	19	.0745	.373	5/64	5/64	.68	1060
2/0	19	.0837	.418	5/64	5/64	.73	1210
3/0	19	.0940	.470	5/64	5/64	.78	1370
4/0	19	.1055	.528	5/64	5/64	.84	1570

C.M.

250,000	37	.0822	.575	3/64	5/64	.95	2030
300,000	37	.0900	.630	3/64	5/64	1.00	2270
350,000	37	.0973	.681	3/64	5/64	1.06	2490
400,000	37	.1040	.728	3/64	5/64	1.10	2720
500,000	37	.1162	.814	3/64	5/64	1.19	3160
600,000	61	.0992	.893	7/64	5/64	1.33	3980
700,000	61	.1071	.964	7/64	5/64	1.40	4420
750,000	61	.1109	.998	7/64	5/64	1.43	4620
800,000	61	.1145	1.031	7/64	5/64	1.47	4850
900,000	61	.1215	1.093	7/64	5/64	1.53	5265
1,000,000	61	.1280	1.152	7/64	5/64	1.59	5690
1,250,000	91	.1172	1.289	3/64	7/64	1.79	6890
1,500,000	91	.1284	1.412	3/64	7/64	1.91	7875
1,750,000	127	.1174	1.526	3/64	7/64	2.02	8890
2,000,000	127	.1255	1.631	3/64	7/64	2.13	9850

*Trade-mark.

†Not listed in National Electrical Code.

For current carrying capacity—National Electrical Code—see another page.

General Cable Guardian* Rubber Insulated Building Wire and Cable

Lead Sheathed Code Grade Type RML—600 Volts

(Conforming to all Requirements of Federal Specification J-C-101-b)

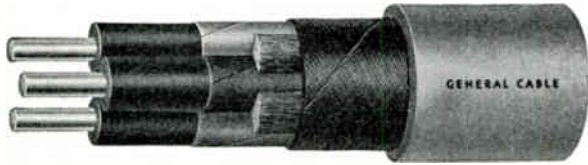
Lead Sheathed Performance Grade Type RPML—600 Volts

(Formerly Known as 30%)

Lead Sheathed Thermax* Underwriters' Heat-Resisting Grade Type RHML—600 Volts

(Conforming to all Requirements of Federal Specification J-C-106-a)

Solid Conductors



Size A.W.G.	No. Strands	CONDUCTORS		Insulation Thickness In.	Sheath Thickness In.	Over-all Diam. In.	Net Wt. per 1000 Feet
		Individual Strands In.	Diam. In.				
14	Solid	..	.06408	3/64	1/4	.57	589
12	Solid	..	.08081	3/64	1/4	.60	655
10	Solid	..	.1019	3/64	1/4	.65	743
8	Solid	..	.1285	3/64	1/4	.77	978
†6	Solid	..	.1620	3/64	5/64	.88	1,378
†4	Solid	..	.2043	3/64	5/64	1.03	1,704

Stranded Conductors



Size A.W.G.	No. Strands	CONDUCTORS		Insulation Thickness In.	Sheath Thickness In.	Over-all Diam. In.	Net Wt. per 1000 Feet
		Individual Strands In.	Diam. In.				
14	7	.0242	.0726	3/64	1/4	.58	611
12	7	.0305	.0915	3/64	1/4	.63	685
10	7	.0385	.116	3/64	1/4	.68	780
8	7	.0486	.146	3/64	1/4	.81	1,030
6	7	.0612	.184	3/64	5/64	.93	1,456
4	7	.0772	.232	3/64	5/64	1.09	1,806
2	7	.0974	.292	3/64	5/64	1.16	2,240
1	19	.0664	.332	5/64	3/8	1.33	2,980
1/0	19	.0745	.373	5/64	3/8	1.42	3,340
2/0	19	.0837	.418	5/64	3/8	1.52	3,830
3/0	19	.0940	.470	5/64	3/8	1.63	4,370
4/0	19	.1055	.528	5/64	7/64	1.79	5,430

C.M.							
250,000	37	.0822	.575	3/64	7/64	1.96	6,320
300,000	37	.0900	.630	3/64	7/64	2.08	7,100
350,000	37	.0973	.681	3/64	7/64	2.19	7,830
400,000	37	.1040	.728	3/64	7/64	2.32	9,130
500,000	37	.1162	.814	3/64	7/64	2.50	10,550

*Trade-mark.

†Not listed in National Electrical Code.

Either tape or braid will be furnished on individual conductors.

For current carrying capacity—National Electrical Code—see another page.

Allowable Current-Carrying Capacities of Conductors

Based on Room Temperature of 30°C. 86°F.

Size A.W.G.	In Conduit				In Air		
	3-Conductor Cable or Three Single Conductors				Single Conductor		
	CAPACITY, AMPERES						
	Rubber Type RW Type R	Rubber Type RPT Synthetic Type SN	Rubber Type RHT Type RH	Rubber Type R	Rubber Type RP	Rubber Type RHT	
14	15	18	22	20	24	29	
12	20	23	27	26	31	37	
10	25	31	37	35	42	50	
8	35	41	49	48	58	69	
6	45	54	65	65	78	94	
5	52	63	75	76	92	110	
4	60	72	86	87	105	125	
3	69	83	99	101	122	146	
2	80	96	115	118	142	170	
1	91	110	131	136	164	196	
0	105	127	151	160	193	230	
00	120	145	173	185	223	267	
000	138	166	199	215	259	310	
0000	160	193	230	248	298	358	
C.M.							
250,000	177	213	255	280	338	403	
300,000	198	238	285	310	373	446	
350,000	216	260	311	350	421	504	
400,000	233	281	336	380	457	547	
500,000	265	319	382	430	517	620	
600,000	293	353	422	480	577	691	
700,000	320	385	461	525	632	756	
750,000	330	398	475	545	655	785	
800,000	340	410	490	565	680	815	
900,000	360	434	519	605	728	872	
1,000,000	377	455	543	650	782	936	
1,250,000	409	493	589	740	890	1066	
1,500,000	434	522	625	815	980	1174	
1,750,000	451	544	650	890	1070	1282	
2,000,000	463	558	666	960	1155	1383	

Correction Factor for Room Temperatures Over 30°C.

Degrees C.	Degrees F.						
	104	113	122	131	140	158	167
40	.71	.82	.88	.71	.82	.88	.88
45	.50	.71	.82	.50	.71	.82	.82
50	.00	.58	.75	.00	.58	.75	.75
55	...	.41	.67	...	.41	.67	.67
60	...	.00	.58	...	.00	.58	.58
70	...	...	.35	...	...	.35	.35
75	...	...	.00	...	...	.00	.00
80	...	...	...	...	...	...	...
90	...	...	...	...	...	...	...
100	212	...	...	...	...	...	...
120	248	...	...	...	...	...	...
140	284	...	...	...	...	...	...

Bare Conductors. If bare conductors are used in conduit with insulated conductors, their allowable current-carrying capacity shall be limited to that permitted for the insulated conductor with which they are used.

Neutral Conductor. A neutral conductor which carries only the unbalanced current from other conductors, as in the case of normally balanced circuits of three or more conductors, shall not be counted in determining the current-carrying capacities of cable in conduit.

In a 3-wire circuit from a 4-wire, 3-phase system, a common conductor carries approximately the same current as the other conductors and is not, therefore, considered as a neutral conductor.

Application of Table. For open wiring on insulators and for concealed knob-and-tube work, the allowable current-carrying capacities of cable in air shall be used. For all other recognized wiring methods, the allowable current-carrying capacities of cable in conduit shall be used, unless otherwise provided in this code.

More Than Three Conductors in a Conduit. Table above gives the allowable current-carrying capacity for not more than three conductors in a conduit or cable. If the number of conductors in a conduit or cable is from 4 to 6, the allowable current-carrying capacity of each conductor shall be reduced to 80 per cent of the values of cable in conduit. If the number of conductors is from 7 to 9, the allowable current-carrying capacity of each conductor shall be reduced to 70 per cent of the values of cable in conduit.

Use of Conductors with Higher Operating Temperatures. If the room temperature is within 10 degrees of the maximum allowable operating temperature of the insulation, it is desirable to use an insulation with a higher maximum allowable operating temperature; although insulation can be used in a room temperature approaching its maximum allowable operating temperature limit if the current is reduced in accordance with the table of correction factors for different room temperatures.

Voltage Drop. The allowable current-carrying capacities in the tables are based on temperature alone and do not take voltage drop into consideration.

General Cable Romex* Non-metallic Sheathed Cable

600 Volts



Inspected and labeled by Underwriters' Laboratories. Applications. New and old house wiring for all circuits beyond entrance; wiring boats and trailers; for extensions to new outlets; for circuits for radios and refrigerators.

Size A. W. G.	No Conductors	Type of Conductors	Shape of Cable	Overall Diam. In.	Feet per Coil	NET WT. LB. PER 1000 FEET	
						With Ground Wire	Without Ground Wire
14	2	Solid	Oval	.590 x .330	250	108	104
14	3	Solid	Round	.630	200	175	165
14	4	Solid	Round	.690	200	352	342
12	2	Solid	Oval	.620 x .350	200	135	125
12	3	Solid	Round	.660	200	210	200
12	4	Solid	Round	.730	200	404	394
10	2	Solid	Oval	.670 x .370	200	175	155
10	3	Solid	Round	.720	200	270	250
10	4	Solid	Round	.790	200	497	477
8	2	7 Strand	Oval	.920 x .510	125	260	240
8	3	7 Strand	Round	.990	125	435	400
8	4	7 Strand	Round	1.100	125	922	888
6	2	7 Strand	Oval	1.010 x .560	125	410	368
6	3	7 Strand	Round	1.090	125	630	576
6	4	7 Strand	Round	1.200	125	1136	1082
4	2	7 Strand	Oval	1.110 x .610	125	560	488
4	3	7 Strand	Round	1.190	125	860	776
4	4	7 Strand	Round	1.320	125	1550	1470

General Cable Service Drop Cable Type SD—150 Volts



For use in continuous overhead connection between pole and meter, switch or service equipment. Designed for circuits not exceeding 150 volts to ground. Where used as service entrance cable, cable must be installed in conduit.

2-Conductor (Concentric)

Size A. W. G. No.	Type	Insulation Thickness In.	UNINSULATED (NEUTRAL) (Coverage)		Overall Diam. In.	Std. Pkg. Feet per Reel	Ship. Wt. per 1000 Feet	
			Size A. W. G.	No. Strands				
12	1	Solid	3/64	12	85	310	1000	110
12	1	Stranded	3/64	12	85	320	1000	110
10	1	Solid	3/64	10	85	330	1000	170
10	1	Stranded	3/64	10	85	350	1000	170
8	1	Stranded	4/64	10	85	390	1000	230
8	1	Solid	4/64	8	85	400	1000	240
8	1	Stranded	4/64	8	85	420	1000	240
†6	1	Solid	4/64	8	85	440	1000	300
6	1	Stranded	4/64	8	85	460	1000	300
†6	1	Solid	4/64	6	85	460	1000	310
6	1	Stranded	4/64	6	85	480	1000	310
4	1	Stranded	4/64	6	85	530	1000	430
4	1	Stranded	4/64	4	85	540	1000	440
2	1	Stranded	4/64	4	85	610	1000	600
2	1	Stranded	4/64	2	85	630	1000	610

3-Conductor (Concentric)

12	2	Solid	3/64	12	65	.310 x	500	1000	190
12	2	Stranded	3/64	12	65	.350 x	520	1000	190
10	2	Solid	3/64	12	50	.360 x	540	1000	220
10	2	Solid	3/64	10	65	.370 x	540	1000	230
10	2	Stranded	3/64	10	65	.380 x	570	1000	230
8	2	Stranded	4/64	10	50	.460 x	690	1000	320
8	2	Solid	4/64	8	65	.430 x	650	1000	340
8	2	Stranded	4/64	8	65	.450 x	690	1000	340
†6	2	Solid	4/64	8	50	.480 x	740	1000	420
6	2	Stranded	4/64	8	50	.500 x	790	1000	420
†6	2	Solid	4/64	6	65	.490 x	750	1000	460
6	2	Stranded	4/64	6	65	.510 x	800	1000	460
4	2	Stranded	4/64	6	50	.570 x	890	1000	580
4	2	Stranded	4/64	4	65	.580 x	910	1000	640
2	2	Stranded	4/64	4	50	.650 x	1.02	1000	860
2	2	Stranded	4/64	2	65	.660 x	1.04	1000	960

†Not listed in National Electrical Code.

Percentage of the surface of the underlying core which is covered by the concentric uninsulated neutral conductor, subject to a tolerance of plus or minus 5%.

Peerless* Type SD—150 Volts



A cable of concentric unisulated neutral construction for use in continuous overhead connection between pole and meter, switch or service equipment. Designed for circuits not exceeding 150 volts to ground. Where used as service entrance cable, cable must be installed in conduit.

Has a weather-resisting outer covering of asphalt saturated Peerless felt in which the concentric unisulated neutral conductor is embedded and gives added mechanical protection to the cable.

2-Conductor (Concentric)

Size A. W. G. No.	Type	Insulation Thickness In.	UNINSULATED (NEUTRAL)		Overall Diam. In.	Std. Pkg. Feet per Reel	Ship. Wt. per 1000 Feet	
			Size A. W. G.	No. Strands				
8	1	Solid	4/64	10	12	.40	1000	220
8	1	Solid	4/64	8	12	.41	1000	240
6	1	Stranded	4/64	8	12	.47	1000	290
6	1	Stranded	4/64	6	12	.48	1000	310

3-Conductor (Concentric)

8	2	Solid	4/64	10	12	.44 x	65	1000	330
8	2	Solid	4/64	8	12	.45 x	66	1000	350
6	2	Stranded	4/64	8	12	.51 x	.77	1000	450
6	2	Stranded	4/64	6	12	.52 x	.78	1000	470

*Trade-mark.

Approved construction requires tape over rubber insulation. Other conductor sizes and multiples upon application.

General Cable Enterite* Service Drop Cable 150-600 Volts

2-Conductor (Parallel)



Designed for aerial installation between pole and building.

Size A. W. G. No.	Type	Insulation Thickness In.	UNINSULATED (NEUTRAL) Size A. W. G.	Overall Diam. In.	Std. Pkg. Feet per Reel	Ship. Wt. per 1000 Feet
12	2	Stranded	3/64	.301 x .527	1000	172
10	2	Solid	3/64	.311 x .547	1000	200
10	2	Stranded	3/64	.325 x .575	1000	210
8	2	Solid	4/64	.369 x .663	1000	280
8	2	Stranded	4/64	.386 x .697	1000	290
†6	2	Solid	4/64	.402 x .729	1000	364
6	2	Stranded	4/64	.424 x .773	1000	376
4	2	Stranded	4/64	.472 x .869	1000	499
2	2	Stranded	4/64	.532 x .989	1000	708

3-Conductor (Twisted)



12	2	Solid	3/64	12	.545	1000	217
12	2	Stranded	3/64	12	.570	1000	224
10	2	Solid	3/64	10	.585	1000	274
10	2	Stranded	3/64	10	.610	1000	284
8	2	Solid	4/64	10	.700	1000	384
8	2	Stranded	4/64	10	.735	1000	399
8	2	Solid	4/64	8	.705	1000	404
8	2	Stranded	4/64	8	.745	1000	419
†6	2	Solid	4/64	8	.770	1000	640
6	2	Stranded	4/64	8	.815	1000	655
†6	2	Solid	4/64	6	.780	1000	670
6	2	Stranded	4/64	6	.825	1000	687
4	2	Stranded	4/64	6	.915	1000	825
4	2	Stranded	4/64	4	.930	1000	870
2	2	Stranded	4/64	2	1.090	1000	1195

*Trade-mark.

†Not listed in National Electrical Code.

General Cable Service Entrance Cable Type SE (Style U)—150 Volts



This cable does not require conduit protection where extending along exterior or entering buildings.

2-Conductor (Concentric)

Size A.W.G. No.	INSULATED CONDUCTORS		Insulation Thick- ness In.	UNINSULATED NEUTRAL		Over- all Diam. In.	Std. Pkg. Feet per Coil	Ship. Wt. Lb. per 1000 Feet
	Type	Size		Cover- age Per Cent	Size				Per Cent
12	1	Solid	3/64	12	85	.36	250	90
12	1	Stranded	3/64	12	85	.37	250	90
10	1	Solid	3/64	10	85	.38	250	110
10	1	Stranded	3/64	10	85	.40	250	110
8	1	Stranded	3/64	10	85	.47	250	180
8	1	Solid	3/64	8	85	.45	250	200
8	1	Stranded	3/64	8	85	.47	250	200
†6	1	Solid	3/64	8	85	.49	250	240
6	1	Stranded	3/64	8	85	.51	250	240
†6	1	Solid	3/64	6	85	.51	250	270
6	1	Stranded	3/64	6	85	.53	250	270
4	1	Stranded	3/64	6	85	.58	200	350
4	1	Stranded	3/64	4	85	.60	200	400
2	1	Stranded	3/64	4	85	.66	150	520
2	1	Stranded	3/64	2	85	.68	150	590

3-Conductor (Concentric)

12	2	Solid	3/64	12	65	.39x	.52	250	150
12	2	Stranded	3/64	12	65	.40x	.55	250	150
10	2	Solid	3/64	12	50	.42x	.58	250	200
10	2	Solid	3/64	10	65	.43x	.58	250	210
10	2	Stranded	3/64	10	65	.44x	.61	250	210
8	2	Stranded	3/64	10	50	.49x	.71	250	280
8	2	Solid	3/64	8	65	.49x	.70	250	300
8	2	Stranded	3/64	8	65	.51x	.74	250	300
†6	2	Solid	3/64	8	50	.53x	.77	200	380
6	2	Stranded	3/64	8	50	.55x	.82	200	380
†6	2	Solid	3/64	6	65	.54x	.79	150	420
6	2	Stranded	3/64	6	65	.56x	.84	150	420
4	2	Stranded	3/64	6	50	.61x	.93	150	550
4	2	Stranded	3/64	4	65	.62x	.94	150	610
2	2	Stranded	3/64	4	50	.68x1	.06	100	800
2	2	Stranded	3/64	2	65	.70x1	.08	100	900

Type SE (Style A)—150 Volts



Has light steel armor over concentric neutral.

2-Conductor (Concentric)

12	1	Solid	3/64	12	85	.39	250	120
12	1	Stranded	3/64	12	85	.40	250	120
10	1	Solid	3/64	10	85	.42	250	130
10	1	Stranded	3/64	10	85	.43	250	130
8	1	Stranded	3/64	10	85	.50	250	220
8	1	Solid	3/64	8	85	.47	250	240
8	1	Stranded	3/64	8	85	.50	250	240
†6	1	Solid	3/64	8	85	.52	250	290
6	1	Stranded	3/64	8	85	.54	250	290
†6	1	Solid	3/64	6	85	.54	250	320
6	1	Stranded	3/64	6	85	.56	250	320
4	1	Stranded	3/64	6	85	.61	200	400
4	1	Stranded	3/64	4	85	.63	200	450
2	1	Stranded	3/64	4	85	.69	150	570
2	1	Stranded	3/64	2	85	.71	150	650

3-Conductor (Concentric)

12	2	Solid	3/64	12	65	.42x	.54	250	200
12	2	Stranded	3/64	12	65	.44x	.57	250	200
10	2	Solid	3/64	12	50	.44x	.57	250	230
10	2	Solid	3/64	10	65	.46x	.60	250	250
10	2	Stranded	3/64	10	65	.47x	.62	250	250
8	2	Stranded	3/64	10	50	.53x	.74	250	340
8	2	Solid	3/64	8	65	.52x	.71	250	360
8	2	Stranded	3/64	8	65	.54x	.75	250	360
†6	2	Solid	3/64	8	50	.56x	.78	200	450
6	2	Stranded	3/64	8	50	.58x	.84	200	450
†6	2	Solid	3/64	6	65	.57x	.81	150	490
6	2	Stranded	3/64	6	65	.59x	.85	150	490
4	2	Stranded	3/64	6	50	.64x	.95	150	630
4	2	Stranded	3/64	4	65	.65x	.96	150	690
2	2	Stranded	3/64	4	50	.71x1	.08	100	890
2	2	Stranded	3/64	2	65	.73x1	.10	100	990

†Not listed in National Electrical Code.

‡Percentage of the surface of the underlying core which is covered by the concentric uninsulated neutral conductor, subject to a tolerance of plus or minus 5%.

General Cable Service Entrance Cable Type USE (Style TY)—150-600 Volts



Non-metallic armored Trenchlay* construction. Installed directly in the earth from pole to meter, switch or service equipment. Uninsulated neutral conductors designed for circuits not exceeding 150 volts to ground. With all conductors insulated for circuits not exceeding 600 volts to ground.

2-Conductor (Concentric)

Size A.W.G. No.	INSULATED CONDUCTORS		Insulation Thick- ness In.	UNINSULATED NEUTRAL Con- struction	Over- all Diam. In.	Std. Pkg. Feet per Reel	Ship. Wt. Lb. per 1000 Feet
	Type	Size					
8	1	Solid	1/64	23/#21	.575	2000	407
†6	1	Solid	1/64	23/#19	.624	1000	456
6	1	Stranded	1/64	23/#19	.646	1000	468
†4	1	Solid	1/64	23/#17	.684	1000	579
4	1	Stranded	1/64	23/#17	.712	1000	601
2	1	Stranded	1/64	23/#15	.796	1000	985
1	1	Stranded	1/64	23/#14	.881	1000	1151

2-Conductor (Parallel)

14	2	Solid	3/64	.....	.721	1000	268
12	2	Solid	3/64	.....	.755	1000	297
10	2	Solid	3/64	.....	.797	1000	475
8	2	Solid	3/64	.....	.912	1000	546
6	2	Stranded	3/64	.....	1.023	1000	849
4	2	Stranded	3/64	.....	1.119	1000	987
2	2	Stranded	3/64	.....	1.239	1000	1203
1	2	Stranded	3/64	.....	1.444	1000	1606
1/0	2	Stranded	3/64	.....	1.530	1000	1774
2/0	2	Stranded	3/64	.....	1.620	1000	1993
3/0	2	Stranded	3/64	.....	1.720	1000	2250
4/0	2	Stranded	3/64	.....	1.840	1000	2655

3-Conductor (Twisted)

14	3	Solid	3/64	.....	.752	1000	353
12	3	Solid	3/64	.....	.788	1000	533
10	3	Solid	3/64	.....	.834	1000	587
8	3	Solid	3/64	.....	.957	1000	670
6	3	Stranded	3/64	.....	1.077	1000	1056
4	3	Stranded	3/64	.....	1.180	1000	1259
2	3	Stranded	3/64	.....	1.310	1000	1559
1	3	Stranded	3/64	.....	1.526	1000	2138
1/0	3	Stranded	3/64	.....	1.618	1000	2393
2/0	3	Stranded	3/64	.....	1.715	1000	2711
3/0	3	Stranded	3/64	.....	1.823	1000	3113
4/0	3	Stranded	3/64	.....	1.952	1000	3591

Type USE (Style SS)—150-600 Volts



A non-metallic sheathed rubber belted assembly. Installed directly in earth from pole to meter, switch or service equipment.

Single Conductor

Size A.W.G. No.	INSULATED CONDUCTORS		Insulation Thick- ness In.	Jacket Thick- ness In.	Over- all Diam. In.	Std. Pkg. Feet per Reel	Ship. Wt. Lb. per 1000 Feet
	Type	Size					
14	1	Solid	1/64	**	.252	1000	50
12	1	Solid	1/64	**	.269	1000	60
10	1	Solid	1/64	**	.290	1000	80
8	1	Solid	1/64	**	.316	1000	95
†6	1	Solid	1/64	**	.350	1000	160
6	1	Stranded	1/64	**	.372	1000	170
4	1	Stranded	1/64	**	.420	1000	240
2	1	Stranded	1/64	**	.480	1000	350

2-Conductor (Twisted)

14	2	Solid	3/64	3/64	.568	1000	190
12	2	Solid	3/64	3/64	.634	1000	250
10	2	Solid	3/64	3/64	.676	1000	300
8	2	Solid	3/64	3/64	.790	1000	420
6	2	Stranded	3/64	3/64	.933	1000	610
4	2	Stranded	3/64	3/64	1.029	1000	800
2	2	Stranded	3/64	3/64	1.149	1000	1090

3-Conductor (Twisted)

14	3	Solid	3/64	3/64	.629	1000	250
12	3	Solid	3/64	3/64	.665	1000	300
10	3	Solid	3/64	3/64	.710	1000	370
8	3	Solid	3/64	3/64	.833	1000	530
6	3	Stranded	3/64	3/64	.984	1000	780
4	3	Stranded	3/64	3/64	1.087	1000	1040
2	3	Stranded	3/64	3/64	1.216	1000	1440

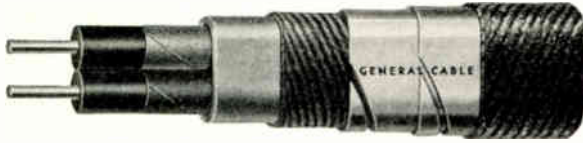
*Trade-mark. †Not listed in National Electrical Code.

**Can be furnished with one conductor uninsulated.

**Jacket and insulation are integral; total thickness is given under insulation.

General Cable Parkway Steel Armored Cable

2-Conductor—0-15,000 Volts



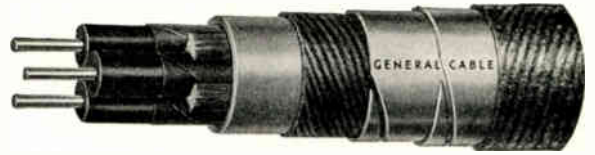
Twin Flat Construction, Double Flat Steel Tape Armor



Round Construction, Interlocking Steel Tape Armor

General Cable Parkway Steel Armored Cable

3-Conductor—0-15,000 Volts



Double Flat Steel Tape Armor



Interlocking Steel Tape Armor

Rated Voltage, 0-600, Phase to Phase (Grounded or Ungrounded)

Size A.W.G.	CONDUCTORS (SOLID OR CONCENTRIC) STRANDED	Type	Insulation Thick- ness In.	Lead Sheath Thick- ness In.	TWIN FLAT CONSTRUCTION		ROUND CONSTRUCTION	
					Over- all Diam. In.	Net Wt. Lb. per 1000 Ft.	Over- all Diam. In.	Net Wt. Lb. per 1000 Ft.
14	Solid		3/64	3/64	.66x .85	569	.93	708
12	Solid		3/64	3/64	.67x .88	625	.96	770
10	Solid		3/64	3/64	.73x .95	835	1.03	1033
8	Solid		3/64	3/64	.78x1 .07	1053	1.15	1295
6	Solid		3/64	3/64	.82x1 .13	1193	1.21	1495
6	Stranded		5/64	3/64	.84x1 .18	1276	1.26	1580
4	Stranded		3/64	5/64	.92x1 .31	1718	1.39	2067
2	Stranded		3/64	3/64	1.04x1 .49	2265	1.51	2588
1	Stranded		5/64	5/64	1.11x1 .63	2672	1.65	3050
1/0	Stranded		5/64	6/64	1.18x1 .74	3245	1.83	3865
2/0	Stranded		5/64	6/64	1.23x1 .83	3605	1.92	4300
3/0	Stranded		5/64	6/64	1.28x1 .93	4036	2.02	4830
4/0	Stranded		5/64	6/64	1.34x2 .05	4550	2.14	5455

Rated Voltage, 2001-3000, Phase to Phase (Grounded or Ungrounded)

10	Solid		7/64	5/64	.88x1 .23	1428	1.31	1765
8	Solid		7/64	5/64	.91x1 .28	1550	1.36	1915
6	Solid		5/64	5/64	1.03x1 .48	2035	1.50	2318
6	Stranded		5/64	5/64	1.06x1 .52	2144	1.54	2422
4	Stranded		5/64	5/64	1.10x1 .62	2437	1.64	2707
2	Stranded		5/64	6/64	1.19x1 .77	3131	1.87	3730
1	Stranded		5/64	6/64	1.23x1 .85	3412	1.94	4070
1/0	Stranded		5/64	6/64	1.28x1 .93	3726	2.02	4464
2/0	Stranded		5/64	6/64	1.32x2 .02	4083	2.11	4897
3/0	Stranded		5/64	6/64	1.37x2 .12	4532	2.21	5433
4/0	Stranded		5/64	7/64	1.46x2 .27	5456	2.36	6545

Rated Voltage, 4001-5000, Phase to Phase (Grounded or Ungrounded)

8	Solid		10/64	5/64	1.06x1 .53	2120	1.55	2405
6	Solid		10/64	5/64	1.10x1 .60	2330	1.62	2642
6	Stranded		10/64	6/64	1.15x1 .67	2708	1.76	3223
4	Stranded		10/64	6/64	1.20x1 .77	3018	1.86	3536
2	Stranded		10/64	6/64	1.26x1 .88	3445	1.98	4120
1	Stranded		10/64	6/64	1.30x1 .97	3728	2.06	4460
1/0	Stranded		10/64	6/64	1.34x2 .05	4047	2.14	4860
2/0	Stranded		10/64	7/64	1.42x2 .18	4787	2.27	5756
3/0	Stranded		10/64	7/64	1.44x2 .28	5280	2.37	6318
4/0	Stranded		10/64	7/64	1.53x2 .40	5830	2.49	7012

Construction data for cables of other sizes, types, and voltage ratings will be supplied on request.

0-600 Volts (Grounded or Ungrounded)

Size A.W.G.	CONDUCTORS (SOLID OR CONCENTRIC) STRANDED	Type	Insulation Thick- ness In.	Lead Sheath Thick- ness In.	DOUBLE FLAT STEEL TAPE ARMOR		INTERLOCKING STEEL TAPE ARMOR	
					Over- all Diam. In.	Net Wt. Lb. per 1000 Ft.	Over- all Diam. In.	Net Wt. Lb. per 1000 Ft.
14	Solid		3/64	1/64	.93	1015	1.01	973
12	Solid		3/64	1/64	.97	1112	1.05	1063
10	Solid		3/64	1/64	1.01	1226	1.09	1191
8	Solid		3/64	1/64	1.14	1542	1.22	1508
6	Solid		3/64	1/64	1.24	2015	1.32	1977
6	Stranded		5/64	1/64	1.29	2127	1.37	2103
4	Stranded		3/64	3/64	1.46	2800	1.47	2503
2	Stranded		3/64	5/64	1.58	3370	1.60	3050
1	Stranded		5/64	5/64	1.77	4290	1.86	4095
1/0	Stranded		5/64	5/64	1.86	4760	1.95	4546
2/0	Stranded		5/64	6/64	1.95	5300	2.04	5063
3/0	Stranded		5/64	6/64	2.06	5980	2.15	5717
4/0	Stranded		5/64	7/64	2.22	7200	2.31	6942
	C.M.							
250,000	Stranded		6/64	7/64	2.39	8150	2.48	7783
350,000	Stranded		6/64	7/64	2.62	9860	2.71	9538
500,000	Stranded		6/64	8/64	2.93	12870	3.02	12515

2001-3000 Volts (Grounded or Ungrounded)

10	Solid		7/64	5/64	1.32	2082	1.40	2068
8	Solid		7/64	5/64	1.37	2273	1.45	2268
6	Solid		5/64	5/64	1.57	2991	1.59	2708
6	Stranded		5/64	5/64	1.62	3171	1.64	2846
4	Stranded		5/64	6/64	1.75	3950	1.84	3759
2	Stranded		5/64	6/64	1.88	4490	1.97	4382
1	Stranded		5/64	6/64	1.97	4990	2.06	4771
1/0	Stranded		5/64	6/64	2.06	5470	2.15	5255
2/0	Stranded		5/64	7/64	2.18	6470	2.28	6223
3/0	Stranded		5/64	7/64	2.30	7190	2.39	6948
4/0	Stranded		5/64	7/64	2.42	8020	2.51	7749
	C.M.							
250,000	Stranded		9/64	7/64	2.59	8990	2.68	8696
350,000	Stranded		9/64	8/64	2.85	11390	2.94	11060
500,000	Stranded		9/64	8/64	3.13	13880	3.22	13515

4001-5000 Volts (Grounded or Ungrounded)

8	Solid		10/64	5/64	1.63	3132	1.65	2906
6	Solid		10/64	6/64	1.74	3745	1.83	3580
6	Stranded		10/64	6/64	1.78	3935	1.87	3736
4	Stranded		10/64	6/64	1.89	4410	1.98	4201
2	Stranded		10/64	6/64	2.02	5050	2.11	4816
1	Stranded		10/64	6/64	2.10	5470	2.19	5222
1/0	Stranded		10/64	7/64	2.22	6430	2.31	6185
2/0	Stranded		10/64	7/64	2.32	7020	2.41	6756
3/0	Stranded		10/64	7/64	2.43	7740	2.52	7473
4/0	Stranded		10/64	7/64	2.56	8580	2.65	8285
	C.M.							
250,000	Stranded		11/64	8/64	2.76	10190	2.85	9891
350,000	Stranded		11/64	8/64	2.98	12050	3.07	11705
500,000	Stranded		11/64	8/64	3.27	14550	3.36	14165

Construction data for cables of other sizes, types, and voltage ratings will be supplied on request.

General Cable Trenchlay* Non-metallic Underground Cable

Power Type—600 Volts



Single Conductor

Size A.W.G.	No. Strands	Insulation Thickness Inches	Overall Diameter Inches	Net Wt. Lb. per 1000 Feet
14	Solid	3/64	.523	118
12	Solid	3/64	.540	133
10	Solid	3/64	.561	153
8	Solid	3/64	.618	195
6	7	1/64	.674	253
4	7	1/64	.722	346
2	7	1/64	.782	448
1	19	5/64	.853	545
1/0	19	5/64	.896	635
2/0	19	5/64	.941	741
3/0	19	5/64	.991	878
4/0	19	5/64	1.051	1051
C.M.				
250,000	37	9/64	1.128	1227
300,000	37	9/64	1.184	1408
350,000	37	9/64	1.234	1588
400,000	37	9/64	1.281	1766
450,000	37	9/64	1.388	2025
500,000	37	9/64	1.429	2198
600,000	61	7/64	1.540	2595
750,000	61	7/64	1.645	3120
900,000	61	7/64	1.740	3636
1,000,000	61	7/64	1.799	3975
1,250,000	91	5/64	1.967	4894
1,500,000	91	5/64	2.090	5788
2,000,000	127	5/64	2.309	7487

2-Conductor—Twin Flat Construction

14	Solid	3/64	.721	188
12	Solid	3/64	.755	217
10	Solid	3/64	.797	255
8	Solid	3/64	.912	336
6	7	1/64	1.023	469
4	7	1/64	1.119	607
2	7	1/64	1.239	823
1	19	5/64	1.444	1006
1/0	19	5/64	1.530	1174
2/0	19	5/64	1.620	1393
3/0	19	5/64	1.720	1650
4/0	19	5/64	1.840	2055

3-Conductor

14	Solid	3/64	.752	273
12	Solid	3/64	.788	313
10	Solid	3/64	.834	367
8	Solid	3/64	.957	467
6	7	1/64	1.077	676
4	7	1/64	1.180	879
2	7	1/64	1.310	1179
1	19	5/64	1.526	1538
1/0	19	5/64	1.618	1793
2/0	19	5/64	1.715	2111
3/0	19	5/64	1.823	2513
4/0	19	5/64	1.952	2991
C.M.				
250,000	37	9/64	2.118	3565
300,000	37	9/64	2.239	4112
350,000	37	9/64	2.347	4654
400,000	37	9/64	2.448	5199
450,000	37	9/64	2.543	5738
500,000	37	9/64	2.631	6401
600,000	61	7/64	2.870	7593
750,000	61	7/64	3.096	9168

*Trade-mark.

General Cable Trenchlay* Non-metallic Underground Cable

Concentric Type, 2-Conductor—0-12,000 Volts



Rated Voltage Phase to Phase	Maximum Voltage Phase to Ground	INSULATED CONDUCTOR— Size A.W.G.	No. Strands	Insula- tion Thick. In.	UNINSU- LATED COND. Con- struction	Over- all Diam. In.	Net Wt. Lb. per 1000 Feet
0-600	††350	8	Solid	3/64	23/#21	.575	259
		6	Solid	3/64	23/#19	.624	342
		6	7	3/64	23/#19	.646	354
		4	Solid	3/64	23/#17	.684	465
		4	7	3/64	23/#17	.712	487
		2	7	3/64	23/#15	.796	690
		1	19	5/64	23/#14	.881	856
2001-3000	1700	8	Solid	7/64	24/#21	.677	327
		6	Solid	9/64	24/#19	.757	436
		6	7	9/64	24/#19	.779	453
		4	Solid	9/64	24/#17	.818	572
		4	7	9/64	24/#17	.846	592
		2	7	9/64	24/#15	.929	810
		1	19	9/64	24/#14	.983	954
4001-5000	2900	8	Solid	10/64	24/#20	.778	411
		6	Solid	10/64	24/#19	.819	483
		6	7	10/64	24/#19	.841	500
		4	Solid	10/64	24/#17	.880	625
		4	7	10/64	24/#17	.908	647
		2	7	10/64	24/#15	.992	863
		1	19	10/64	24/#14	1.046	1013
7001-8000	4600	8	Solid	12/64	24/#19	.848	480
		6	Solid	12/64	24/#18	.891	564
		6	7	12/64	24/#18	.913	584
		4	Solid	12/64	24/#17	.943	679
		4	7	12/64	24/#17	.971	703
		2	7	12/64	24/#15	1.054	922
		1	19	12/64	24/#14	1.108	1069
11001-12000	7000	8	Solid	16/64	24/#18	.982	632
		6	Solid	16/64	24/#17	1.026	718
		6	7	16/64	24/#17	1.048	743
		4	Solid	16/64	24/#16	1.079	839
		4	7	16/64	24/#16	1.107	867
		2	7	16/64	24/#15	1.179	1055
		1	19	16/64	24/#14	1.296	1262

*Trade-mark.

††† used as a service entrance cable within the jurisdiction of the National Board of Fire Underwriters the maximum voltage to ground is 150 volts.

General Cable Ruralay* Non-metallic Underground Cable

2001-8000 Volts



For underground installation in rural areas where the distribution problem is characterized by long cable runs, scattered service connections, and relatively few customers per mile. Especially adaptable for installation by the use of a cable plow. No additional protection of cable is required except at highway crossings and points of unusual mechanical hazard. Under dirt highways creosoted wood planking affords adequate protection.

Rated Voltage Phase to Phase	Phase to Ground Voltage	INSULATED CONDUCTOR— Size A.W.G.	Con- struction	Insula- tion Thick. In.	Over- all Diam. In.	Net Wt. Lb. per 1000 Ft.
3001-4000	2300	8	Solid	9/64	.680	285
		6	Solid	9/64	.735	365
		4	7/.0772"	9/64	.830	495
5001-6000	3500	8	Solid	10/64	.710	310
		6	Solid	10/64	.765	395
		4	7/.0772"	10/64	.860	530
7001-8000	4600	8	Solid	12/64	.775	360
		6	Solid	12/64	.825	440
		4	7/.0772"	12/64	.920	580

*Trade-mark.

General Cable Supersheath* Non-metallic Underground Cable

0-15,000 Volts

Supersheath cable is rubber-insulated non-metallic cable of the rubber jacketed type. Intended primarily for non-portable uses, such as in underground ducts or direct installation in the ground.

The rubber jacket of this cable has high resistance to deterioration from moisture, earth acids, alkalies, or other earth chemicals. In cinder fills, railway ballast, and other locations having a distinctly acid character, Supersheath cable is performing exceptionally good service. Where metallic sheaths and armors are troubled by electrolysis and where it is difficult to eliminate induced or stray currents from the sheaths and armors, a change to non-metallic Supersheath cable is recommended. This cable can also be used to good advantage in mines, for underground distribution for both primary and secondary, for secondary alternating current networks, for underground service entrances, and for many general purposes where light weight and high corrosion resistance is desired.

Supersheath cable can be supplied with or without outer fibrous covering of pretreated, well-saturated sisal braid or duck tape. Fibrous coverings are primarily intended to protect the jacket from deterioration by sunlight. This cable is also an additional mechanical protection during installation and settlement of the back fill, and supplement the rubber jacket protection against corrosion.

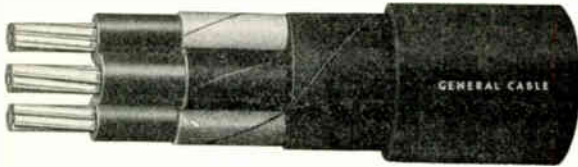
Style RS—0-2000 Volts



A single conductor cable insulated with a single layer of Supersheath compound. Has high strength, is tough and abrasion-resisting, and is an excellent insulation. Has good electrical and aging properties. Well suited to withstand both duct and direct earth installation services.

Conductor Size	Total Wall Thickness (0-600 Volts) Inches
14-2 A.W.G.	6/64
1-4/0 A.W.G.	7/64
250,000- 500,000 C.M.	8/64
501,000-1,000,000 C.M.	10/64
1,100,000-2,000,000 C.M.	12/64

Style PRS—0-5000 Volts



Includes single and multi-conductor Supersheath cable.

Single conductor cable which does not require shielding has the insulation and jacket firmly bonded together. Construction may include a separating tape between the insulation and the jacket. Shielded single conductor cable has a separating tape and the shielding tape between the insulation and jacket.

Multiple conductor cable has a tape over each insulated conductor, copper shielding tapes when required, fillers where necessary to round out the construction and a tough Supersheath jacket overall.

Conductor insulation is Performance Grade compound in accordance with A.S.T.M. Specification D353, latest issue, and the insulation thicknesses are standard in accordance with the same specification.

The Supersheath jackets are designed to have high strength and long life.

*Trade-mark

General Cable Supersheath* Non-metallic Underground Cable

Style HRS—0-2000 Volts

Similar in construction to Style PRS. The conductor insulation is Thermax, and the Supersheath is of the heat-resisting type. This style is recommended where heat resistance is of primary importance and the cable is to be installed in relatively warm and dry locations. Cable should preferably be operated below 2000 volts, but can be applied for ratings up to 5000 volts.

Style GRS—0-15,000 Volts

Similar in construction to Style PRS except that conductor insulation is Gencorone.

Furnished for a variety of special applications in voltage ratings up to 15,000 volts. Principally intended for use at voltages above those permitted for Style PRS, that is, between 5000 and 15,000 volts.

Information on the construction and application of Supersheath cable may be obtained on application.

Recommended Shielding Practice for Supersheath Cable

Shielding is recommended where the 3-phase (line to line) operating voltage exceeds the following values:

	Duct or Conduit Installation Volts	Direct Earth Installation Volts
(1) If protected against accidental direct contact by persons:		
(a) Neutral Grounded	2000	\$\$\$5000
(b) Neutral Ungrounded	2000	3000
(c) Directly Connected to Overhead Lines	**2000	**2000
(2) Not Protected Against Accidental Direct Contact by Persons	2000	2000

*Trade-mark.

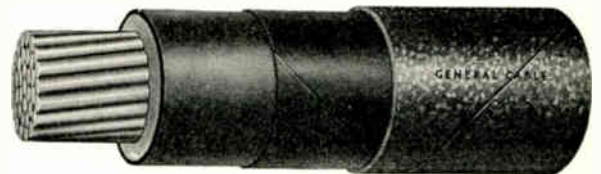
††It is important to note that all non-metallic cables operated above 2000 volts should be shielded, except those which fulfill the three conditions—(1) not connected to overhead lines which are exposed to lightning; (2) completely buried directly in earth; (3) fully protected against accidental contact.

**If connected to overhead lines exposed to lightning, shielding is advisable regardless of the operating voltage.

For maximum safety, cables containing ground wires (in addition to shielding) are recommended for voltages exceeding 2000 volts.

General Cable Thiokol*-Supersheath* Non-metallic Underground Cable

Style RTS—0-5000 Volts



For installations where oil, grease, and petroleum products may be encountered, rubber-jacketed cable should not be used without further protection of suitable non-rubber covering. For such service and where exceptional protection against sunlight, moisture, acids, and ozone are desired, Thiokol-Supersheath cable is recommended. This cable has high inherent resistance to corrosion, and offers long probable life.

Similar in construction to Style PRS except that an inner layer of high strength Supersheath compound is firmly vulcanized to an outer layer of Thiokol sheath compound. Has an overall protective covering of saturated duck tape.

Designed for use at 5000 volts or less. Recommended for subways, refineries, gas works, oil wells, and similar severe applications.

*Trade-mark (General Cable).

*Trade-mark (Thiokol Corporation).

General Cable Series Street Lighting Underground Cable

0-10,000 Volts

For underground installation either in ducts or directly in the earth. Supplied in a variety of types.

The usual sizes are 8 and 6 A.W.G., although other sizes can be furnished if required.

Conductors for all types are tinned, soft or annealed copper, usually solid, and comply with all requirements of A.S.A. Specification C8bl.

Lead Sheathed Parkway Cable



Insulated with A.S.T.M. Performance compound to standard thicknesses and enclosed in a lead sheath over which protective coverings may be applied.

Dimensions and weights are given for the following lead-sheathed types:

(1) Lead sheath with no additional covering, for use in ducts and conduit.

(2) Lead sheath with one or two servings of jute overall, for direct earth installation. As an alternate to the jute covering, duck tape can be supplied.

(3) Lead sheath with jute, double flat steel tape armor, and jute overall for direct earth installation. This type should not be used when current exceeds 12 amperes.

Open Circuit Voltage	SOLID CONDUCTORS Size A.W.G.	Diam. In.	Insulation Thick. In.	Lead Sheath Thick. In.	Lead Sheathed		Lead With Two Jute Servings		Lead With Jute, Double Steel Tape Armor, Jute Overall	
					Over-Net all Diam. In. 1000 Ft.	Net Wt. Lb. per 1000 Ft.	Over-Net all Diam. In. 1000 Ft.	Net Wt. Lb. per 1000 Ft.	Over-Net all Diam. In. 1000 Ft.	Net Wt. Lb. per 1000 Ft.
4001-6000	8	.1285	10/64	4/64	.60	679	.76	764	.95	1118
	6	.1620	10/64	4/64	.63	754	.79	853	.98	1220
7001-8000	8	.1285	12/64	4/64	.66	774	.82	875	1.01	1267
	6	.1620	12/64	4/64	.69	852	.85	962	1.04	1368

Thiokol* Sheathed Cable



For use either in ducts or directly in the earth. Conductors are insulated with A.S.T.M. Performance compound. Thiokol compound, applied directly over the rubber insulation and vulcanized thereto, provides a non-metallic protection against moisture, gasoline, oil, acid, sunlight, and ozone. Additional coverings are supplied, depending on voltage and use, as follows:

Type	Installation	Open Circuit Voltage	Additional Coverings
A	In Ducts	6000	Duck Tape
B	In Earth	3000	Fibrous Armor, Caulk, Duck Tape
C	In Ducts	10000	Semi-conducting Tape, Drain Wires, Duck Tape
D	In Earth	10000	Semi-conducting Tape, Drain Wires, Fibrous Armor, Caulk, Duck Tape

Open Circuit Volts	SOLID CONDUCTORS Size A.W.G.	Diam. In.	INSULATION THICKNESS, INCHES		Total	Type A Duct Installation		Type B Earth Installation	
			Rubber	Thiokol		Over-Net all Diam. In. 1000 Ft.	Net Wt. Lb. per 1000 Ft.	Over-Net all Diam. In. 1000 Ft.	Net Wt. Lb. per 1000 Ft.
0-600	8	.1285	3/64	2/64	5/64	.38	116	.46	129
	6	.1620	3/64	2/64	5/64	.42	145	.50	168
2001-3000	8	.1285	6/64	2/64	8/64	.48	159	.56	172
	6	.1620	7/64	2/64	9/64	.55	207	.63	232
4001-6000	8	.1285	9/64	2/64	11/64	.57	210	.68	232
	6	.1620	9/64	2/64	11/64	.61	240	.72	279
7001-8000	8	.1285	11/64	2/64	13/64	.67	254	.75	275
	6	.1620	11/64	2/64	13/64	.70	287	.78	321

*Trade-mark (Thiokol Corporation).

Construction data for cables of other sizes and voltage ratings will be supplied on request.

General Cable Series Street Lighting Underground Cable

0-10,000 Volts Rubber Sheathed Type Cable



Supersheath series street lighting cable is insulated to the standard thickness required for the operating voltage, in accordance with table on preceding page. Shielding tapes are required when the maximum open circuit voltage will exceed 6000 volts. A Supersheath jacket is applied overall. This cable may be used in ducts or installed directly in earth.

Concentric Type Cable

Concentric types for series street lighting cable have an inner insulated conductor and an outer uninsulated conductor, the latter serving as a shield.

These types are designed primarily for power circuits but are well suited to series street lighting use where a non-leaded cable is required. Description of this cable will be found under Concentric Trenchlay.

Gencorone Type Cable

Non-leaded series street lighting cable having Gencorone insulation is supplied either for duct installation or for direct earth installation. Gencorone insulation is suitable for this type of service because of its high dielectric strength and corona resistance. Gencorone can be supplied with Ruralay cable or in the following forms:

FOR DUCT INSTALLATION. Conductors insulated with Gencorone, covered with Gencorone tape, and enclosed in heavy braid. When the maximum open circuit voltage exceeds 6000 volts, shielding is recommended.

FOR DIRECT EARTH INSTALLATION. Conductors insulated with Gencorone, covered with Gencorone tape, jute bedding, double steel tape armor, and jute serving overall.

General Cable Rubber Insulated Ornamental Pole and Bracket Cable

0-10,000 Volts

Used for interior wiring of ornamental poles which are fed by underground cable, or for the exterior wiring of pole type bracket fixtures.

Standard pkg., 1000 feet on reel unless otherwise ordered.

Twin Type

Two insulated and braided conductors laid parallel and enclosed in overall tape and braid. Saturated and filled with weatherproof compound and coated with special arc cable finishing compound.

Open Circuit Voltage	CONDUCTORS Size A.W.G.	No. Strands	Diam. In.	INSULATION THICKNESS INCHES			Major Overall Wt. Lb. per 1000 Ft.	Net Wt. Lb. per 1000 Ft.
				On Conductors	Belt	Total		
0-600	10	19	.117	3/64	....	3/64	.57	198
	8	37	.148	4/64	....	4/64	.69	260
	6	37	.186	4/64	....	4/64	.77	293
2001-3000	10	19	.117	6/64	....	6/64	.75	234
	8	37	.148	6/64	....	6/64	.82	291
	6	37	.186	7/64	....	7/64	.97	330
3001-4000	10	19	.117	7/64	....	7/64	.82	243
	8	37	.148	7/64	....	7/64	.88	302
	6	37	.186	8/64	....	8/64	1.03	351

Twin Belted Type



Two insulated and braided conductors laid parallel, enclosed in a close fitting belt of insulating compound and covered with an overall tape and braid. The overall braid is saturated and filled with weatherproof compound and coated with special arc cable finishing compound.

The maximum permissible voltage between conductors is 600 volts.

4001-6000	10	19	.117	3/64	6/64	9/64	.76	256
	8	37	.148	3/64	6/64	9/64	.82	320
	6	37	.186	4/64	5/64	9/64	.95	377
7001-9000	10	19	.117	3/64	8/64	11/64	.82	280
	8	37	.148	3/64	8/64	11/64	.90	352
	6	37	.186	4/64	7/64	11/64	1.01	427
9001-10000	10	19	.117	3/64	9/64	12/64	.86	292
	8	37	.148	3/64	9/64	12/64	.93	368
	6	37	.186	4/64	8/64	12/64	1.04	451

**General Cable Rubber Insulated Tree Wire
0-8000 Volts**

Tree wire constructions consist of a rubber-insulated conductor having fibrous coverings or non-metallic sheath to withstand the abrasive action of tree limbs.

The use of tree wire on overhead distribution systems where heavy tree growth is encountered avoids re-routing of lines, or when alternate routes are not available, eliminates expense and other disadvantages of tree trimming.

Tree wire is made in single conductor form only, and, since it is normally installed on insulators, has lighter insulation walls than the usual standards for rubber insulated wire and cable. When tree wire is used for other purposes, and not supported on insulators, standard insulation walls should be used.

A.S.A. Type



Has tinned, medium hard, solid copper conductors for No. 4 A.W.G. and smaller; stranded for larger sizes.

Insulation, A.S.T.M. Performance grade rubber compound.

Tape and hawser cord braid coverings.

Saturant is of special synthetic compound (Barkhide treatment).

Pitch and mica finish.

Stantree*



A loom-woven tree wire having an abrasion resistance nearly twice that of the A.S.A. type.

Has tinned, medium hard, solid copper conductors for No. 4 A.W.G. and smaller; stranded for larger sizes.

Insulation, General Cable tree wire compound.

Tape and heavy specially constructed loom coverings of hard twisted paper twine and cotton cord.

Saturant is of special synthetic compound (Barkhide treatment).

Pitch and mica finish.

Barkhide*



An excellent tree wire, having in addition to the superior electrical properties of General Cable tree wire compound, a high degree of abrasion resistance.

Has tinned, medium hard, solid copper conductors for No. 4 A.W.G. and smaller; stranded for larger sizes.

Insulation, General Cable tree wire compound.

Tape, Rohide fiber armor covering not less than .035 inch in thickness, and closely woven hawser cord braid.

Saturant is of special synthetic compound (Barkhide treatment).

Pitch and mica finish.

Special Thicknesses of Insulation

Supported on Insulators—(N.E.M.A.)

Rated Voltage Phase	Conductor Size A.W.G.	INSULATION THICKNESS INCHES		Open Circuit Voltage	Conductor Size A.W.G.	INSULATION THICKNESS INCHES	
		Grounded	Ungrounded			With Protectors	Without Protectors
0-600	10	3/64	5/64	0-600	8-4	3/64	5/64
	8-2	1/4	3/64		8-4	3/64	5/64
	1-4/0	5/64	7/64		8-4	3/64	5/64
601-1000	8	5/64	7/64	601-1000	8	5/64	7/64
	7-4/0	5/64	7/64		7-4	5/64	7/64
1001-5000	8-4/0	5/64	7/64	1001-5000	8-4	5/64	7/64
5001-6000	8-4/0	5/64	7/64	5001-6000	8-4	5/64	7/64
6001-7000	8-4/0	7/64	9/64	6001-7000	8-4	7/64	9/64
7001-8000	8-4/0	8/64	10/64	7001-8000	8-4	8/64	10/64

*Trade-mark.

When installed without insulators, insulation thicknesses must be in accordance with the standards for series street lighting cables and for power cables. If the voltage exceeds 2000 volts on tree wire installed without insulators, shielding recommendations should be obtained from the nearest Graybar office.

**General Cable Rubber Insulated
Traffic Control or Signal Cable**

600 Volts



Braid Finished



Lead Sheathed

Suitable for general application in control circuits rated at 600 volts or less.

BRAID FINISHED. Recommended for general application, particularly in aerial circuits, and for inside use in conduit where not subject to immersion.

LEAD SHEATHED. Recommended for service in underground ducts or in locations where cable is subject to either continuous or intermittent immersion in water.

Standard conductors are solid, tinned copper, insulated with 3/64-inch N.E.C. insulation covered with N.E.M.A. color-coded braids.

Standard I.P.C.E.A. Parkway cable finish can be supplied over the lead sheath on cables to be used for direct earth installation.

Shipped on reels containing 1000 feet.

CONDUCTORS Size A.W.G. No.	Diam. In.	Braid Finished		Sheath Thickness In.	Lead Sheathed	
		Over-all Diam. In.	Wt., Lb. Per 1000 Feet Net Ship.		Over-all Diam. In.	Wt., Lb. Per 1000 Feet Net Ship.
14 2	.06408	.41x.22	61 83	3/64	.48x.29	315 394
14 3	.06408	.50	117 170	3/64	.57	592 685
14 4	.06408	.55	148 203	3/64	.62	667 783
14 5	.06408	.60	184 233	3/64	.67	752 868
14 6	.06408	.66	217 269	3/64	.73	839 1144
14 7	.06408	.66	226 277	3/64	.73	847 1152
14 8	.06408	.72	256 323	3/64	.78	929 1234
14 9	.06408	.78	285 351	3/64	.87	1222 1608
14 10	.06408	.87	336 527	3/64	.94	1355 1741
14 12	.06408	.90	388 576	3/64	.97	1438 1824
12 2	.08081	.44x.24	81 133	3/64	.52x.31	352 431
12 3	.08081	.53	153 204	3/64	.60	657 750
12 4	.08081	.60	194 247	3/64	.66	757 850
12 5	.08081	.65	238 288	3/64	.72	846 962
12 6	.08081	.71	283 349	3/64	.78	948 1253
12 7	.08081	.71	298 363	3/64	.78	962 1267
12 8	.08081	.77	338 529	3/64	.87	1268 1573
12 9	.08081	.84	378 567	3/64	.93	1380 1685
12 10	.08081	.93	442 627	3/64	1.01	1532 1918
12 12	.08081	.97	513 694	3/64	1.04	1637 2023
10 2	.1019	.48x.26	115 134	3/64	.59x.36	524 603
10 3	.1019	.58	203 251	3/64	.65	747 840
10 4	.1019	.64	259 308	3/64	.71	856 972
10 5	.1019	.71	319 383	3/64	.77	975 1091
10 6	.1019	.77	380 440	3/64	.87	1308 1613
10 7	.1019	.77	422 458	5/64	.87	1348 1653
10 8	.1019	.84	461 645	5/64	.94	1466 1771
10 9	.1019	.93	524 704	5/64	1.01	1601 1987
10 10	.1019	1.02	598 774	5/64	1.10	1779 2165
10 12	.1019	1.05	700 870	5/64	1.13	1915 2301

General Cable Trenchlay* Rubber Insulated Control Cable

600 Volts



Designed for direct earth installation. The non-metallic armoring is of the fibrous type which has been used on Trenchlay cable for many years. This sheath results in a lightweight cable which is easy to splice and to terminate, and which is free from trouble due to electrolysis.

Conductors are insulated with 3/4-inch Trenchlay compound which is highly resistant to water and earth solutions.

A color-coded cotton braid is applied on each conductor.

The taped assembly is provided with a moisture seal of asbestos base caulk, a heavy saturated asbestos braid, a second layer of caulk, pretreated fibrous armor tape, a third layer of caulk, and a heavy presaturated duck tape.

Cable is finished with pitch and mica to provide a non-tacky surface.

A variation in the regular Trenchlay underground finish can be supplied when a control cable is desired for underground, aerial, and duct (universal) service.

Shipped on reels containing 1000 feet.

Nominal Size A.W.G.	No.	Construction	Diameter Inches	Overall Diameter Inches	Weight, Pounds Per 1000 Feet	
					Net	Shipping
14	2	19/#27	.0710	.796	239	519
14	3	19/#27	.0710	.827	275	555
14	4	19/#27	.0710	.878	331	611
14	5	19/#27	.0710	.935	373	653
14	6	19/#27	.0710	.994	413	693
14	7	19/#27	.0710	.994	438	718
14	8	19/#27	.0710	1.054	494	865
14	9	19/#27	.0710	1.114	555	926
14	10	19/#27	.0710	1.192	605	976
14	12	19/#27	.0710	1.223	674	1045
12	2	19/#25	.0895	.828	293	573
12	3	19/#25	.0895	.861	339	619
12	4	19/#25	.0895	.917	407	687
12	5	19/#25	.0895	.978	469	748
12	6	19/#25	.0895	1.042	527	898
12	7	19/#25	.0895	1.042	559	930
12	8	19/#25	.0895	1.107	637	1008
12	9	19/#25	.0895	1.173	699	1070
12	10	19/#25	.0895	1.256	766	1137
12	12	19/#25	.0895	1.289	855	1226
9	2	19/#22	.1267	.839	367	647
9	3	19/#22	.1267	.878	451	731
9	4	19/#22	.1267	.943	556	836
9	5	19/#22	.1267	1.015	646	1017
9	6	19/#22	.1267	1.090	733	1104
9	7	19/#22	.1267	1.090	791	1162
9	8	19/#22	.1267	1.167	896	1267
9	9	19/#22	.1267	1.243	988	1357
9	10	19/#22	.1267	1.372	1146	1517
9	12	19/#22	.1267	1.411	1291	1662

*Trade-mark.

General Cable Fire Alarm, Police Signal, and Municipal Signal Cable

600 Volts



For general service in fire alarm, police signal, and other municipal signal systems.

Constructed with many combinations of conductors and pairs. Designed with suitable overall coverings for underground, aerial, or inside use.

May be made to conform to various specifications, but the Specifications and Operating Standards of the International Municipal Signal Association, Inc. are most generally accepted and followed unless otherwise specified.

This cable is standard in the following forms:

(1) Rubber insulated, lead sheathed multiple conductor signal cable for general use in underground ducts, aerial use with messenger or in stations and buildings.

(2) Rubber insulated, lead sheathed and armored multiple conductor Parkway signal cable for general use installed directly in the earth without conduit protection.

(3) Rubber insulated, heavy braid or loom covered multiple conductor signal cable for aerial use with messenger or for conduit and duct installations.

(4) Rubber insulated, braid covered single conductor signal wire for general use in stations, boxes, etc.

(5) Rubber insulated, 2-conductor, twisted or parallel outside telephone drop wire.

Variable Construction Features

CONDUCTORS. All conductors are tinned copper in accordance with American Standards Association Specifications.

INSULATION. The insulation is high-grade heat-resisting long-life rubber compound (Thermax). Other grades such as A.S.T.M. Class AO can be supplied if requested. The thicknesses of insulation are standard for operation at 600 volts or less.

BRAIDS. Saturated braids, either color-coded or plain will be furnished on the individual conductors only when specified by the purchaser.

ASSEMBLY. Multiple conductor assemblies are laid up symmetrically in layers in round form, jute fillers being used where necessary. Tracer conductors are included in each layer for identification purposes. A tape is applied over the core.

LEAD SHEATH. The sheath of non-armored cable is a lead-tin alloy containing approximately 2% tin.

The sheath of armored cable is commercially pure lead without alloy.

General Cable Bare Copper Wire Coarse and Intermediate Sizes

Size A.W.G. Mils.	Diam.	AREA		Net Wt. per 1000 Feet	SOFT OR ANNEALED					MEDIUM HARD				HARD DRAWN		
		C.M.	Sq. In.		REELS	Tensile Strength Max. Lb.	Max. Strength Lb. per Sq. In.	Max. Ohms per 1000 Ft. 68°F.	BREAKING STRENGTH		TENSILE STRENGTH		Max. Resist. Ohms per 1000 Ft. 68°F.	Breaking Strength Min. Lb.	Tensile Strength Min. Lb. per Sq. In.	Max. Resist. Ohms per 1000 Ft. 68°F.
									Feet	Coils Net Wt. Lb.	Max.	Min.					Max.	Min.
17	45.26	2,048	.001609	6.200	125	61.93	38,500	5.158	95.97	84.71	59,660	52,660	5.239	107.5	66,800	5.266
16	50.82	2,583	.002028	7.818	125	78.10	38,500	4.091	120.3	106.2	59,330	52,330	4.154	135.1	66,600	4.176
15	57.07	3,257	.002558	9.858	125	98.48	38,500	3.244	150.9	133.0	59,000	52,000	3.295	169.8	66,400	3.312
14	64.08	4,107	.003225	12.43	125	124.2	38,500	2.573	189.2	166.6	58,660	51,660	2.613	213.5	66,200	2.626
13	71.96	5,178	.004067	15.68	125	156.6	38,500	2.040	237.2	208.8	58,330	51,330	2.072	268.0	65,900	2.083
12	80.81	6,530	.005129	19.77	125	197.5	38,500	1.618	297.5	261.6	58,000	51,000	1.643	337.0	65,700	1.652
11	90.74	8,234	.006467	24.92	250	249.0	38,500	1.283	372.9	327.6	57,660	50,660	1.303	422.9	65,400	1.310
10	101.9	10,380	.008155	31.43	250	314.0	38,500	1.018	467.5	410.4	57,330	50,330	1.033	529.2	64,900	1.039
9	114.4	13,090	.01028	39.63	250	380.5	37,000	.8070	586.1	514.2	57,000	50,000	.8195	661.2	64,300	.8238
8	128.5	16,510	.01297	49.97	250	479.8	37,000	.6400	734.7	643.9	56,660	49,660	.6499	826.0	63,700	.6533
7	144.3	20,820	.01635	63.02	250	605.0	37,000	.5075	921.0	806.6	56,330	49,330	.5154	1030.	63,000	.5181
6	162.0	26,250	.02062	79.46	250	762.9	37,000	.4025	1155.	1010.	56,000	49,000	.4087	1280.	62,100	.4108
5	181.9	33,100	.02600	100.2	250	961.9	37,000	.3192	1446.	1264.	55,660	48,660	.3241	1591.	61,200	.3258
4	204.3	41,740	.03278	126.4	5280	667	250	1213.	1814.	1584.	55,330	48,330	.2570	1970.	60,100	.2584
3	229.4	52,630	.04134	159.3	5280	841	250	1530.	2274.	1984.	55,000	48,000	.2038	2439.	59,000	.2049
2	257.6	66,370	.05213	200.9	5280	1061	250	1929.	2815.	2450.	54,000	47,000	.1617	3003.	57,600	.1625
1	289.3	83,690	.06573	253.3	5280	1338	250	2432.	3700.	3244.	53,000	46,000	.1282	3688.	56,100	.1287
1/0	324.9	105,500	.08289	319.5	5280	1687	250	2984.	4600.	4010.	52,000	45,000	.1006	4517.	54,500	.1011
2/0	364.8	133,100	.1045	402.8	5280	2127	250	3763.	5930.	4599.	51,000	44,000	.07980	5519.	52,800	.08021
3/0	409.6	167,800	.1318	507.9	2640	1341	250	4745.	7567.	5667.	50,000	43,000	.06329	6722.	51,000	.06361
4/0	460.0	211,600	.1662	640.5	1000	641	250	5983.	9843.	6980.	49,000	42,000	.05019	8143.	49,000	.05045

Diameter tolerances:
 (a) Soft or annealed (A.S.T.M. Spec. B 3) $\pm 1\%$.
 (b) Medium hard (A.S.T.M. Spec. B 2) or hard drawn (A.S.T.M. Spec. B 1): For wires 100 mils in diameter or larger $\pm 1\%$. For wires less than 100 mils in diameter ± 1 mil.
 Breaking strengths are based on tensile strength requirements of A.S.T.M. Spec. B 3) (soft or annealed), B2 (medium hard); B 1 (hard drawn).

Fine Wire Sizes

Size A.W.G.	MAX. RESISTANCE OHMS PER 1000 FT., 68°F.		
	Soft or Annealed	Medium Hard	Hard Drawn
45	3406.	3459.	3477.
44	2702.	2743.	2758.
43	2142.	2176.	2187.
42	1699.	1725.	1734.
41	1347.	1368.	1375.
40	1069.	1085.	1091.
39	847.4	860.5	865.0
38	672.0	682.4	686.0
37	532.9	541.2	544.0
36	422.6	429.2	431.4
35	335.2	340.4	342.1
34	265.8	269.9	271.3
33	210.8	214.1	215.2
32	167.2	169.8	170.6
31	132.6	134.6	135.3
30	105.1	106.8	107.3
29	83.37	84.66	85.10
28	66.11	67.14	67.49
27	52.43	53.25	53.52
26	41.58	42.23	42.44
25	32.97	33.49	33.66
24	26.15	26.56	26.69
23	20.74	21.06	21.17
22	16.45	16.70	16.79
21	13.04	13.24	13.31
20	10.34	10.50	10.56
19	8.202	8.330	8.373
18	6.505	6.606	6.640

Resistances are maximum values for nominal diameters based upon A.S.T.M. Specification resistivities, as follows:

	Lb. Mile- Ohm	Equip. I.A.C.S. Conduc- tivity%
Soft or Annealed (A.S.T.M. Spec. B3)	891.58	98.16
Medium Hard (A.S.T.M. Spec. B2): Diam. .400" - .325" (4/0-1/0 A.W.G.)	896.15	97.66
Diam. .324" - .040" (1-18 A.W.G.)	905.44	96.66
Hard Drawn (A.S.T.M. Spec. B1): Diam. .400" - .325" (4/0-1/0 A.W.G.)	900.77	97.16
Diam. .324" - .040" (1-18 A.W.G.)	910.15	96.16

For wire sizes smaller than 18 A.W.G. in medium hard and hard drawn tempers: No A.S.T.M. requirements; resistances for these sizes in table based on 905.44 pounds per mile-ohm (96.66% conductivity) for medium hard wire, and 910.15 pounds per mile-ohm (96.16% conductivity) for hard drawn wire.

General Cable Square and Rectangular Copper Wire Soft or Annealed, Bare and Tinned (A.S.T.M. Specification B48)



Used in the construction of transformers and other electrical machinery. Made by processing round wires. Finished with round corners.

Physical characteristics are controlled to provide sections suitable for edgewise bending. Fabricated wire is subjected to special final polishing and cleaning.

Section	Bare Wire		Tinned Wire	
	Max.	Min.	Max.	Min.
Square	Width and Thickness	.365, .0571	.325, .0571	
	Area (Corrected for Corner Radii)	Maximum Minimum	Maximum Minimum	
	Circular Mils.	165,360 3468	130,150 3468	
	Square Mils.	129,870 2724	102,220 2724	
Rectangular	Width	.750, .040	.750, .040	
	Thickness	.365, .010	.320, .010	
	Maximum Area (Corrected for Corner Radii)			
	Circular Mils.	186,660	130,150	
	Square Mils.	146,600	102,220	
	Max. Width at Max. Thick.	.365 at .365	.330 at .320	
Max. Thick. at Max. Width.	.200 at .750	.141 at .750		

Standard packages (net weight—pounds):
 (a) For sectional areas of 5000 square mils or less, 110 pounds on reels.
 (b) For sectional areas greater than 5000 square mils, 220 pounds on reels.

Tolerances and Physical Properties—For Standard Sections

Thickness Inches	STANDARD CORNER RADII			STANDARD THICKNESS TOLERANCES		Maximum Tensile Strength Lb. per Sq. In.	Minimum Elongation 10-inch Section
	For Widths .040"-.438"	For Widths .439"-.625"	For Widths .626"-.750"	For Widths .040"-.500"	For Widths .501"-.750"		
.010	Half Round	Half Round	Half Round	.0010"	.0010"	38,500	14%
.011-.020	Half Round	Half Round	Half Round	.0010"	.0010"	40,000	20%
.021-.050	Half Round	Half Round	Half Round	.0010"	.0010"	38,500	25%
.051-.100	.025"	Half Round	Half Round	.0010"	.0010"	37,000	30%
.101-.105	.025"	Half Round	Half Round	1%	1%	37,000	30%
.106-.125	.031"	Half Round	Half Round	1%	1%	37,000	30%
.126-.165	.031"	.047"	.063"	1%	1%	37,000	30%
.166-200	.047"	.047"	.063"	1%	1%	37,000	30%
.201-.225	.047"	.047"	.063"	1%	1%	37,000	30%
.226-.289	.063"	.063"	.094"	1%	1%	37,000	30%
.290-300	.063"	.063"	....	1%	1%	36,000	30%
.301-365	.063"	.063"	....	.0030"	....	36,000	30%

Standard Width Tolerances:
 Nominal Width in Inches 040-300 .301-750
 Permissible Variation in Width $\pm .003"$ $\pm 1\%$
 Resistivity at 68° F.: 891.58 pounds per mile-ohm (equivalent to 98.16% I.A.C.S. Conductivity)—maximum.
 Density at 68° F.: 8.89 g. per cubic cm. (equivalent to .000003027 pound per circular mil-foot or .000003854 pound per square mil-foot)—nominal for calculating weights.

General Cable Bare Concentric Stranded Cable

Soft or Annealed Copper



Size C.M.	Over- all Diam. In.	No. Strands	Break- ing Strength Lb.	Resist. Ohms per 1000 Feet 68°F.	Net Wt. Lb. per 1000 Feet	REELS	
						Feet	Net Wt. Lb.
250,000	.574	A-19	7,265	.04311	771.9	3500	2702
250,000	.575	B-37	7,559	.04311	771.9	3500	2702
300,000	.629	A-19	8,718	.03592	926.3	2640	2445
300,000	.630	B-37	9,071	.03592	926.3	2640	2445
350,000	.679	A-19	10,170	.03079	1,081.	2640	2853
350,000	.681	B-37	10,580	.03079	1,081.	2640	2853
400,000	.726	A-19	11,620	.02694	1,235.	2000	2470
400,000	.728	B-37	11,620	.02694	1,235.	2000	2470
450,000	.772	B-A-37	13,080	.02395	1,389.	2000	2779
500,000	.814	B-A-37	14,530	.02155	1,544.	2000	3088
600,000	.891	A-37	17,440	.01796	1,853.	1600	2964
600,000	.893	B-61	18,140	.01796	1,853.	1600	2964
700,000	.964	B-A-61	20,340	.01540	2,161.	1400	3026
750,000	.998	B-A-61	21,790	.01437	2,316.	1250	2895
800,000	1.031	B-A-61	23,250	.01347	2,470.	1200	2964
900,000	1.094	B-A-61	26,150	.01197	2,779.	1100	3057
1,000,000	1.152	B-A-61	29,060	.01078	3,088.	1000	3088
1,250,000	1.288	A-61	36,320	.008622	3,859.	750	2895
1,250,000	1.289	B-91	36,320	.008622	3,859.	750	2895
1,500,000	1.411	A-61	43,590	.007185	4,631.	650	3010
1,500,000	1.412	B-91	43,590	.007185	4,631.	650	3010
1,750,000	1.526	A-91	50,850	.006158	5,403.	550	2972
1,750,000	1.526	B-127	50,850	.006158	5,403.	550	2972
2,000,000	1.630	A-91	58,120	.005388	6,175.	500	3088
2,000,000	1.631	B-127	58,120	.005388	6,175.	500	3088
2,500,000	1.823	A-91	72,650	.004353	7,794.	500	3897
2,500,000	1.824	B-127	72,650	.004353	7,794.	500	3897
3,000,000	1.998	A-127	87,180	.003628	9,353.	500	4677
3,000,000	1.998	B-169	87,180	.003628	9,353.	500	4677
3,500,000	2.158	A-127	101,700	.003139	11,020.	500	5510
3,500,000	2.159	B-169	101,700	.003139	11,020.	500	5510
4,000,000	2.307	A-169	116,200	.002747	12,590.	500	6295
4,000,000	2.309	B-217	116,200	.002747	12,590.	500	6295
4,500,000	2.448	A-169	130,800	.002465	14,300.	As Speci- fied	
4,500,000	2.448	B-217	130,800	.002465	14,300.		
5,000,000	2.580	A-169	145,300	.002219	15,890.		
5,000,000	2.581	B-217	145,300	.002219	15,890.		

Area of cross section (equivalent to sum of areas of individual wires) shall not be less than 98% of listed areas (A.S.T.M. Spec. B 8).

Letter designation under "Number of Strands" indicates A.S.T.M. strand class.

Breaking strengths: Maximum values for nominal diameters based upon tensile strength limits of A.S.T.M. Specs. B 3 and B 8.

Resistances: Maximum values for nominal diameters based upon A.S.T.M. Spec. B 3 resistivity of 891.58 lbs. per mile-ohm (equivalent to 98.16% I.A.C.S. conductivity), increased as follows for stranding:

- (a) 5,000,000—4,500,000 C.M. 5%
- (b) 4,000,000—3,500,000 C.M. 4%
- (c) 3,000,000—2,500,000 C.M. 3%
- (d) 2,000,000—250,000 C.M. 2%

Weights: Same percentage increases as for resistance stranding allowance.

Also supplied in alternate strandings.

General Cable Bare Concentric Stranded Cable

Soft or Annealed Copper



Size A.W.G.	Area C.M.	No. Strands	Over- all Diam. In.	Break- ing Strength Lb.	Resist. Ohms per 1000 Feet 68°F.	Net Wt. Lb. per 1000 Feet	REELS		
							Feet	Net Wt. Lb.	Coils Net Wt. Lb.
20	1,022	B-7	.0363	32.11	10.54	3.155	As Specified		
18	1,624	B-7	.0456	51.02	6.636	5.014			
16	2,583	B-7	.0576	81.15	4.172	7.975			
16	2,583	C-19	.0585	81.15	4.172	7.975			
14	4,107	B-7	.0726	124.2	2.624	12.68			
14	4,107	C-19	.0735	129.0	2.624	12.68			
12	6,530	B-7	.0915	197.5	1.650	20.16			
12	6,530	C-19	.0925	205.1	1.650	20.16			
10	10,380	B-7	.116	313.9	1.038	32.05			
10	10,380	C-19	.117	313.9	1.038	32.05			
9	13,090	B-7	.130	395.8	.8233	40.42			
9	13,090	C-19	.131	395.8	.8233	40.42			
8	16,510	B-7	.146	499.2	.6528	50.98	15,000	765	250
8	16,510	C-19	.147	499.2	.6528	50.98	15,000	765	250
7	20,820	B-7	.164	629.6	.5176	64.28	12,000	771	250
7	20,820	C-19	.166	629.6	.5176	64.28	12,000	771	250
6	26,250	B-7	.184	793.8	.4105	81.05	12,000	973	250
6	26,250	C-19	.186	793.8	.4105	81.05	12,000	973	250
5	33,100	B-7	.206	1001.	.3256	102.2	10,560	1079	250
5	33,100	C-19	.209	1001.	.3256	102.2	10,560	1079	250
4	41,740	B-A-7	.232	1262.	.2582	128.9	10,560	1361	300
4	41,740	C-19	.234	1262.	.2582	128.9	10,560	1361	300
3	52,630	B-A-7	.260	1592.	.2047	162.5	10,560	1716	300
3	52,630	C-19	.263	1592.	.2047	162.5	10,560	1716	300
2	66,370	B-A-7	.292	2007.	.1624	204.9	10,560	2164	300
2	66,370	C-19	.296	2007.	.1624	204.9	10,560	2164	300
1	83,690	A-7	.328	2432.	.1288	258.4	10,560	2729	300
1	83,690	B-19	.332	2531.	.1288	258.4	10,560	2729	300
1/0	105,500	A-7	.368	3066.	.1021	325.7	5,280	1720	300
1/0	105,500	B-19	.373	3190.	.1021	325.7	5,280	1720	300
2/0	133,100	A-7	.414	3868.	.08097	410.9	5,280	2170	300
2/0	133,100	B-19	.418	4025.	.08097	410.9	5,280	2170	300
3/0	167,800	A-7	.464	4876.	.06422	518.1	5,280	2736	300
3/0	167,800	A-12	.492	4876.	.06422	518.1	5,280	2736	300
3/0	167,800	B-19	.470	5074.	.06422	518.1	5,280	2736	300
4/0	211,600	A-7	.522	6149.	.05093	653.3	5,280	3450	300
4/0	211,600	A-12	.552	6149.	.05093	653.3	5,280	3450	300
4/0	211,600	B-19	.528	6149.	.05093	653.3	5,280	3450	300

Area of cross section (equivalent to sum of areas of individual wires) shall not be less than 98% of listed areas (A.S.T.M. Spec. B 8).

Letter designation under "Number of Strands" indicates A.S.T.M. strand class.

Breaking strengths: Maximum values for nominal diameters based upon tensile strength limits of A.S.T.M. Specs. B 3 and B 8.

Also supplied in alternate strandings.

Resistances: Maximum values for nominal diameters based upon A.S.T.M. Spec. B 3 resistivity of 891.58 lbs. per mile-ohm (equivalent to 98.16% I.A.C.S. conductivity) increased 2% for stranding.

Weights: Same percentage increases as for resistance stranding allowance.

General Cable Tinned or Amaloy Coated Solid Wire

Soft or Annealed Copper



Tinned copper wire and cable can be furnished, either soft annealed or hard drawn, in strandings as well as in solid conductor form. The solid conductor form is normally limited to No. 1 A.W.G. and smaller sizes. Tinned soft or annealed wires are manufactured in accordance with all requirements of A.S.T.M. Spec. B33.

The more commonly used tinned wires and cables are shown in the following table.

Special Amaloy, in place of tin, is used in numerous applications where desirable and can be supplied when required.

Size A.W.G.	Nom. Diam. Mils	DIAMETER RANGE, MILLS		Breaking Strength Lb.	Resist. Ohms per 1000 Feet 68°F.	Net Wt. Lb. per 1000 Feet	STANDARD (PACKAGES) Feet	Net Wt. Lb.
		Min.	Max.					
40	3.145	3.045	3.445	.311	1126.	.03208	62,300	■2
39	3.531	3.431	3.831	.392	893.0	.04015	49,800	■2
38	3.965	3.865	4.265	.494	708.1	.05025	39,800	■2
37	4.453	4.353	4.753	.623	561.6	.06304	31,700	■2
36	5.000	4.900	5.300	.785	445.4	.07907	63,200	■5
35	5.615	5.515	5.915	.990	353.2	.09929	50,300	■5
34	6.305	6.205	6.605	1.249	280.1	.1247	40,100	■5
33	7.080	6.980	7.380	1.575	222.1	.1567	31,900	■5
32	7.950	7.850	8.250	1.986	176.1	.1968	25,400	■5
31	8.928	8.828	9.228	2.504	139.7	.2476	20,200	■5
30	10.03	9.93	10.33	3.157	110.8	.3113	38,500	■12
29	11.26	11.15	11.60	3.981	87.85	.3917	30,600	■12
28	12.64	12.51	13.02	4.895	68.92	.4929	24,300	■12
27	14.20	14.06	14.63	6.172	54.66	.6204	19,300	■12
26	15.94	15.78	16.42	7.783	43.34	.7810	15,400	■12
25	17.90	17.72	18.44	9.815	34.37	.9833	12,200	■12
24	20.10	19.90	20.70	12.38	27.26	1.238	9,690	■12
23	22.57	22.34	23.25	15.41	21.17	1.559	7,700	■12
22	25.35	25.10	26.11	19.43	16.79	1.965	6,100	■12
21	28.46	28.17	29.31	24.50	13.31	2.474	10,100	■25
20	31.96	31.64	32.92	30.89	10.56	3.117	8,020	■25
19	35.89	35.53	36.97	38.95	8.373	3.927	20,370	●80
18	40.30	39.90	41.51	49.12	6.640	4.949	24,250	●120
17	45.26	44.81	46.62	61.93	5.266	6.237	19,240	●120
16	50.82	50.31	52.34	78.10	4.176	7.860	15,270	●120
15	57.07	56.50	58.78	98.48	3.312	9.906	12,110	●120
14	64.08	63.44	66.00	124.2	2.626	12.84	19,470	●250
13	71.96	71.24	74.12	156.6	2.083	15.74	15,880	●250
12	80.81	80.00	83.23	197.5	1.652	19.84	12,600	●250
11	90.74	89.83	93.46	249.0	1.310	25.00	10,000	●250
10	101.9	100.9	104.9	314.0	1.039	31.52	7,930	●250
9	114.4	113.2	117.8	380.5	.8153	39.73	6,290	●250
8	128.5	127.2	132.3	479.8	.6465	50.09	4,990	●250
7	144.3	142.8	148.6	605.0	.5127	63.15	3,959	●250
6	162.0	160.4	166.9	762.9	.4066	79.61	3,140	●250
5	181.9	180.1	187.3	961.9	.3225	100.4	2,490	●250
4	204.3	202.2	210.4	1213.	.2557	126.6	1,975	●250
3	229.4	227.1	236.3	1530.	.2028	159.5	1,567	●250
2	257.6	255.0	265.3	1929.	.1608	201.1	1,094	●220
1	289.3	286.4	298.0	2432.	.1275	253.6	867	●220

●On reels.

■On spools.

Breaking strengths: Maximum values for nominal diameters based upon tensile strength limits of A.S.T.M. Spec. B33.

Resistances: Maximum values for nominal diameters based upon resistivity limits of A.S.T.M. Spec. B33.

Weights: Nominal values for estimating purposes only and subject to normal variations in manufacture.

General Cable Concentric Stranded Cable Bare and Tinned Copper—Soft or Annealed Medium Hard and Hard Drawn



CLASS AA. Used for bare cable.

CLASS A. For weather-resistant (weatherproof), slow burning and slow-burning weather-resistant cable, and for bare cable where greater flexibility than is afforded by Class AA is required.

CLASS B. For cable insulated with various materials such as rubber, paper, varnished cloth, etc., and for the cable indicated under Class A where greater flexibility is required.

CLASS C and CLASS D. For cable where greater flexibility is required than is provided by Class B cable.

Size A.W.G.	C.M.	Class AA		Class A		Class B		Class C		Class D	
		No. Strands	Diam. Ind. Mils	No. Strands	Diam. Ind. Mils	No. Strands	Diam. Ind. Mils	No. Strands	Diam. Ind. Mils	No. Strands	Diam. Ind. Mils
20	1,022	..	..	..	..	7	12.1	19	7.3	..	..
18	1,624	..	..	..	..	7	15.2	19	9.2	..	..
16	2,583	..	..	..	..	7	19.2	19	11.7	..	..
14	4,107	..	..	..	..	7	24.2	19	14.7	37	10.5
12	6,530	..	..	..	..	7	30.5	19	18.5	37	13.3
10	10,380	..	..	..	..	7	38.5	19	23.4	37	16.7
9	13,090	..	..	..	..	7	43.2	19	26.2	37	18.8
8	16,510	..	..	..	..	7	48.6	19	29.5	37	21.1
7	20,820	..	..	..	..	7	54.5	19	33.1	37	23.7
6	26,250	..	..	..	..	7	61.2	19	37.2	37	26.6
5	33,100	..	..	..	..	7	68.8	19	41.7	37	29.9
4	41,740	3	118.0	7	77.2	7	77.2	19	46.9	37	33.6
3	52,630	3	132.5	7	86.7	7	86.7	19	52.6	37	37.7
2	66,370	3	148.7	7	97.4	7	97.4	19	59.1	37	42.4
1	83,690	3	167.0	7	109.3	19	66.4	37	47.6	61	37.0
1/0	105,500	7	122.8	7	122.8	19	74.5	37	53.4	61	41.6
2/0	133,100	7	137.9	7	137.9	19	83.7	37	60.0	61	46.7
3/0	167,800	7	154.8	7	154.8	19	94.0	37	67.3	61	52.4
4/0	211,600	17	173.9	17	173.9	19	105.5	37	75.6	61	58.9
..	250,000	12	144.3	19	114.7	37	82.2	61	64.0	91	52.4
..	300,000	12	158.1	19	125.7	37	90.0	61	70.1	91	57.4
..	350,000	12	170.7	19	135.7	37	97.3	61	75.7	91	62.0
..	400,000	19	145.1	19	145.1	37	104.0	61	81.0	91	66.3
..	450,000	19	153.9	37	110.3	37	110.3	61	85.9	91	70.3
..	500,000	19	162.2	37	116.2	37	116.2	61	90.5	91	74.1
..	550,000	37	121.9	37	121.9	61	95.0	91	77.7	127	65.8
..	600,000	37	127.3	37	127.3	161	99.2	91	81.2	127	68.7
..	650,000	37	132.5	61	103.2	61	103.2	91	84.5	127	71.2
..	700,000	37	137.5	61	107.1	61	107.1	91	87.7	127	74.8
..	750,000	37	142.4	61	110.9	61	110.9	91	90.8	127	76.5
..	800,000	37	147.0	61	114.5	61	114.5	91	93.8	127	79.4
..	900,000	37	156.0	61	121.5	61	121.5	91	99.4	127	84.2
..	1,000,000	37	164.4	61	128.0	61	128.0	91	104.8	127	88.7
..	1,100,000	..	..	61	134.3	91	109.9	127	93.1	169	80.7
..	1,200,000	..	..	61	140.3	91	114.8	127	97.2	169	84.3
..	1,250,000	..	..	61	143.1	91	117.2	127	99.2	169	86.0
..	1,300,000	..	..	61	146.0	91	119.5	127	101.2	169	87.7
..	1,400,000	..	..	61	151.5	91	124.0	127	105.0	169	91.0
..	1,500,000	..	..	61	156.8	91	128.4	127	108.7	169	94.2
..	1,600,000	..	..	91	132.6	127	112.2	169	97.3	217	85.9
..	1,700,000	..	..	91	136.7	127	115.7	169	100.3	217	88.5
..	1,750,000	..	..	91	138.7	127	117.4	169	101.8	217	89.8
..	1,800,000	..	..	91	140.6	127	119.1	169	103.2	217	91.1
..	1,900,000	..	..	91	144.5	127	122.3	169	106.0	217	93.6
..	2,000,000	..	..	91	148.2	127	125.5	169	108.8	217	96.0
..	2,500,000	..	..	91	165.7	127	140.3	169	121.6	217	107.3
..	3,000,000	..	..	127	153.7	169	133.2	217	117.6	271	105.2
..	3,500,000	..	..	127	166.0	169	143.8	217	127.0	271	113.6
..	4,000,000	..	..	169	153.8	217	135.8	271	121.5	271	121.5
..	4,500,000	..	..	169	163.2	217	144.0	271	128.9	271	128.9
..	5,000,000	..	..	169	172.0	217	151.8	271	135.8	271	135.8

†Optional construction for No. 4/0 A.W.G. size in Class AA and Class A is 12 wires of 132.8 mils diameter.

‡Optional construction for No. 3/0 A.W.G. size in Class AA and Class A is 12 wires of 118.3 mils diameter.

§Optional construction for 600,000 c.m. size in Class B is 37 wires of 127.3 mils diameter.

¶Optional construction for 550,000 c.m. size in Class B is 37 wires of 121.9 mils diameter.

General Cable Overhead Line Conductors

Bare Copper—Hard Drawn and Medium Hard Drawn

General Cable supplies a complete series of bare overhead line conductors to cover the entire range of electrical and physical requirements necessary for all forms of transmission or distribution system design for power, communication, and signal circuits.

Copper conductors provide a useful combination of electrical and physical properties not possessed by any other commercial metal.

Important advantages are: **High Electrical Conductivity.** Copper has the highest electrical conductivity of all commercial metals which results in the smallest conductor diameter and therefore the lowest transverse stressing of supporting structures in most applications.

Low Cost. The low cost of copper makes it a particularly economical conductor.

Strength. Hard drawn copper possesses the strength of mild steel. Other tempers provide a wide range of tensile strengths, as required for different applications. A correct adjustment between required strength and necessary flexibility, of particular importance in larger conductor sizes, is therefore always possible with standard copper conductor constructions.

Hardness. The hardness and abrasion resistance of copper insure freedom from conductor injury during construction and operation.

Fatigue Resistance. Considering vibration troubles of certain types of overhead line conductors, copper has maintained an enviable record of practical freedom from injury due to vibration.

Copper conductors can be assembled by any method available to other conductor types. Special assemblies, such as 3-wire strand, are therefore available to reduce the possibility of vibration under particularly severe operating conditions.

Permanence. The exceedingly high resistance of copper to corrosion results in a greater freedom from deterioration, both electrically and mechanically.

Reliability and Ease of Splicing. The physical characteristics and corrosion-resisting properties of copper conductors make possible easy and efficient splicing in the field and eliminate the use of special clamps and tools.

Resistance to Flashover. The relatively higher melting point and electrical conductivity of copper conductors safeguard them to a remarkable degree from the injurious effects of arcs or flashovers.

Re-use. The characteristics which make copper the outstanding metal for line conductors also make practical its re-use when desirable.

Salvage Value. Based upon sound economic principles, copper possesses an extra-

ordinarily high salvage value.

Dependability. The uniformly satisfactory experience from a tremendous aggregate line mileage over a period of many years is eloquent evidence of the dependability of copper line conductors.

For those applications requiring tensile strengths beyond the limits of copper conductors, constructions using either copper bearing alloys or copper clad steel conductors are available.

Solid Conductors

Size A.W.G.	Area C.M.	No. Strands	Over-All Diam. In.	Net Wt. per 1000 Feet	Net Wt. per Mile	Hard Drawn		Medium Hard		Resist. Ohms per 1000 Feet 68°F.	REELS Feet	Coils Net Wt. Lb.
						Min. Breaking Strength Lb.	Resist. Ohms per 1000 Feet 68°F.	BREAKING STRENGTH POUNDS				
								Min.	Max.			
14	4,107	..	.06408	12.43	65.64	213.5	2.626	166.6	189.2	2.613	....	125
13	5,178	..	.07196	15.68	82.77	268.0	2.083	208.8	237.2	2.072	....	125
12	6,530	..	.08081	19.77	104.4	337.0	1.652	261.6	297.5	1.643	....	125
11	8,234	..	.09074	24.92	131.6	422.9	1.310	327.6	372.9	1.303	....	250
10	10,380	..	.1019	31.43	165.9	529.2	1.039	410.4	467.5	1.033	....	250
9	13,090	..	.1144	39.63	209.3	661.2	.8238	514.2	586.1	.8195	....	250
8	16,510	..	.1285	49.97	263.9	826.0	.6533	643.9	734.7	.6499	....	250
7	20,820	..	.1443	63.02	332.7	1,030.	.5181	806.6	921.0	.5154	....	250
6	26,250	..	.1620	79.46	419.6	1,280.	.4108	1,010.	1,155.	.4087	11340	900 250
5	33,100	..	.1819	100.2	529.1	1,591.	.3258	1,264.	1,446.	.3241	9000	900 250
4	41,740	..	.2043	126.4	667.1	1,970.	.2584	1,584.	1,814.	.2570	7140	900 250
3	52,630	..	.2294	159.3	841.2	2,439.	.2049	1,984.	2,274.	.2038	5660	900 250
2	66,370	..	.2576	200.9	1,061.	3,003.	.1625	2,450.	2,815.	.1617	6965	1400 250
1	83,690	..	.2893	253.3	1,338.	3,688.	.1287	3,024.	3,484.	.1282	5280	1338 250
1/0	105,500	..	.3249	319.5	1,687.	4,517.	.1011	3,730.	4,310.	.1006	5280	1687 250
2/0	133,100	..	.3648	402.8	2,127.	5,519.	.08021	4,599.	5,330.	.07980	5280	2127 250
3/0	167,800	..	.4096	507.9	2,682.	6,722.	.06361	5,667.	6,590.	.06329	2640	1341 250
4/0	211,600	..	.4600	640.5	3,382.	8,143.	.05045	6,980.	8,143.	.05019	1000	641 250

Stranded Conductors

6	26,250	3	.201	80.26	423.8	1,205.	.4149	933.9	1,064.	.4128	7000	565 250
5	33,100	3	.226	101.2	534.3	1,505.	.3291	1,170.	1,334.	.3274	5280	534 250
4	41,740	3	.254	127.6	673.8	1,879.	.2610	1,465.	1,672.	.2596	8000	1020 300
3	52,630	3	.285	160.9	849.6	2,359.	.2070	1,835.	2,096.	.2059	6000	970 300
2	66,370	3	.320	202.9	1,071.	2,913.	.1641	2,299.	2,627.	.1633	5280	1071 300
2	66,370	7	.292	204.9	1,082.	3,045.	.1658	2,361.	2,689.	.1649	5280	1082 300
1	83,690	7	.328	258.4	1,364.	3,804.	.1315	2,958.	3,372.	.1308	8000	2050 300
1/0	105,500	7	.368	325.7	1,720.	4,752.	.1043	3,703	4,227.	.1037	8000	2600 300
2/0	133,100	7	.414	410.9	2,170.	5,926.	.08265	4,641.	5,299.	.08223	5280	2170 300
3/0	167,800	7	.464	518.1	2,736.	7,366.	.06556	5,812.	6,642.	.06522	5280	2736 300
3/0	167,800	12	.492	518.1	2,736.	7,556.	.06556	5,890.	6,721.	.06522	5280	2736 300
4/0	211,600	7	.522	653.3	3,450.	9,154.	.05199	7,269.	8,325.	.05172	5280	3450 300
4/0	211,600	12	.552	653.3	3,450.	9,483.	.05199	7,378.	8,425.	.05172	5280	3450 300
4/0	211,600	19	.528	653.3	3,450.	9,617.	.05199	7,479.	8,526.	.05172	5280	3450 ...
...	250,000	12	.600	771.9	4,076.	11,130.	.04400	8,717.	9,957.	.04378	5280	4076 ...
...	250,000	19	.574	771.9	4,076.	11,360.	.04400	8,836.	10,080.	.04378	5280	4076 ...
...	300,000	12	.657	926.3	4,891.	13,170.	.03667	10,390.	11,870.	.03648	5280	4891 ...
...	300,000	19	.629	926.3	4,891.	13,510.	.03667	10,530.	12,010.	.03648	5280	4891 ...
...	350,000	12	.710	1081.	5,706.	15,140.	.03143	12,020.	13,770.	.03127	5280	5706 ...
...	350,000	19	.679	1081.	5,706.	15,590.	.03143	12,200.	13,940.	.03127	5280	5706 ...
...	400,000	19	.726	1235.	6,521.	17,560.	.02750	13,850.	15,840.	.02736	5280	6521 ...
...	450,000	19	.770	1389.	7,336.	19,750.	.02445	15,590.	17,810.	.02432	4650	6500 ...
...	500,000	19	.811	1544.	8,151.	21,950.	.02200	17,320.	19,790.	.02189	4200	6500 ...
...	500,000	37	.814	1544.	8,151.	22,510.	.02200	17,550.	20,030.	.02189	4200	6500 ...
...	600,000	37	.891	1853.	9,781.	27,020.	.01834	21,060.	24,030.	.01824	3500	6500 ...
...	700,000	37	.963	2161.	11,410.	31,170.	.01572	24,410.	27,870.	.01563	3000	6500 ...
...	750,000	37	.997	2316.	12,230.	33,400.	.01467	26,150.	29,860.	.01459	2800	6500 ...
...	800,000	37	1.029	2470.	13,040.	35,120.	.01375	27,710.	31,670.	.01368	2640	6500 ...
...	900,000	37	1.092	2779.	14,670.	39,510.	.01222	31,170.	35,630.	.01216	2300	6400 ...
...	1,000,000	37	1.151	3088.	16,300.	43,830.	.01100	34,350.	39,340.	.01094	2100	6500 ...

Basis for strength, weight, and resistance data:

Hard drawn conductors—A.S.T.M. Specifications B 1 and B 8.

Medium hard drawn conductors—A.S.T.M. Specifications B 2 and B 8.

Increments for stranded conductors (weight and resistance data): 3-wire strand—1%. 7-wire to 37-wire strand inclusive—2%.

The average resistivity of copper ordinarily furnished is somewhat lower than A.S.T.M. maximums.

When lengths are not specified, random lengths will be included. When lengths are specifically agreed upon for any item, 90 per cent of the reels shall have the specified length subject to a variation of 10% plus or minus; the remainder of the item may be shipped in random lengths of not less than 50% of the specified length.

General Cable Hard Drawn Bare Copper Conductors

Solid Conductors

SIZE		No. Strands	Overall Diameter Inches	RESISTANCE OHMS PER MILE—88°F.						RESISTANCE OHMS PER MILE—122°F.						PHASE TO NEUTRAL REACTANCE AT 1 FOOT SEPARATION OHMS PER MILE					
A.W.G.	C.M.			D.C.	25 Cycles			50 Cycles			D. C.	25 Cycles			50 Cycles			25 Cycles	50 Cycles	60 Cycles	
					25	50	60	25	50	60		25	50	60							
2	66,370	Solid	.2576	8580	8580	8580	8580	8580	.9553	9553	9553	9553	9553	9553	9553	9553	9553	9553	2419	4838	5806
3	52,630	Solid	.2294	1 082	1 082	1 082	1 082	1 082	1.205	1.205	1.205	1.205	1.205	1.205	1.205	1.205	1.205	1.205	2478	4955	5946
4	41,740	Solid	.2043	1 364	1 364	1 364	1 364	1 364	1.519	1.519	1.519	1.519	1.519	1.519	1.519	1.519	1.519	1.519	2536	5072	6087
5	33,100	Solid	.1819	1 720	1 720	1 720	1 720	1 720	1.915	1.915	1.915	1.915	1.915	1.915	1.915	1.915	1.915	1.915	2595	5190	6228
6	26,250	Solid	.1620	2 169	2 169	2 169	2 169	2 169	2.415	2.415	2.415	2.415	2.415	2.415	2.415	2.415	2.415	2.415	2653	5307	6368
7	20,820	Solid	.1443	2 735	2 735	2 735	2 735	2 735	3.045	3.045	3.045	3.045	3.045	3.045	3.045	3.045	3.045	3.045	2712	5424	6509
8	16,510	Solid	.1285	3 449	3 449	3 449	3 449	3 449	3.840	3.840	3.840	3.840	3.840	3.840	3.840	3.840	3.840	3.840	2771	5541	6649

Stranded Conductors

...	750,000	37	.997	.07745	.07811	.08010	.08127	.08623	.08682	.08862	.08967	.1742	.3484	4180
...	700,000	37	.963	.08298	.08360	.08547	.08656	.09239	.09295	.09463	.09562	.1759	.3519	4223
...	600,000	37	.891	.09681	.09734	.09895	.09990	1.078	1.083	1.097	1.106	.1799	.3597	4317
...	500,000	37	.814	.1162	.1166	.1180	.1188	1.293	1.297	1.310	1.317	.1845	.3690	4428
...	500,000	19	.811	.1162	.1166	.1180	.1188	1.293	1.297	1.310	1.317	.1853	.3706	4447
...	450,000	19	.770	.1291	.1295	.1307	.1314	1.437	1.441	1.452	1.458	.1879	.3759	4510
...	400,000	19	.726	.1452	.1456	.1467	.1473	1.617	1.620	1.630	1.636	.1909	.3818	4582
...	350,000	19	.679	.1660	.1663	.1672	.1678	1.848	1.851	1.859	1.864	.1943	.3886	4663
...	350,000	12	.710	.1660	.1663	.1672	.1678	1.848	1.851	1.859	1.864	.1918	.3836	4604
...	300,000	19	.629	.1936	.1939	.1947	.1952	2.156	2.158	2.165	2.170	.1982	.3963	4756
...	300,000	12	.657	.1936	.1939	.1947	.1952	2.156	2.158	2.165	2.170	.1957	.3915	4698
...	250,000	19	.574	.2323	.2326	.2332	.2336	2.587	2.589	2.595	2.599	.2028	.4056	4867
...	250,000	12	.600	.2323	.2326	.2332	.2336	2.587	2.589	2.595	2.599	.2003	.4006	4808
4/0	211,600	19	.528	.2745	.2747	.2753	.2756	3.056	3.058	3.063	3.066	.2070	.4140	4968
4/0	211,600	12	.552	.2745	.2747	.2753	.2756	3.056	3.058	3.063	3.066	.2045	.4091	4909
4/0	211,600	7	.522	.2745	.2747	.2753	.2756	3.056	3.058	3.063	3.066	.2098	.4195	5034
3/0	167,800	12	.492	.3461	.3463	.3468	.3470	3.854	3.855	3.859	3.862	.2104	.4207	5049
3/0	167,800	7	.464	.3461	.3463	.3468	.3470	3.854	3.855	3.859	3.862	.2157	.4314	5177
2/0	133,100	7	.414	.4365	.4366	.4370	.4372	4.860	4.861	4.864	4.866	.2215	.4429	5315
1/0	105,500	7	.368	.5504	.5505	.5508	.5509	6.128	6.129	6.131	6.133	.2274	.4549	5458
1	83,690	7	.328	.6940	.6941	.6943	.6945	7.727	7.728	7.730	7.731	.2332	.4665	5598
2	66,370	7	.292	.8751	.8752	.8754	.8755	9.744	9.744	9.746	9.747	.2391	.4783	5739
2	66,370	3	.320	.8666	.8666	.8668	.8669	9.648	9.649	9.650	9.651	.2380	.4759	5711
3	52,630	3	.285	1.093	1.093	1.093	1.093	1.217	1.217	1.217	1.217	.2438	.4877	5852
4	41,740	3	.254	1.378	1.378	1.378	1.378	1.534	1.534	1.534	1.534	.2496	.4993	5991
5	33,100	3	.226	1.737	1.738	1.738	1.738	1.934	1.934	1.934	1.934	.2555	.5111	6133
6	26,250	3	.201	2.191	2.191	2.191	2.191	2.439	2.439	2.439	2.439	.2615	.5229	6275

Resistances based on conductivities in accordance with A.S.T.M. Specification B1.

Increments for stranded conductors: 3-wire strand, 1%; 7 to 37-wire strand inclusive, 2%.

General Cable Hard Drawn Copper Trolley Wires (97.16% I.A.C.S. Conductivity) A.S.T.M. Specification B47

Round Conductors

Nominal Conductor Size C.M. or A.W.G.	Overall Diameter Inches	AREA		NET WEIGHT, POUNDS		Tensile Strength Lb. per Sq. In.	Breaking Strength Pounds	Resistance Ohms per 1000 Ft. 68°F.	REELS	
		C.M.	Square Inches	Per 1000 Ft.	Per Mile				Feet	Net Weight Pounds
300,000	.548	300,000	.2356	908.1	4795	46,400	10,930	.03558	2640	2400
4/0	.460	211,600	.1662	640.5	3382	49,000	8,143	.05044	5280	3382
3/0	.410	168,100	.1320	508.8	2687	51,000	6,732	.06350	5280	2687
2/0	.365	133,200	.1046	403.2	2129	52,800	5,523	.08014	5280	2129
1/0	.325	105,600	.08294	319.7	1688	54,500	4,520	.1011	5280	1688

Grooved Conductors

350,000	.620	351,200	.2758	1063	5612	42,800	11,800	.03039	1250	1330
300,000	.574	299,800	.2355	907.6	4792	44,200	10,410	.03560	2640	2400
4/0	.482	212,000	.1665	641.9	3389	46,600	7,759	.05035	5280	3389
3/0	.430	167,300	.1314	506.4	2674	48,500	6,373	.06380	5280	2674
2/0	.392	137,900	.1033	417.6	2205	50,200	5,437	.07740	5280	2205
1/0	.360	105,600	.08294	319.7	1688	51,800	4,296	.1011	5280	1688

*Figure 8 Conductors

350,000	.722 x .570	350,000	.2749	1059.	5594	42,800	11,800	.03050	2640	2797
4/0	.600 x .450	211,600	.1662	640.5	3382	46,600	7,745	.05044	5280	3382
3/0	.540 x .400	168,100	.1320	508.8	2687	48,500	6,400	.06350	5280	2687
2/0	.480 x .352	133,200	.1046	403.2	2129	50,200	5,250	.08014	5280	2129
1/0	.420 x .312	105,600	.08294	319.7	1688	51,800	4,300	.1011	5280	1688

*Figure 9 Conductors, Deep Section

400,000	.750 x .5625	391,500	.3075	1185.	6257	40,500	12,450	.02726	1000	1185
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*Not at present included in A.S.T.M. Specification B47.

*For Fig. 8 and 9 wire, dimensions given are nominal height of entire section and width of lower lobe.

For 6/0 A.W.G. (336,200 c.m.) grooved or Fig. 8 will regularly be furnished in 350,000 c.m.

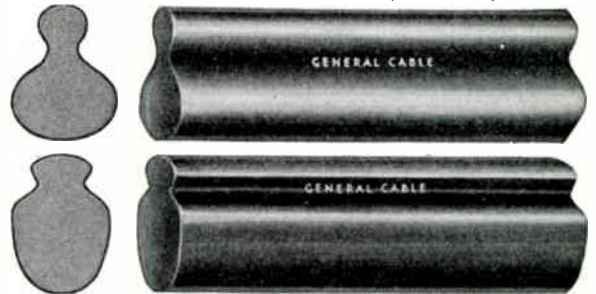
General Cable Copper Trolley Wire

In the manufacture of this wire special care is taken in rolling and drawing to obtain a surface free from imperfections and wire continually true in shape. This produces a contact wire giving maximum life and freedom from operating trouble.

Round and Grooved



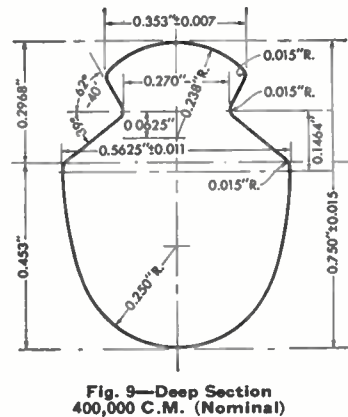
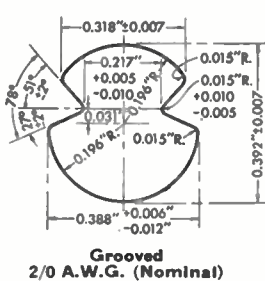
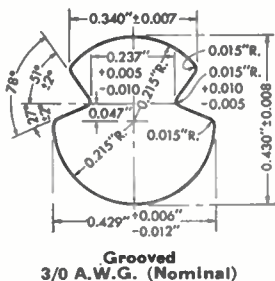
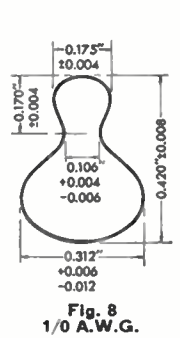
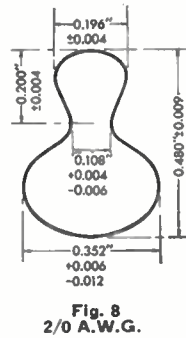
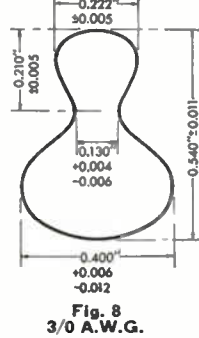
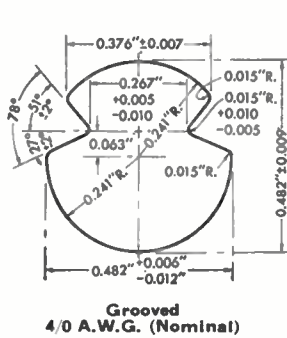
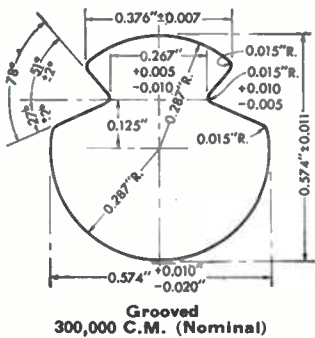
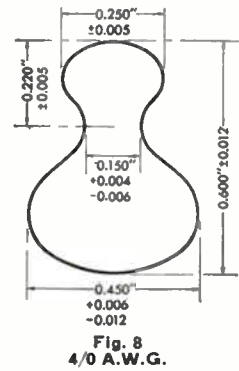
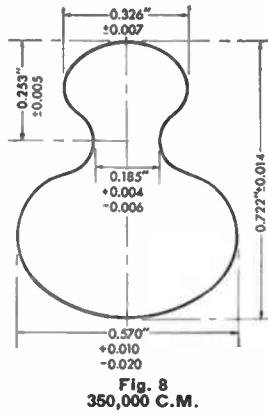
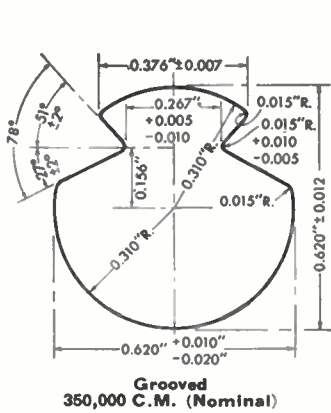
Figure 8 and Figure 9 (Deep Section)



Manufactured in accordance with American Society for Testing Materials, Specification B47 and American Transit Engineering Association Specification D2. Specifications were prepared jointly by the two associations in collaboration with Association of American Railroads and are identical.

Trolley wire of these configurations are not at present included in the specifications of the American Society of Testing Materials. These shapes conform with requirements of specifications covering round and grooved wire.

Figure 9 furnished primarily for industrial use.



General Cable Bare Cable Composite Copper-Copperweld



Type A

Composite cable unites the electrical conductance of copper with mechanical strength of copperweld. This cable is rugged and long-lived; little affected by corrosion even in unfavorable atmospheres.

Particularly adapted to long span construction or other service conditions requiring more than average strength combined with liberal conductance. For use on transmission

lines, rural distribution lines, railroad electrification, river crossings, and many kinds of special construction.

Composite cable is available in a wide range of properties and sizes. The table below shows a number of representative copper-copperweld cable sizes. Other composite cable sizes, adapted to specific requirements, can be supplied.

Equivalent Hard Drawn Copper Size C.M. or A.W.G.	Type of Conductor	CONSTRUCTION			Overall Diameter Mils	CABLE NET WEIGHT POUNDS		Breaking Strength Lb.	Resistance Ohms per 1000 Ft. 68°F.	ON REELS	
		Hard Drawn Copper	Copperweld 30% Extra High Strength	Area C.M.		Per 1000 Feet	Per Mile			Feet	Net Weight Pounds
586,800	E	12/.2043"	7/.2043"	790,800	1.020	2358	12450	50,530	.0180	1500	3540
467,100	E	12/.1819"	7/.1819"	629,500	.910	1874	9895	41,800	.0227	1900	3380
370,100	E	12/.1620"	7/.1620"	498,600	.810	1486	7846	34,240	.0286	2400	3560
292,400	E	12/.1443"	7/.1443"	394,100	.720	1173	6193	27,940	.0362	3000	3520
231,000	E	12/.1285"	7/.1285"	311,300	.640	927	4894	22,650	.0458	3800	3500
4/0	E	12/.1229"	7/.1229"	284,900	.615	848	4476	20,720	.0496	4000	3400
4/0	F	6/.1833"	1/.1833"	235,100	.550	712	3760	12,290	.0512	1850	1320
4/0	Special	7/.1697"	3/.1050"	234,700	.566	716	3781	12,810	.05123	4000	2865
250,000	Special	7/.1845"	3/.1142"	277,400	.615	846	4469	15,000	.04335	4140	3500
183,200	E	12/.1144"	7/.1144"	247,000	.570	736	3886	18,400	.0578	4800	3540
3/0	E	12/.1091"	7/.1091"	226,100	.545	672	3748	16,800	.0646	5280	3748
3/0	F	6/.1631"	1/.1631"	186,400	.489	563	2973	9,970	.0632	2400	1360
146,700	E	12/.1019"	7/.1019"	197,600	.510	589	3110	14,920	.0721	6000	3525
2/0	F	6/.1454"	1/.1454"	147,900	.436	447	2359	8,090	.0814	3000	1340
1/0	F	6/.1294"	1/.1294"	117,200	.388	354	1870	6,536	.103	3800	1340
1	F	6/.1152"	1/.1152"	92,990	.346	280	1481	5,260	.129	4750	1320
2	F	6/.1026"	1/.1026"	73,740	.308	223	1175	4,230	.163	6000	1340
2	A	2/.1699"	1/.1699"	86,570	.366	256.8	1356	5,876	.1641	2300	600
3	A	2/.1513"	1/.1513"	68,660	.326	203.6	1075	4,810	.2070	3000	600
4	A	2/.1347"	1/.1347"	54,440	.290	161.5	852.8	3,938	.2610	3800	600
5	A	2/.1200"	1/.1200"	43,170	.258	128.1	676.3	3,193	.3291	4800	600
6	A	2/.1068"	1/.1068"	34,240	.230	101.6	536.3	2,585	.4150	6000	600
7	A	2/.0895"	1/.1266"	32,200	.223	93.66	494.6	2,754	.5232	4200	400
8	A	2/.0797"	1/.1127"	25,500	.199	74.27	392.2	2,233	.6598	5400	400
8	C	2/.08336"	1/.08081"	20,430	.179	60.67	320.3	1,362	.6598	8200	500
9 1/2	D	1/.08081"	2/.08081"	19,590	.174	56.46	298.1	1,743	.9170	8900	500

Copperweld

11	3 No. 12	3/.08081"	19,590	.174	54.80	289.3	2,040	1.361	9100	500
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Type Conductor	No. Strands	Moduli (Conventional) Lb. per Sq. In.	Coefficients of Linear Expansion per Degree F.
E	19	19,000,000	.0000084
F	7	17,000,000	.0000089
2A to 6A	3	19,000,000	.0000085
7A to 8A	3	21,000,000	.0000081
Special	10	16,500,000	.0000090
C	3	19,000,000	.0000085
D	3	22,000,000	.0000078
3 No. 12	3	24,000,000	.0000072

TYPE E. Consists of 7-strand concentric stranded core of Copperweld and outer layer of twelve copper strands.

TYPE F. Consists of inner strand Copperweld and outer layer of six copper strands.

TYPE A. Consists of three wires cabled together, two of hard drawn copper and one of extra high strength Copperweld.

SPECIAL. Consists of three Copperweld wires cabled together as a core covered by seven copper wires.

Ninety per cent of the reels in any shipment shall have an average length of conductor not less than the values shown in the above table, with no lengths more than 10% below the value given. The remaining 10% of the reels (or one reel where total number of reels is less than 10) may be in random lengths, but no such lengths shall be less than 50% of the table value.

General Cable Weatherproof Wire and Cable

With Solid Copperweld Conductors

Size on A.W.G. Reel	No. Ft. in Coil	Triple-Braided NET WEIGHT, POUNDS				Double-Braided NET WEIGHT, POUNDS			
		Per 1000 Feet	Per Mile	Per Reel	Per Coil	Per 1000 Feet	Per Mile	Per Reel	Per Coil
2	1000	243	1233	243	243	222	1172	222	222
4	1560	154	813	240	240	141	744	220	220
6	2450	106	560	262	262	94	496	230	230
8	3950	71	375	280	140	62	327	246	123
9	5000	58	306	288	144	51	269	256	128
10	6200	51	269	316	158	43	227	266	133
12	9800	33	174	325	65	28	148	275	55

Sizes 8 to 12 A.W.G. inclusive also supplied in 100-pound bundles of four coils each weighing approximately 25 pounds.

With Solid Bronze Conductors

Unit weights and standard package data, for both triple and double braided weatherproof wire with solid bronze

conductors, are the same as for weatherproof wire with solid copper conductors.

With Composite Copper-Copperweld Conductors

Conductor No.	No. Ft. on Reel	Triple-Braided NET WEIGHT, POUNDS				Double-Braided NET WEIGHT, POUNDS				
		Per 1000 Feet	Per Mile	Per Reel	Per Coil	Per 1000 Feet	Per Mile	Per Reel	Per Coil	
2A	1150	460	356	1380	409	164	321	1695	369	148
3A	1500	500	291	1537	437	146	261	1379	392	131
4A	1900	633	224	1184	426	142	202	1068	384	128
5A	2400	800	187	988	449	150	166	878	399	133
6A	3000	1000	141	746	424	141	127	672	382	127
7A	2100	1050	133	704	280	140	119	630	251	125
8A	2700	1350	112	591	302	151	99	522	267	134

Tabulated reel and coil lengths are approximate average amounts; variations of 10% plus or minus may be expected and random lengths will be included but these random lengths shall not be less than 50% of the tabulated lengths nor shall they constitute more than 10% of any shipment.

General Cable Weatherproof Wire and Cable



Peerless[®]-URC Triple or Double Braid Equivalent



"O.K.-URC" Triple Braid



"O.K.-URC" Double Braid

With Stranded Copper Conductors

Size A.W.G.	No. Feet on Reel	Triple-Braided N _{TR}			Double-Braided N _{TR}		
		WEIGHT, POUNDS			WEIGHT, POUNDS		
		Per 1000 Feet	Per Mile	Per Reel	Per 1000 Feet	Per Mile	Per Reel
8	4000	78	410	312	68	359	272
6	3000	115	610	345	103	544	309
5	2000	140	740	280	126	668	252
4	2000	170	900	340	155	820	310
3	1500	206	1090	309	190	1004	285
2	1250	270	1425	338	246	1301	308
1	1000	328	1735	328	303	1599	303
1/0	4000	424	2240	1700	388	2051	1552
2/0	3500	522	2760	1830	482	2544	1687
3/0	3000	653	3450	1960	604	3190	1812
4/0	2500	800	4220	2000	745	3935	1863
C.M.							
250,000	2500	985	5200	2460	907	4788	2268
300,000	2000	1174	6200	2350	1083	5721	2166
350,000	2000	1345	7100	2690	1248	6589	2496
400,000	2000	1553	8200	3106	1436	7584	2872
450,000	2000	1724	9100	3448	1601	8452	3202
500,000	2000	1894	10000	3788	1765	9318	3530
600,000	1500	2235	11800	3340	2093	11052	3140
700,000	1200	2650	14000	3180	2471	13045	2965
750,000	1100	2822	14900	3104	2635	13913	2899
800,000	1000	2992	15800	2992	2799	14779	2799
900,000	1000	3332	17600	3332	3127	16513	3127
1,000,000	900	3674	19400	3300	3456	18246	3110
1,250,000	800	4508	23800	3606	4264	22516	3411
1,500,000	700	5380	28400	3766	5098	26915	3569
1,750,000	600	6193	32700	3716	5894	31119	3536
2,000,000	500	7008	37000	3504	6690	35323	3345

With Solid Copper Conductors

Size A.W.G.	No. Ft. on Reel	No. Ft. in Coil	Triple-Braided N _{TR}				Double-Braided N _{TR}			
			WEIGHT, POUNDS				WEIGHT, POUNDS			
			Per 1000 Feet	Per Mile	Per Reel	Per Coil	Per 1000 Feet	Per Mile	Per Reel	Per Coil
14	....	4000	25	130	....	100	20	107	....
12	....	2850	35	185	....	100	30	158	....
10	6400	3970	53	280	340	210	46	241	295	180
9	6300	3150	62	325	390	195	54	283	340	170
8	5000	2500	75	395	370	185	66	349	330	165
6	3150	1575	112	590	350	175	100	529	315	160
5	2000	1260	135	710	270	170	122	646	244	154
4	1980	990	164	865	320	160	151	795	295	150
3	1600	755	199	1050	320	160	185	977	295	150
2	1240	620	260	1370	320	160	239	1264	295	150
1	990	495	316	1670	310	155	294	1553	290	145
1/0	4000	....	407	2150	1630	....	377	1989	1508	....
2/0	3500	....	502	2650	1760	....	467	2467	1635	....
3/0	3000	....	629	3320	1890	....	587	3098	1761	....
4/0	2500	....	767	4050	1920	....	723	3817	1808	....

*Trade-mark.

Sizes 8 to 14 A.W.G. inclusive also supplied in 100-pound bundles of four coils each weighing approximately 25 pounds.

General Cable Super Service* Cable

Single Conductor—600 Volts



Designed for general portable power supply service whenever a heavy duty flexible cable is required. Specific uses, especially in the smaller conductor sizes, are for gathering reel locomotives in mines. For motor lead use, this cable can be supplied with a paper separator over the conductor.

Size A.W.G.	CONDUCTORS Con- struction	Diam. In.	Current Carry- ing Cap. Amp.	Insu- lation Thick- ness In.	Over- all Diam. In.	SHIPPING WEIGHT, POUNDS			
						COILS			
						250 Feet	500 Feet	500 Feet	1000 Feet
8	49/#25	.161	45	3/64	.400	29	58	86	166
8	133/#29	.169	45	3/64	.400	30	59	87	170
6	49/#23	.203	60	3/64	.500	45	91	143	244
6	133/#27	.213	60	3/64	.500	45	90	142	240
5	49/#22	.228	70	3/64	.562	58	115	170	285
5	133/#26	.238	70	3/64	.562	59	118	170	292
4	49/#21	.256	85	3/64	.562	61	122	175	308
4	133/#25	.268	85	3/64	.562	62	123	175	308
3	49/#20	.288	95	3/64	.625	72	143	208	359
3	133/#24	.302	95	3/64	.625	77	153	218	367
2	133/#23	.339	110	3/64	.675	93	185	250	483
2	259/#26	.335	110	3/64	.675	91	182	250	483
1	133/#22	.380	130	3/64	.75	103	206	272	500
1	259/#25	.376	130	3/64	.75	107	214	274	507
1/0	133/#21	.427	150	3/64	.75	125	250	320	595
1/0	259/#24	.422	150	3/64	.75	125	250	320	595
2/0	133/#20	.479	175	3/64	.80	152	304	372	895
2/0	259/#23	.474	175	3/64	.80	152	304	372	895
3/0	259/#22	.532	205	3/64	.90	186	372	440	1025
3/0	427/#24	.543	205	3/64	.90	186	372	440	1025
4/0	259/#21	.598	235	3/64	.95	225	450	537	1180
4/0	427/#23	.610	235	3/64	.95	225	450	537	1180
C.M.									
250,000	259/.0312"	.655	240	3/64	1.05	....	....	720	1305
250,000	427/.0243"	.656	240	3/64	1.05	....	....	720	1305
300,000	259/.034"	.714	275	3/64	1.10	....	....	800	1480
300,000	427/.0265"	.716	275	3/64	1.10	....	....	800	1480
350,000	259/.037"	.777	300	3/64	1.15	....	....	880	1640
350,000	427/.0285"	.770	300	3/64	1.15	....	....	880	1640
400,000	259/.0395"	.830	325	3/64	1.20	....	....	990	1890
400,000	427/.0312"	.842	325	3/64	1.20	....	....	990	1890
450,000	259/.042"	.882	370	3/64	1.25	....	....	1080	2020
450,000	427/.032"	.864	370	3/64	1.25	....	....	1080	2020
500,000	259/.044"	.924	400	3/64	1.30	....	....	1200	2260
500,000	427/.035"	.945	400	3/64	1.30	....	....	1200	2260
550,000	259/.046"	.966	425	3/64	1.40	....	....	1310	2470
550,000	427/.036"	.972	425	3/64	1.40	....	....	1310	2470
600,000	259/.048"	1.008	450	3/64	1.50	....	....	1440	2832
600,000	427/.038"	1.026	450	3/64	1.50	....	....	1440	2832
650,000	259/.0508"	1.066	475	3/64	1.50	....	....	1505	2962
650,000	427/.039"	1.053	475	3/64	1.50	....	....	1505	2962
700,000	427/.0403"	1.088	500	3/64	1.60	....	....	1610	3172
700,000	637/.033"	1.089	500	3/64	1.60	....	....	1610	3172
750,000	427/.042"	1.134	525	3/64	1.60	....	....	1680	3312
750,000	637/.034"	1.122	525	3/64	1.60	....	....	1680	3312

*Trade-mark.

Sizes 4, 3, and 2 A.W.G. single-conductor cable are made with a spider web braid of heavy single end cotton between inner insulating rubber and outer jacket to serve the special requirements of cables used on gathering reel locomotives in coal mines. All other sizes have helical winds.

General Cable Super Service* Welding Cable



This cable possesses an overall Super 6-T protective jacket of exceedingly tough, resilient 60% rubber compound especially designed to withstand severe service and yet remain flexible. Complies with N.E.M.A. standard requirements.

Exceptional flexibility is obtained by the use of a large number of extremely fine bare copper wires, rope stranded.

Coils easily, lies flat, does not kink or tangle. May be dragged through puddles and subjected to all kinds of hard usage in damp places.

CONDUCTORS		Diam. In.	Over-all Diam. In.	NEMA CABLE RATINGS			SHIPPING WEIGHT	
Size A.W.G.	Construction			Current Carrying Cap. Amp.	Volts per 1000 Ft.	Net Wt. per 1000 Ft.	500-Ft. Reels	1000-Ft. Reels
4	7x { 1x 28/#35 6x 27/#35 }	.300	.500	100	3.18	211	166	292
	2	7x { 1x 35/#34 6x 34/#34 }	.375	.562	200	3.92	295	208	354
1	7x { 1x 44/#34 6x 43/#34 }	.415	.625	250	3.88	379	250	432
	1/0	7x { 1x 56/#34 6x 54/#34 }	.460	.675	300	3.72	459	290	558
2/0	7x { 1x 71/#34 6x 68/#34 }	.520	.750	375	3.68	567	344	668
	3/0	7x { 1x 88/#34 6x 86/#34 }	.575	.850	450	3.51	729	425	950
4/0	7x { 1x114/#34 6x108/#34 }	.630	.900	550	3.41	883	502	1088

*Trade-mark.

The above values for carrying capacity are based on a copper temperature of 60°C. and an ambient temperature of 40°C. and yield load factors of from approximately 32% for 2 A.W.G. cable to approximately 23% for 3 A.W.G. cable, and higher for the smaller sizes. The sizes of cable used range from 2 to 3/0 A.W.G. In actual service the load factor may be much higher without overheating the cable as the ambient temperature will generally be substantially lower than 40°C.

The sizes of cable recommended by the Machine Group of the N.E.M.A. Electric Welding Section for standard hand welding equipment based on lengths up to 90 feet, that is, 45 feet of welding cable and 45 feet of return cable, are as follows:

Welder.....	100	200	300	400	600
Cable No.....	2	2	1/0	2/0	3/0

General Cable Super Service* Grounding Cable



Extensively used for temporary grounding of transmission lines of all voltages to 132,000 volts.

Ground clamp with cable attached is hooked on the line by means of a grounding stick, the other end having previously been connected to ground by clamping to transmission tower or when working on a pole, to any temporary ground connection available. This cable is also used in generating stations and substations for grounding apparatus during repairs.

CONDUCTORS		Diam. In.	Current Carrying Cap. Amp.	Net Wt. per 1000 Ft. Lb.	SHIPPING WEIGHTS			
Size A.W.G.	Construction				250-Ft. Coils	500-Ft. Reels	1000-Ft. Reels	
6	133/#27	.213	60	.625	225	57	180	290
4	133/#25	.268	85	.675	289	73	210	400
3	133/#24	.302	95	.750	359	90	245	470
2	133/#23	.339	110	.750	395	99	265	505
1	133/#22	.380	130	.800	479	120	305	730
1/0	259/#24	.422	150	.850	545	137	388	795
2/0	259/#23	.474	175	.900	650	188	490	900
3/0	259/#22	.532	205	1.000	809	203	520	1060
4/0	259/#21	.598	235	1.050	959	240	595	1320

*Trade-mark.

General Cable Super Service* Mining Machine Cable

2-Conductor Concentric Type—600 Volts



Used almost exclusively in mines on cutting machines and locomotives and are designed to have maximum flexibility for this type of cable. Manufactured in sizes 6 to 4/0 A.W.G. inclusive.

Central conductor is insulated with 40% rubber over which is applied a rubber-filled tape. The concentric wires, having conductivity equal to the central conductor, are laid helically, to provide full coverage over the insulated and taped inner conductor. The core thus formed is then covered with a layer of 40% insulating rubber which adheres strongly to the concentric strands. There is then applied a spider web braid of heavy single end cotton, and finally, a heavy Super Service (Super 6-T) jacket overall.

CONDUCTORS			Current Carrying Cap. Amp.	Insulation Thickness In.	Concentric Conductor Construction	Over-all Diam. In.	Net Wt. per 1000 Feet Lb.	SHIPPING WEIGHT, POUNDS		
Size A.W.G.	Construction	Diam. In.						250-Ft. Coils	500-Ft. Reels	1000-Ft. Reels
6	49/#23	.203	50	5/64	40/#22	.75	396	98	255	468
6	133/#27	.213	50	5/64	40/#22	.75	396	98	255	468
4	49/#21	.256	65	5/64	40/#20	.85	550	138	351	746
4	133/#25	.268	65	5/64	40/#20	.85	550	138	351	746
3	49/#20	.288	75	5/64	40/#19	.90	620	155	396	836
3	133/#24	.302	75	5/64	40/#19	.90	620	155	396	836
2	133/#23	.339	90	5/64	40/#18	.95	756	188	458	966
2	259/#26	.335	90	5/64	40/#18	.95	756	188	458	966
1	133/#22	.380	100	5/64	40/#17	1.00	890	222	531	1140
1	259/#25	.376	100	5/64	40/#17	1.00	890	222	531	1140

Cables of larger sizes, up to and including 4/0 A.W.G., can also be supplied.

2-Conductor Parallel Duplex Type—600 Volts



Made in conformity with requirements of U. S. Bureau of Mines for use on explosion-proof equipment. Used in mines on cutting machines, as a battery charging cable, and for other general uses requiring a 2-conductor all-rubber cable.

Insulated with 40% rubber compound. Identified by rubber of different colors, i.e., black and white. Conductors are laid parallel with rubber fillers in lateral interstices, and covered with a sheath of 60% Super Service (Super 6-T) rubber. A strong reinforcing cord directly under jacket strengthens cable and opposes kinking.

Easy to splice.

Conductors are enclosed in and surrounded by a solid compact mass of rubber which prevents kinking.

CONDUCTORS			Current Carrying Cap. Amp.	Insulation Thickness In.	Over-all Diam. In.	Net Wt. per 1000 Feet Lb.	SHIPPING WEIGHT, POUNDS			
Size A.W.G.	Construction	Diam. In.					250-Ft. Coils	500-Ft. Reels	1000-Ft. Reels	
8	49/#25	.161	40	5/64	.531x	.812	275	69	197	355
8	133/#29	.169	40	5/64	.531x	.812	275	69	197	355
6	49/#23	.203	50	5/64	.575x	.950	380	95	250	456
6	133/#27	.213	50	5/64	.575x	.950	380	95	250	456
4	49/#21	.256	70	5/64	.625x1.000	510	128	334	712	1240
4	133/#25	.268	70	5/64	.625x1.000	535	134	345	740	1240
3	49/#20	.288	80	5/64	.675x1.109	636	159	397	838	1320
3	133/#24	.302	80	5/64	.675x1.109	636	159	397	838	1320
2	133/#23	.339	95	5/64	.750x1.250	790	197	474	992	1560
2	259/#26	.335	95	5/64	.750x1.250	790	197	474	992	1560
1	133/#22	.380	110	5/64	.812x1.421	992	248	590	1280	2040
1	259/#25	.376	110	5/64	.812x1.421	992	248	590	1280	2040

*Trade-mark.

Overall diameters suitable for standard fittings within U. S. Bureau of Mines permissible clearances.

General Cable Super Service* Cable

2-Conductor Round Type—600 Volts

Used for general power supply purposes for motors and various types of portable equipment.



Size A.W.G.	CONDUCTORS		Diam. In.	Cur- rent Carry- ing Cap. Amp.	Insu- lation Thick- ness In.	Over- all Diam. In.	Net Wt. Lb. per 1000 Ft.	SHIPPING WEIGHT, POUNDS		
	Con- struc- tion	Diam. In.						250-Ft. Coils	500-Ft. Reels	1000-Ft. Reels
8	49/#25	.161	40	4/64	.85	355	90	260	575	
8	133/#29	.169	40	4/64	.85	360	90	265	580	
6	49/#23	.203	50	4/64	.95	480	120	325	700	
6	133/#27	.213	50	4/64	.95	490	123	330	710	
4	49/#21	.256	70	4/64	1.10	675	169	557	1070	
4	133/#25	.268	70	4/64	1.15	735	184	587	1135	
3	49/#20	.288	80	4/64	1.25	885	222	662	1285	
3	133/#24	.302	80	4/64	1.25	895	222	662	1285	
2	133/#23	.339	95	4/64	1.30	1000	250	780	1400	
2	259/#26	.335	95	4/64	1.30	1000	250	780	1400	
1	133/#22	.380	110	5/64	1.50	1300	325	1050	1750	
1	259/#25	.376	110	5/64	1.50	1300	325	1050	1750	

3-Conductor—600 Volts



Size A.W.G.	CONDUCTORS		Diam. In.	Cur- rent Carry- ing Cap. Amp.	Insu- lation Thick- ness In.	Over- all Diam. In.	Net Wt. Lb. per 1000 Ft.	SHIPPING WEIGHT, POUNDS			Ground Wire Con- struction	Add. Cable Wt. Lb. per 1000 Ft.
	Con- struc- tion	Diam. In.						500-Ft. Reels	1000-Ft. Reels	1000-Ft. Reels		
8	49/#25	.161	35	4/64	.95	485	325	700	3x	49/#31	40	
8	133/#29	.169	35	4/64	.95	500	335	720	3x	49/#31	40	
6	49/#23	.203	50	4/64	1.10	700	570	1100	3x	49/#29	60	
6	133/#27	.213	50	4/64	1.10	710	575	1110	3x	49/#29	60	
4	49/#21	.256	65	4/64	1.20	910	675	1300	3x133/#31	100		
4	133/#25	.268	65	4/64	1.20	935	687	1335	3x133/#31	100		
3	49/#20	.288	75	4/64	1.30	1120	840	1520	3x133/#30	125		
3	133/#24	.302	75	4/64	1.30	1120	840	1520	3x133/#30	125		
2	133/#23	.339	90	4/64	1.40	1345	950	1745	3x133/#29	155		
2	259/#26	.335	90	4/64	1.40	1345	950	1745	3x133/#29	155		
1	133/#22	.380	100	5/64	1.60	1700	1250	2150	3x133/#28	195		
1	259/#25	.376	100	5/64	1.60	1700	1250	2150	3x133/#28	195		



1/0	133/#21	.427	130	5/64	1.60	1520	...	1160	1970
1/0	259/#24	.422	130	5/64	1.60	1520	...	1160	1970
2/0	133/#20	.479	150	5/64	1.70	1810	...	1305	2260
2/0	259/#23	.474	150	5/64	1.70	1810	...	1305	2260
3/0	259/#22	.532	175	5/64	1.80	2120	...	1460	2570
3/0	427/#24	.543	175	5/64	1.80	2120	...	1460	2570
4/0	259/#21	.598	200	5/64	2.00	2630	...	1765	3285
4/0	427/#23	.610	200	5/64	2.00	2630	...	1765	3285



1/0	133/#21	.427	120	5/64	1.70	1990	1395	2440	3x133/#27	250
1/0	259/#24	.422	120	5/64	1.70	1990	1395	2440	3x133/#27	250
2/0	133/#20	.479	135	5/64	1.80	2385	1592	2820	3x133/#26	315
2/0	259/#23	.474	135	5/64	1.80	2385	1592	2820	3x133/#26	315
3/0	259/#22	.532	155	5/64	2.00	2840	1870	3490	3x133/#25	395
3/0	427/#24	.543	155	5/64	2.00	2840	1870	3490	3x133/#25	395
4/0	259/#21	.598	180	5/64	2.10	3480	2190	4130	3x133/#24	495
4/0	427/#23	.610	180	5/64	2.10	3480	2190	4130	3x133/#24	495

For Type G cables, weights can be approximated by using the last column for adjustment.

4-Conductor—600 Volts



Size A.W.G.	CONDUCTORS		Diam. In.	Cur- rent Carry- ing Cap. Amp.	Insu- lation Thick- ness In.	Over- all Diam. In.	TYPE W Without Ground Wires			TYPE G With Ground Wires	
	Con- struc- tion	Diam. In.					Net Wt. Lb. per 1000 Ft.	SHIPPING WEIGHT POUNDS 500-Ft. 1000-Ft.		Ground Wire Con- struction	Add. Cable Wt. Lb. per 1000 Ft.
8	49/#25	.161	30	4/64	1.05	610	525	1000	4x	49/#32	35
8	133/#29	.169	30	4/64	1.10	650	545	1050	4x	49/#32	35
6	49/#23	.203	40	4/64	1.15	800	620	1200	4x	49/#30	55
6	133/#27	.213	40	4/64	1.20	860	650	1260	4x	49/#30	55
4	49/#21	.256	55	4/64	1.30	1100	770	1500	4x	49/#28	90
4	133/#25	.268	55	4/64	1.40	1240	900	1640	4x	49/#28	90
3	49/#20	.288	65	4/64	1.50	1475	1137	1925	4x133/#31	120	
3	133/#24	.302	65	4/64	1.50	1475	1137	1925	4x133/#31	120	
2	133/#23	.339	75	4/64	1.60	1740	1270	2190	4x133/#30	150	
2	259/#26	.335	75	4/64	1.60	1740	1270	2190	4x133/#30	150	
1	133/#22	.380	85	5/64	1.80	2160	1480	2610	4x133/#29	190	
1	259/#25	.376	85	5/64	1.80	2160	1480	2610	4x133/#29	190	



Size A.W.G.	CONDUCTORS		Diam. In.	Cur- rent Carry- ing Cap. Amp.	Insu- lation Thick- ness In.	Over- all Diam. In.	TYPE W Without Ground Wires			TYPE G With Ground Wires	
	Con- struc- tion	Diam. In.					Net Wt. Lb. per 1000 Ft.	SHIPPING WEIGHT POUNDS 500-Ft. 1000-Ft.		Ground Wire Con- struction	Add. Cable Wt. Lb. per 1000 Ft.
1/0	133/#21	.427	100	5/64	1.90	2540	1670	2990	4x133/#28	240	
1/0	259/#24	.422	100	5/64	1.90	2540	1670	2990	4x133/#28	240	
2/0	133/#20	.479	115	5/64	2.00	2985	1942	3630	4x133/#27	300	
2/0	259/#23	.474	115	5/64	2.00	2985	1942	3630	4x133/#27	300	
3/0	259/#22	.532	130	5/64	2.20	3695	2300	4345	4x133/#26	380	
3/0	427/#24	.543	130	5/64	2.20	3695	2300	4345	4x133/#26	380	
4/0	259/#21	.598	150	5/64	2.40	4510	2730	5160	4x133/#25	480	
4/0	427/#23	.610	150	5/64	2.40	4510	2730	5160	4x133/#25	480	

For Type G cables, weights can be approximated by using the last column for adjustment.

*Trade-mark.

General Cable Super Service* High-voltage Cable

SUPER SERVICE high-voltage portable power cables are designed for a wide variety of purposes. In general their use covers both transmission of power from the supply to the portable equipment and distribution of that power to the electrical machines or control devices which are installed in or on the equipment.

The principal use of SUPER SERVICE portable power cables is to convey energy for electrically operated shovels, dredges, cranes, etc., where arduous service and safety must combine for uninterrupted production and long cable life.

Further use of SUPER SERVICE high-voltage cables of this type is found wherever both high voltage and portability are required, such as in construction work and for temporary or emergency power transfer in central stations and substations during equipment repairs and alterations. SUPER SERVICE cables are available for operating voltages up to and including 13,000 volts, in single and multi-conductor form, and in a wide range of conductor sizes.

When unusual service conditions are encountered it is highly desirable that all requirements be known before attempting to select the proper type of SUPER SERVICE cable to use. General Cable engineers are prepared to submit recommendations and to furnish full information on modifications.

There are three general types of SUPER SERVICE high-voltage cables. These are:

- TYPE W, without ground wires.
- TYPE G, with ground wires.
- TYPE SH (shielded) with or without ground wires.

Type W—(Without Ground Wires)

This cable is not recommended for service exceeding 2500 volts, although it can be furnished for higher voltages. Even at 2500 volts, special precautions should be used in the handling of the cable to minimize hazard of shock to workmen.

Has heavy walls of insulation and jacket.

Type G—(With Ground Wires)

The same construction as Type W except that it has a flexible ground wire in each filler space. While cables operating above 2500 volts should preferably be shielded, the ground wires in Type G cables in effect provide some shielding and afford a certain degree of protection to operators when the wires are grounded at both ends of the cable length. In some instances Type G cables have proved satisfactory at 5000 volts. The ground wires are normally of tinned copper strands covered with a cushioning cotton braid. If desired, ground wires composed of tinned steel strands can be supplied in place of copper.

Type SH—(Shielded—With or Without Ground Wires)

Similar to Types W and G, as previously described, except for the addition of shielding braids, and are recommended for all operating voltages above 2500 volts. These cables are classified in four groups as follows:

Type	Ground Wires	Shielding
SH-A	Without	On Each Conductor
SH-B	Without	Over Cabled Conductors
SH-C	With	Over Cabled Conductors
SH-D	With	On Each Conductor

Shielding braids over the assembled conductors confine the voltage stress within the core of the cable. When applied over the separate conductors, shielding confines the stress to the individual conductor insulations, eliminating corona and the attendant formation of ozone which is deleterious to rubber. Shielding braids, properly grounded, afford protection to the cable and to the operator.

The preferred shield consists of a combination copper-cotton braid with the tinned copper wires running in a direction opposite to the lay of the cable, and the cotton threads running in the same direction as the lay of the cable. An all-copper shielding braid can be furnished if desired but the combination shield has been found to give better service in cables subjected to repeated flexing.

It is considered good practice to employ ground wires in all shielded high-voltage portable cables. These ground wires are normally uninsulated to permit electrical contact with the shielding braids.

For operating voltages up to 6000 volts, a shield over the assembled conductors with the use of ground wires (Type SH-C) is generally recommended. For voltages over 6000 volts, shielding over the individual conductors with the use of ground wires (Type SH-D) is recommended.

*Trade-mark.

General Cable Super Service* High-voltage Cable

Type G—2001-3000 Volts—With Ground Wires



3-Conductor

Size A.W.G.	CONDUCTORS		Current Carrying Cap. Amp.	Insulation Thickness In.	Ground Wire Construction	Overall Diam. In.	SHIPPING WEIGHT POUNDS		Deduction in Wt. Lb. per 1000 Feet for Type W
	Con-struction	Diam.					500- Foot Reels	1000- Foot Reels	
8	49/#25	.161	35	7/64	3x 49/#31	1.20	607	1175	40
8	133/#29	.169	35	7/64	3x 49/#31	1.20	612	1185	40
6	49/#23	.203	50	8/64	3x 49/#29	1.40	770	1500	60
6	133/#27	.213	50	8/64	3x 49/#29	1.40	775	1510	60
4	49/#21	.256	65	8/64	3x133/#31	1.50	1085	1820	100
4	133/#25	.268	65	8/64	3x133/#31	1.60	1155	1960	100
2	133/#23	.339	90	8/64	3x133/#29	1.70	1350	2340	155
2	259/#26	.335	90	8/64	3x133/#29	1.70	1350	2340	155
1	133/#22	.380	100	8/64	3x133/#28	1.90	1590	2830	195
1	259/#25	.376	100	8/64	3x133/#28	1.90	1590	2830	195
1/0	133/#21	.427	120	8/64	3x133/#27	2.00	1770	3390	250
1/0	259/#24	.422	120	8/64	3x133/#27	2.00	1770	3390	250
2/0	133/#20	.479	135	8/64	3x133/#26	2.10	2065	3880	315
2/0	259/#23	.474	135	8/64	3x133/#26	2.10	2065	3880	315
3/0	259/#22	.532	155	8/64	3x133/#25	2.20	2320	4390	395
3/0	427/#24	.543	155	8/64	3x133/#25	2.20	2320	4390	395
4/0	259/#21	.598	180	8/64	3x133/#24	2.40	2725	5200	495
4/0	427/#23	.610	180	8/64	3x133/#24	2.40	2720	5240	495

4-Conductor

8	49/#25	.161	30	7/64	4x 49/#32	1.40	720	1400	35
8	133/#29	.169	30	7/64	4x 49/#32	1.40	725	1410	35
6	49/#23	.203	40	8/64	4x 49/#30	1.60	1082	1815	55
6	133/#27	.213	40	8/64	4x 49/#30	1.60	1095	1830	55
4	49/#21	.256	55	8/64	4x 49/#28	1.70	1245	2140	90
4	133/#25	.268	55	8/64	4x 49/#28	1.70	1260	2170	90
2	133/#23	.339	75	8/64	4x133/#30	1.90	1618	2785	150
2	259/#26	.335	75	8/64	4x133/#30	1.90	1618	2785	150
1	133/#22	.380	85	8/64	4x133/#29	2.00	1810	3370	190
1	259/#25	.376	85	8/64	4x133/#29	2.00	1810	3370	190
1/0	133/#21	.427	100	8/64	4x133/#28	2.10	2020	3785	240
1/0	259/#24	.422	100	8/64	4x133/#28	2.10	2020	3785	240
2/0	133/#20	.479	115	8/64	4x133/#27	2.30	2395	4490	300
2/0	259/#23	.474	115	8/64	4x133/#27	2.30	2395	4490	300
3/0	259/#22	.532	130	8/64	4x133/#26	2.40	2710	5120	380
3/0	427/#24	.543	130	8/64	4x133/#26	2.40	2697	5095	380

Rubber-sheathed portable cable molded in lead, having larger diameters or diameters other than those listed above, can also be furnished.

For Type W cables, weights can be approximated by using the last column for adjustment.

3-Conductor

Type G—3001-4000 Volts—With Ground Wires

8	49/#25	.161	35	9/64	3x 49/#31	1.40	777	1395	...
8	133/#29	.169	35	9/64	3x 49/#31	1.40	775	1390	...
6	49/#23	.203	50	9/64	3x 49/#29	1.50	1007	1665	...
6	133/#27	.213	50	9/64	3x 49/#29	1.50	1017	1685	...
4	49/#21	.256	65	9/64	3x133/#31	1.60	1100	1950	...
4	133/#25	.268	65	9/64	3x133/#31	1.60	1162	1975	...
2	133/#23	.339	90	9/64	3x133/#29	1.80	1430	2510	...
2	259/#26	.335	90	9/64	3x133/#29	1.80	1430	2510	...
1	133/#22	.380	100	9/64	3x133/#28	1.90	1650	2850	...
1	259/#25	.376	100	9/64	3x133/#28	1.90	1650	2850	...
1/0	133/#21	.427	120	9/64	3x133/#27	2.00	1825	3350	...
1/0	259/#24	.422	120	9/64	3x133/#27	2.00	1825	3350	...
2/0	133/#20	.479	135	9/64	3x133/#26	2.10	2060	3870	...
2/0	259/#23	.474	135	9/64	3x133/#26	2.10	2060	3870	...
3/0	259/#22	.532	155	9/64	3x133/#25	2.30	2440	4580	...
3/0	427/#24	.543	155	9/64	3x133/#25	2.30	2437	4575	...
4/0	259/#21	.598	180	9/64	3x133/#24	2.40	2755	5210	...
4/0	427/#23	.610	180	9/64	3x133/#24	2.40	2860	5420	...

*Trade-mark.

General Cable Super Service* High-voltage Cable

3-Conductor

Type G—4001-5000 Volts—With Ground Wires

Size A.W.G.	CONDUCTORS		Diam. In.	Current Carrying Cap. Amp.	Insulation Thickness In.	Ground Wire Construction	Over all Diam. In.	SHIPPING WEIGHT POUNDS	
	Con- struction	Diam. In.						500- Foot Reels	1000- Foot Reels
8	49/#25	.161	35	10/64	3x 49/#31	1.50	942	1535	
8	133/#29	.169	35	10/64	3x 49/#31	1.50	965	1580	
6	49/#23	.203	50	10/64	3x 49/#29	1.60	1075	1800	
6	133/#27	.213	50	10/64	3x 49/#29	1.60	1080	1810	
4	49/#21	.256	65	10/64	3x133/#31	1.70	1220	2090	
4	133/#25	.268	65	10/64	3x133/#31	1.70	1230	2110	
2	133/#23	.339	90	10/64	3x133/#29	1.90	1555	2660	
2	259/#26	.335	90	10/64	3x133/#29	1.90	1555	2660	
1	133/#22	.380	100	10/64	3x133/#28	2.00	1725	3200	
1	259/#25	.376	100	10/64	3x133/#28	2.00	1725	3200	
1/0	133/#21	.427	120	10/64	3x133/#27	2.10	1867	3585	
1/0	259/#24	.422	120	10/64	3x133/#27	2.10	1867	3585	
2/0	133/#20	.479	135	10/64	3x133/#26	2.20	2170	4040	
2/0	259/#23	.474	135	10/64	3x133/#26	2.20	2170	4040	
3/0	259/#22	.532	155	10/64	3x133/#25	2.40	2535	4770	
3/0	427/#24	.543	155	10/64	3x133/#25	2.40	2542	4785	
4/0	259/#21	.598	180	10/64	3x133/#24	2.50	2875	5450	
4/0	427/#23	.610	180	10/64	3x133/#24	2.50	2870	5440	

3-Conductor

Types SH-B and SH-C—Shielded Over Assembled Conductors

Type SH-D—Shields Over Individual Conductors



2001-3000 Volts

Size A.W.G.	CONDUCTORS		Diam. In.	Current Carrying Cap. Amp.	Insulation Thickness In.	Ground Wire Construction	Type SH-B without Ground Wires		Type SH-C with Ground Wires	
	Con- struction	Diam. In.					500- Foot Reels	1000- Foot Reels	500- Foot Reels	1000- Foot Reels
8	49/#25	.161	35	8/64	3x 42/#30	1.40	770	1380	790	1420
6	49/#23	.203	50	9/64	3x 66/#30	1.60	1035	1740	1067	1805
6	133/#27	.213	50	9/64	3x 66/#30	1.60	1035	1740	1067	1805
4	49/#21	.256	65	9/64	3x102/#30	1.70	1160	1990	1210	2090
4	133/#25	.268	65	9/64	3x102/#30	1.80	1230	2140	1280	2240
3	133/#24	.302	75	9/64	3x126/#30	1.80	1275	2200	1335	2320
2	133/#23	.339	90	9/64	3x162/#30	1.90	1400	2470	1475	2620
1	133/#22	.380	100	9/64	3x198/#30	2.00	1625	2950	1717	3135
1/0	259/#24	.422	120	9/64	3x198/#29	2.10	1775	3250	1892	3485
2/0	259/#23	.474	135	9/64	3x216/#28	2.20	1965	3630	2125	3950
3/0	427/#24	.543	155	9/64	3x216/#27	2.40	2275	4250	2475	4550

3001-4000 Volts

6	49/#23	.203	50	10/64	3x 66/#30	1.70	1105	1880	1137	1945
6	133/#27	.213	50	10/64	3x 66/#30	1.70	1105	1880	1137	1945
4	49/#21	.256	65	10/64	3x102/#30	1.80	1230	2140	1280	2240
4	133/#25	.268	65	10/64	3x102/#30	1.80	1237	2150	1287	2250
3	133/#24	.302	75	10/64	3x126/#30	1.90	1355	2380	1415	2500
2	133/#23	.339	90	10/64	3x162/#30	2.00	1560	2820	1635	2970
1	133/#22	.380	100	10/64	3x198/#30	2.10	1710	3120	1802	3305
1/0	259/#24	.422	120	10/64	3x198/#29	2.20	1870	3440	1957	3675
2/0	259/#23	.474	135	10/64	3x216/#28	2.30	2060	3820	2220	4140
3/0	427/#24	.543	155	10/64	3x216/#27	2.50	2375	4450	2575	4850

4001-5000 Volts

6	49/#23	.203	50	12/64	3x 66/#30	1.80	1180	2030	1212	2095
6	133/#27	.213	50	12/64	3x 66/#30	1.80	1185	2040	1217	2105
4	49/#21	.256	65	12/64	3x102/#30	2.00	1465	2630	1515	2730
4	133/#25	.268	65	12/64	3x102/#30	2.00	1470	2640	1520	2740
3	133/#24	.302	75	12/64	3x126/#30	2.10	1595	2890	1655	3010
2	133/#23	.339	90	12/64	3x162/#30	2.10	1655	3010	1730	3180
1	133/#22	.380	100	12/64	3x198/#30	2.20	1805	3310	1897	3495
1/0	259/#24	.422	120	12/64	3x198/#29	2.40	2055	3810	2172	4045
2/0	259/#23	.474	135	12/64	3x216/#28	2.50	2265	4230	2425	4550

5001-6000 Volts

6	49/#23	.203	50	13/64	3x 66/#30	1.90	1270	2200	1302	2265
6	133/#27	.213	50	13/64	3x 66/#30	1.90	1270	2200	1302	2265
4	49/#21	.256	65	13/64	3x102/#30	2.00	1465	2630	1515	2730
4	133/#25	.268	65	13/64	3x102/#30	2.10	1600	2900	1650	3000
3	133/#24	.302	75	13/64	3x126/#30	2.10	1600	2900	1660	3020
2	133/#23	.339	90	13/64	3x162/#30	2.20	1735	3170	1810	3320
1	133/#22	.380	100	13/64	3x198/#30	2.30	1905	3510	1997	3695
1/0	259/#24	.422	120	13/64	3x198/#29	2.40	2060	3820	2177	4055

6001-7000 Volts

4	49/#21	.256	65	15/64	3x102/#30	2.20	1650	3000	1700	3100
4	133/#25	.268	65	15/64	3x102/#30	2.20	1650	3000	1700	3100
3	133/#24	.302	75	15/64	3x126/#30	2.30	1785	3270	1845	3390
2	133/#23	.339	90	15/64	3x162/#30	2.40	1930	3560	2005	3710
1	133/#22	.380	100	15/64	3x198/#30	2.50	2050	3800	2142	3985

*Trade-mark.
Rubber sheathed portable cable molded in lead, having larger diameters or diameters other than those listed above, can also be furnished.
Four-conductor Type SH Cables are also supplied.

General Cable Wire Armored Cable 3-Conductor



Designed for semi-portable use, such as power supply to dredges, shovels, etc. The use of galvanized steel armor wire provides exceptional longitudinal strength, allowing long lengths to be pulled into position or moved about without imposing undue strain on the conductors or insulation. Protection is also afforded against fouling by ship anchors, abrasion, and impact of heavy bodies.

Conductors are of tinned, soft annealed copper, and are flexible stranded (A.S.T.M. Class C).

The insulation on the separate conductors is either a 30% or 40% submarine compound, enclosed in a color-coded rubber-faced tape for conductor identification.

For cable operating at more than 3500 volts with the neutral ungrounded, and for all cable operating at more than 6000 volts, shielding recommendations can be obtained upon request.

The insulated and taped conductors are cabled with a short lay with presaturated jute fillers, and are bound together with a heavy rubber-faced tape. A bedding of presaturated jute yarn is next applied, over which the galvanized steel armor wires are served. The armor wires are applied tightly with a short lay in order to provide maximum flexibility in the finished cable.

Cable can also be supplied with an all-rubber, or a reinforced rubber, jacket under the armor.

Rated Voltage, 2001-3000 Phase to Phase (Grounded or Ungrounded)

This cable does not contain shielding.

Size A.W.G.	CONDUCTORS		Diameter Inches	Insulation Thickness Inches	Size of Armor Wires B.W.G.	Over-all Diameter Inches	Net Weight Pounds per 1000 Feet
	No. Strands	Diam. Inches					
6	19	.186	5/64	12	1.49	2,209	
4	19	.234	5/64	12	1.59	2,539	
2	19	.296	5/64	12	1.72	3,005	
1	37	.333	5/64	12	1.81	3,323	
1/0	37	.374	5/64	12	1.89	3,691	
2/0	37	.420	5/64	12	1.99	4,135	
3/0	37	.471	5/64	12	2.08	4,643	
4/0	37	.533	5/64	10	2.28	5,806	
C.M.							
250,000	61	.576	5/64	10	2.44	6,573	
500,000	61	.815	5/64	10	2.96	10,109	
1,000,000	91	1.153	5/64	8	3.78	17,569	

Rated Voltage, 4001-5000 Phase to Phase (Grounded or Ungrounded)

This cable does not contain shielding.

6	19	.186	10/64	12	1.62	2,470	
4	19	.234	10/64	12	1.73	2,809	
2	19	.296	10/64	12	1.86	3,290	
1	37	.333	10/64	12	1.94	3,612	
1/0	37	.374	10/64	12	2.03	3,901	
2/0	37	.420	10/64	12	2.13	4,434	
3/0	37	.471	10/64	10	2.29	5,478	
4/0	37	.533	10/64	10	2.41	6,162	
C.M.							
250,000	61	.576	11/64	10	2.58	6,945	
500,000	61	.815	11/64	8	3.16	11,351	
1,000,000	91	1.153	11/64	8	3.91	18,192	

Rated Voltage, 6001-7000 Phase to Phase (Ungrounded)

Has shielding over individual insulated conductors.

6	19	.186	14/64	12	2.00	3,422	
4	19	.234	14/64	12	2.10	3,807	
2	19	.296	14/64	10	2.28	4,835	
1	37	.333	14/64	10	2.37	5,215	
1/0	37	.374	14/64	10	2.46	5,654	
2/0	37	.420	14/64	10	2.55	6,174	
3/0	37	.471	14/64	10	2.66	6,806	
4/0	37	.533	14/64	10	2.79	7,547	
C.M.							
250,000	61	.576	14/64	10	2.89	8,237	
500,000	61	.815	14/64	8	3.50	13,011	
1,000,000	91	1.153	14/64	8	4.21	20,068	

General Cable Super Service* Cords

Type S—60% Jacket—600 Volts



Single Conductor

Flexible conductor of soft bare copper, cotton wrap, 30% rubber, and 60% steel-molded tough rubber jacket overall.

Size A.W.G.	Con-struction	Current Carrying Capacity Amperes	Insu-lation Thick-ness Inches	Over-all Diam-eter Inches	Net Weight Pounds per 1000 Feet	GROSS WEIGHT, (POUNDS) PER 1000 FEET	
						500-Foot Spool	1000-Foot Reel
18	42x#34	3	3/64	.300	46	50	74
16	65x#34	6	3/64	.300	48	52	76
14	41x#30	15	3/64	.300	52	56	78
12	65x#30	20	3/64	.300	58	62	85
10	105x#30	25	3/64	.300	70	74	100

2-Conductor

Flexible conductors of soft annealed bare copper, cotton wrap, 30% colored rubber (black, white, green and red for first, second, third, and fourth conductors respectively) cabled with suitable fillers, binder, 60% steel-molded tough rubber jacket overall.

Size A.W.G.	Con-struction	Current Carrying Capacity Amperes	Insu-lation Thick-ness Inches	Over-all Diam-eter Inches	Net Weight Pounds per 1000 Feet	GROSS WEIGHT, (POUNDS) PER 1000 FEET
18	42x#34	5	3/64	.400	76	86
16	65x#34	7	3/64	.400	81	91
14	41x#30	15	3/64	.530	139	197
12	65x#30	20	3/64	.605	184	242
10	105x#30	25	3/64	.640	207	265

3-Conductor

Same construction as the 2-conductor cord.

Size A.W.G.	Con-struction	Current Carrying Capacity Amperes	Insu-lation Thick-ness Inches	Over-all Diam-eter Inches	Net Weight Pounds per 1000 Feet	GROSS WEIGHT, (POUNDS) PER 1000 FEET
18	42x#34	5	3/64	.400	84	94
16	65x#34	7	3/64	.435	104	114
14	41x#30	15	3/64	.562	172	230
12	65x#30	20	3/64	.640	224	288
10	105x#30	25	3/64	.690	288	396

4-Conductor

Same construction as the 2-conductor cord.

Size A.W.G.	Con-struction	Current Carrying Capacity Amperes	Insu-lation Thick-ness Inches	Over-all Diam-eter Inches	Net Weight Pounds per 1000 Feet	GROSS WEIGHT, (POUNDS) PER 1000 FEET
18	42x#34	5	3/64	.435	101	159
16	65x#34	7	3/64	.485	131	189
14	41x#30	15	3/64	.605	206	270
12	65x#30	20	3/64	.675	254	362
10	105x#30	25	3/64	.750	355	463

Current carrying capacities, N.E.C. 1940
Single-conductor cords not listed as Type S cord.

Type SJ—60% Jacket—300 Volts



Flexible conductors of soft annealed bare copper, cotton wrap, 30% colored rubber (black, white, green and red for first, second, third, and fourth conductors respectively) cabled with suitable fillers, binder, 60% steel-molded tough rubber jacket overall.

2-Conductor

Size A.W.G.	Con-struction	Current Carrying Capacity Amperes	Insu-lation Thick-ness Inches	Over-all Diam-eter Inches	Net Weight Pounds per 1000 Feet	GROSS WEIGHT, (POUNDS) PER 1000 FEET	
						250-Foot Spool	1000-Foot Reel
18	42x#34	5	3/64	.300	46	58	..
16	65x#34	7	3/64	.354	66	78	..

3-Conductor

Size A.W.G.	Con-struction	Current Carrying Capacity Amperes	Insu-lation Thick-ness Inches	Over-all Diam-eter Inches	Net Weight Pounds per 1000 Feet	GROSS WEIGHT, (POUNDS) PER 1000 FEET
18	42x#34	5	3/64	.354	68	80
16	65x#34	7	3/64	.400	93	105

Current carrying capacities, N.E.C. 1940.
*Trade-mark.

General Cable Special Heavy Duty Cords
600 Volts



Type NS Neoprene Cord



Type TS Thiokol* Cord

Flexible or extra-flexible stranded conductors are enclosed in color-coded A.S.T.M. Performance compound, cabled with jute fillers and assembled in a close fitting outer sheath of Neoprene or Thiokol compounds.

Sheaths are applied over a reinforcing layer of close wrapped cotton. Normally supplied with untinned conductors and cotton separators.

TYPE NS NEOPRENE. Recommended where toughness, heat, sunlight, and abrasion resistance together with moderate degrees of oil and solvent resistance are required.

TYPE TS THIOKOL.* Unaffected by sunlight, oil, or solvents (other than strong alkali), does not have heat or abrasion resistance characteristics of Type NS.

2-Conductor

Size A.W.G.	Current Carrying Capacity Amp.	Insu-lation Thick-ness In.	Type NS Neoprene Sheathed			Type TS Thiokol* Sheathed				
			Con-ductor Con-struction	Over-all Diam. In.	Wt.Lb. per 250-Ft. Coil	Ship. Wt. Lb. per Bdl. of 2 Coils	Con-ductor Con-struction	Over-all Diam. In.	Wt.Lb. per 250-Ft. Coil	
18	5	3/64	42x#34	.390	20	82	42x#34	.355	17	72
16	7	3/64	66x#34	.405	23	47	65x#34	.375	20	41
14	15	3/64	84x#33	.530	39	79	41x#30	.488	33	67
12	20	3/64	84x#31	.600	48	96	65x#30	.588	52	106
10	25	3/64	105x#30	.640	60	121	105x#30	.658	66	135

3-Conductor

Size A.W.G.	Current Carrying Capacity Amp.	Insu-lation Thick-ness In.	Con-ductor Con-struction	Over-all Diam. In.	Wt.Lb. per 250-Ft. Coil	Ship. Wt. Lb. per Bdl. of 2 Coils
18	5	3/64	42x#34	.405	23	47
16	7	3/64	66x#34	.430	28	56
14	15	3/64	84x#33	.560	46	94
12	20	3/64	84x#31	.635	56	114
10	25	3/64	105x#30	.690	75	152

4-Conductor

Size A.W.G.	Current Carrying Capacity Amp.	Insu-lation Thick-ness In.	Con-ductor Con-struction	Over-all Diam. In.	Wt.Lb. per 250-Ft. Coil	Ship. Wt. Lb. per Bdl. of 2 Coils
18	5	3/64	42x#34	.435	26	54
16	7	3/64	66x#34	.485	33	67
14	15	3/64	84x#33	.605	55	112
12	20	3/64	84x#31	.665	70	142
10	25	3/64	105x#30	.745	93	187

*Trade-mark Thiokol Corp. ^oPer carton of 4 coils.
Color-coding of conductors, insulation colors: black; black and white; black, white, and green; black, white, green, and red; for single, 2, 3, or 4-conductor cords respectively.
Neoprene cords bear printed rubber labels vulcanized into sheath indicating cords of General Cable manufacture.

General Cable Special Light Duty Cords
Type NSJ—Neoprene Sheathed—300 Volts



For use where conditions of sunlight, heat, oil; or solvent-attack would be unsuitable for rubber-jacketed Type SJ cords.

2-Conductor

Size A.W.G.	Con-struction	Current Carrying Capacity Amp.	Insu-lation Thick-ness In.	Over-all Diam. In.	No. of Coils in Ctn.	Wt. Lb. 250-Ft. Coil	Ship. Wt. Lb. per Ctn.
16	66x#34	7	2/64	.330	4	15	60
18	42x#34	5	2/64	.335	4	15	62
16	66x#34	7	2/64	.360	4	20	82

3-Conductor

Size A.W.G.	Con-struction	Current Carrying Capacity Amp.	Insu-lation Thick-ness In.	Over-all Diam. In.	No. of Coils in Ctn.	Wt. Lb. 250-Ft. Coil	Ship. Wt. Lb. per Ctn.
18	42x#34	5	2/64	.360	4	21	84
16	66x#34	7	2/64	.390	4	26	107

These cords (except 2-conductor size 18 A.W.G.) bear printed colored labels vulcanized into sheath indicating cords of General Cable manufacture.

Neoprene cords not listed by Underwriters' Laboratories.

General Cable Cords

300 Volts

Type SJ Standard Cord—40% Jacket

Underwriters' Approved



Used with office, household and similar appliances. Prescribed by the N.E.C. for use in damp places and where subject to hard usage.

Construction comprises flexible or extra-flexible, bunch stranded conductors of soft annealed copper, cotton separator, insulation of 30% grade compound (color-coded), cabled with cushioning jute fillers.

The 40% rubber jacket is available in black, ivory, green or brown. Also supplied with a 60% jacket molded in lead; has extra-flexible stranding.

Put up in 250-foot lengths.

Size A.W.G.	Construction	Current Carrying Capacity Amperes	Insulation Thickness Inches	Overall Diameter Inches	Net Weight Pounds per 1000 Feet	Weight Pounds per 1000-Foot Coil
18	16x#30	5	3/64	.305	50	13
16	26x#30	7	3/64	.330	65	16
18	16x#30	5	3/64	.335	60	15
16	26x#30	7	3/64	.360	80	20
18	16x#30	5	3/64	.360	82	21
16	26x#30	7	3/64	.390	105	27

Current carrying capacities, N.E.C. 1937.

Color-coding of conductors, insulation colors: black and white; black, white, and green; black, white, green, and red; for 2, 3 or 4-conductor cords respectively.

Type SJ Super Service* Shot Firing or Blasting Cords



Designed for use as control wiring in remote firing of explosive charges by electric impulses. Suitable for use in either battery or magneto circuits.

Waterproof, light weight, flexible, and highly resistant to abrasion and normal wear. Cords are continuously reusable by cutting off damaged ends after each firing.

Size A.W.G.	Construction	Current Carrying Capacity Amperes	Insulation Thickness Inches	Overall Diameter Inches	Net Weight Pounds per 1000 Feet	Weight Pounds per 1000-Foot Coil
18	16x#30	5	.023	.30	47	48
16	26x#30	7	.023	.30	49	50
14	41x#30	15	.023	.35	70	71

Super Service* Miners' Hat Lamp Cord



A lightweight, rubber-jacketed 2-conductor cord for miners' individual electric lamps. Waterproof, durable, and extremely flexible.

Two extra-flexible, rope-stranded conductors of soft annealed copper, each insulated with 30% rubber compound, are assembled with a short lay around a center supporting cord of strong cotton, and enclosed in a jacket of 60% Super Service tough tread compound.

Size A.W.G.	Construction	Current Carrying Capacity Amperes	Insulation Thickness Inches	Overall Diameter Inches	Net Weight Pounds per 1000 Feet	Weight Pounds per 1000-Foot Spool
18	42x#34	5	.023	.300	65	80
16	70x#34	7	.023	.354	95	110

*Trade-mark.

General Cable Gencaseal*



Gencaseal is an electrical insulation made from a synthetic thermoplastic material. The physical properties of Gencaseal are comparable to those of rubber compounds; dielectric strength is higher. Gencaseal is highly resistant to the deteriorating effects of heat, oxidation, sunlight, oil, acids and alkalis, water, and other chemical solutions; will not support combustion. Overall protection such as a tape, braid or lead sheath is not required.

Principal characteristics are:

1. Dielectric strength substantially above that of rubber compounds.
2. Resistance to oils and chemical solutions beyond comparison with rubber or most rubber-like insulations.
3. Ages more slowly than rubber because of its greater resistance to oxidation and light.
4. Flame-resistant to the extent that it will not support combustion even in open flame.
5. Tough, flexible, and durable; needs no protective coverings except where subjected to severe mechanical abuse.
6. Attractive finish; a clean, glossy, enamel-like appearance. Available in a number of bright, permanent colors.
7. Small diameter and reduced weight compared to other types of insulation which require protective coverings.
8. Strips easily from the conductor leaving the tin clean and bright.

Gencaseal insulated wire is recommended for station and industrial switchboard, meter and control wiring; for machine shop and printing press motor leads and control circuits; for distributing frame and other small wiring in the telephone plant; for appliance wiring or other small applications at 600 volts or less and where the operating temperature does not exceed 80°C.

The Underwriters' Laboratories have no fixed standards covering this type of wire for any particular application. However, their "Appliance Wiring Material" procedure provides for the listing and labeling of the wire after a sample appliance, motor or machine with suitable wiring as a component part has been submitted by the appliance maker to the Underwriters' Laboratories and approval given.

For low voltage wiring problems where severe conditions are encountered, Gencaseal may be the solution. However, it should be employed only on the recommendation of engineers who are familiar with its characteristics performance.

In solid, flexible, or extra flexible stranding. Sizes smaller than 14 A.W.G. rated at 300 volts. Insulation thickness is the same as the standard rubber wall for the size involved. Other sizes and wall thicknesses on request.

Standard colors: black, white, red, yellow, green, and blue. Unless otherwise specified, black will be supplied. Ridged insulation can be supplied for further identification where required.

All conductors soft tinned copper. Protective tapes or braids are not required.

Other strandings for flexible and extra flexible conductors can be supplied when quantity justifies.

Size A.W.G.	Strands	Wall Thick. In.	Approx. O. D. In.	Net Wt. per 1000 Feet Lb.	Size A.W.G.	Strands	Wall Thick. In.	Approx. O. D. In.	Net Wt. per 1000 Feet Lb.
†18	Solid	3/64	.102	9	12	Solid	3/64	.175	32
	7	3/64	.108	10		7	3/64	.186	33
	16	3/64	.110	10		19	3/64	.187	33
†16	Solid	3/64	.115	13	10	Solid	3/64	.198	34
	7	3/64	.120	14		7	3/64	.196	47
	19	3/64	.121	14		7	3/64	.210	50
14	Solid	3/64	.122	15	19	Solid	3/64	.211	55
	7	3/64	.158	23		49	3/64	.215	57
	19	3/64	.167	24		8	Solid	3/64	.255	76
†14	Solid	3/64	.168	25	19	Solid	3/64	.271	81
	7	3/64	.170	25		7	3/64	.272	85
	41	3/64	.170	25		49	3/64	.286	87

†For 300-volt service.

*Trade-mark.

General Cable Varnished Cambric Insulated Building Wire and Cable

Single Conductor—600 Volts



Solid Conductors

Size A.W.G.	CONDUCTORS No. Strands	Diameter of Individual Strands Inches	Diameter Inches	†Current Carrying Capacity Amperes	Varnished Cambric Thickness Inches	Braided Cables				Lead Sheathed Cables				
						Over-all Diameter Inches	Net Weight Pounds per 1000 Ft.	Over-all Diameter Inches	Net Weight Pounds per 1000 Ft.	Over-all Diameter Inches	Net Weight Pounds per 1000 Ft.	Sheath Thickness Inches	Over-all Diameter Inches	Net Weight Pounds per 1000 Ft.
14	..	.....	.06408	18	3/64	.188	25	.253	36	.....	.....	3/64	.252	179
12	..	.....	.08081	25	3/64	.235	39	300	53	.....	.....	3/64	.269	209
10	..	.....	.1019	30	3/64	.256	54	321	69	.....	.....	3/64	.290	230
8	..	.....	.1285	40	3/64	.282	74	347	91	.....	.....	3/64	.316	269
6	..	.....	.1620	60	3/64	.352	120	417	139	.....	.....	3/64	.381	358
Stranded Conductors														
6	7	.0612	.184	60	1/64	.373	130	.438	151	.....	.....	3/64	.405	377
4	7	.0772	.232	85	1/64	.422	180	.487	203	.....	.....	3/64	.453	468
2	7	.0974	.292	110	1/64	.482	265	.547	294	.....	.....	3/64	.515	720
1	19	.0664	.332	120	5/64	.553	340	.618	373	.....	.....	3/64	.613	876
1/0	19	.0745	.373	150	5/64	.594	415	.659	451	.....	.....	3/64	.654	973
2/0	19	.0837	.418	180	5/64	.640	510	.705	548	.....	.....	3/64	.700	1,116
3/0	19	.0940	.470	210	5/64	.691	620	.756	661	.....	.....	3/64	.751	1,290
4/0	19	.1055	.528	270	5/64	.749	765	.814	810	.....	.....	3/64	.809	1,690
CM.														
250,000	37	.0822	.575	300	5/64	.828	908	.913	966	.....	.....	5/64	.919	1,926
300,000	37	.0900	.630	330	5/64	.903	1090	.988	1153	.....	.....	5/64	.974	2,170
350,000	37	.0973	.681	360	5/64	.955	1260	1.040	1327	.....	.....	5/64	1.026	2,386
400,000	37	.1040	.728	390	5/64	1.001	1420	1.086	1490	.....	.....	5/64	1.072	2,609
450,000	37	.1103	.772	.....	5/64	1.050	1598	1.135	1672	.....	.....	5/64	1.121	2,825
500,000	37	.1162	.814	480	5/64	.....	.....	1.172	1866	1.117	1776	5/64	1.158	3,040
550,000	61	.0950	.855	.....	7/64	.....	.....	1.213	2023	1.158	1930	6/64	1.261	3,548
600,000	61	.0992	.893	540	7/64	.....	.....	1.282	2238	1.227	2140	6/64	1.300	3,850
700,000	61	.1071	.964	600	7/64	.....	.....	1.366	2591	1.311	2486	6/64	1.384	4,298
750,000	61	.1109	.998	630	7/64	.....	.....	1.388	2762	1.333	2655	6/64	1.406	4,400
1,000,000	61	.1280	1.152	780	7/64	.....	.....	1.541	3577	1.486	3458	6/64	1.559	5,518
1,500,000	91	.1284	1.412	1020	3/64	.....	.....	1.861	5310	1.806	5165	7/64	1.894	8,101
1,750,000	127	.1174	1.526	.....	5/64	.....	.....	1.973	6107	1.918	5954	7/64	2.006	9,076
2,000,000	127	.1255	1.631	1260	5/64	.....	.....	2.067	6975	2.012	6814	7/64	2.100	10,091

3-Conductor—600 Volts

Solid Conductors

Size A.W.G.	CONDUCTORS No. Strands	Diameter of Individual Strands Inches	Diameter Inches	†Current Carrying Capacity Amperes	Varnished Cambric Thickness Inches	Taped and Braided Cables		Lead Sheathed Cables		
						Overall Diameter Inches	Net Weight Pounds per 1000 Ft.	Sheath Thickness Inches	Overall Diameter Inches	Net Weight Pounds per 1000 Ft.
14	..	.....	.06408	18	3/64	.420	103	3/64	.449	390
12	..	.....	.08081	25	3/64	.456	131	3/64	.485	445
10	..	.....	.1019	30	3/64	.501	187	3/64	.562	663
8	..	.....	.1285	40	3/64	.557	257	3/64	.618	788
6	..	.....	.1620	60	3/64	.697	395	3/64	.757	1,066
Stranded Conductors										
6	7	.0612	.184	60	1/64	.742	412	1/64	.803	1,128
4	7	.0772	.232	85	1/64	.848	598	5/64	.939	1,641
2	7	.0974	.292	110	1/64	.997	899	5/64	1.068	2,076
1	19	.0664	.332	120	5/64	1.164	1,172	5/64	1.252	2,825
1/0	19	.0745	.373	150	5/64	1.252	1,441	5/64	1.340	3,202
2/0	19	.0837	.418	180	5/64	1.351	1,756	5/64	1.439	3,661
3/0	19	.0940	.470	210	5/64	1.461	2,146	5/64	1.549	4,204
4/0	19	.1055	.528	270	5/64	1.586	2,630	5/64	1.674	4,868
CM.										
250,000	37	.0822	.575	300	5/64	1.755	3,149	7/64	1.873	6,087
300,000	37	.0900	.630	330	5/64	1.874	3,708	7/64	1.992	6,847
350,000	37	.0973	.681	360	5/64	1.986	4,258	7/64	2.104	7,584
400,000	37	.1040	.728	390	5/64	2.084	4,796	7/64	2.202	8,289
450,000	37	.1103	.772	.....	5/64	2.205	5,356	8/64	2.340	9,566
500,000	37	.1162	.814	480	5/64	2.284	5,916	8/64	2.419	10,292
550,000	61	.0950	.855	.....	**5/64	2.436	6,617	8/64	2.571	11,260
600,000	61	.0992	.893	540	**5/64	2.517	7,169	8/64	2.652	11,979
700,000	61	.1071	.964	600	**5/64	2.698	8,289	8/64	2.833	13,444
750,000	61	.1109	.998	630	**5/64	2.745	8,817	8/64	2.880	14,061
1,000,000	61	.1280	1.152	780	**5/64	3.074	11,478	8/64	3.209	17,349

**Belt dimensions: 3/64 inch on individual conductors; 5/64-inch overall belt.

†National Electrical Code—sizes not showing ratings must be given ratings by Local Inspection Authorities.

General Cable Varnished Cambric Insulated Power Cable



Conductors		Solid or Concentric Strands		Varnished Cambric		Braid		Lead Sheathed Cables		Varnished Cambric		Braid		Lead Sheathed Cables	
Size	A.W.G.	No. Strands	In.	Overall Diam.	In.	Overall Diam.	In.	Overall Diam.	In.	Overall Diam.	In.	Overall Diam.	In.	Overall Diam.	In.
10	10	(Solid)	7	.0612	.355	.78	.384	.322	.78	.355	.78	.322	.78	.355	.78
8	8	(Solid)	7	.0712	.436	.81	.410	.422	.81	.436	.81	.422	.81	.436	.81
6	6	(Solid)	7	.0974	.545	1.01	.468	.450	1.01	.545	1.01	.468	1.01	.545	1.01
2	2		7	.0974	.545	1.01	.468	.450	1.01	.545	1.01	.468	1.01	.545	1.01
1/0	1/0		7	.0974	.545	1.01	.468	.450	1.01	.545	1.01	.468	1.01	.545	1.01
1	1		7	.0974	.545	1.01	.468	.450	1.01	.545	1.01	.468	1.01	.545	1.01
2/0	2/0		7	.0974	.545	1.01	.468	.450	1.01	.545	1.01	.468	1.01	.545	1.01
3/0	3/0		7	.0974	.545	1.01	.468	.450	1.01	.545	1.01	.468	1.01	.545	1.01
4/0	4/0		7	.0974	.545	1.01	.468	.450	1.01	.545	1.01	.468	1.01	.545	1.01
250,000	250,000		7	.0822	.858	1.147	.950	1.198	1.147	.858	1.147	.950	1.198	1.147	.950
500,000	500,000		37	.1162	1.109	1.333	1.406	1.210	1.333	1.109	1.333	1.210	1.333	1.109	1.333
750,000	750,000		37	.1162	1.109	1.333	1.406	1.210	1.333	1.109	1.333	1.210	1.333	1.109	1.333
1,000,000	1,000,000		61	.1280	1.486	1.806	1.559	1.548	1.806	1.280	1.806	1.548	1.806	1.280	1.806
1,500,000	1,500,000		91	.1284	1.806	2.012	1.894	1.837	2.012	1.284	2.012	1.837	2.012	1.284	2.012
2,000,000	2,000,000		127	.1255	2.255	2.614	2.100	2.043	2.614	1.255	2.614	2.043	2.614	1.255	2.614

Conductor		Type		Conductor		Type		Conductor		Type		Conductor		Type	
Size	A.W.G.	No. Strands	In.	Overall Diam.	In.	Overall Diam.	In.	Overall Diam.	In.	Overall Diam.	In.	Overall Diam.	In.	Overall Diam.	In.
10	10	Solid	7	.644	215	704	.704	786	683	322	704	.704	786	683	322
8	8	Solid	7	.696	275	756	.756	825	739	344	756	.756	825	739	344
6	6	Solid	7	.764	373	825	.825	887	812	466	825	.825	887	812	466
4	4	Solid	7	.924	565	995	.995	1058	982	706	995	.995	1058	982	706
2	2	Solid	7	1.044	822	1.115	1.115	1.166	1.027	1.027	1.027	1.027	1.027	1.027	1.027
1	1	Solid	7	1.218	1058	1.291	1.291	1.365	1.027	1.027	1.027	1.027	1.027	1.027	1.027
1/0	1/0	Solid	7	1.300	1262	1.373	1.373	1.446	1.027	1.027	1.027	1.027	1.027	1.027	1.027
2/0	2/0	Solid	7	1.392	1526	1.465	1.465	1.538	1.027	1.027	1.027	1.027	1.027	1.027	1.027
3/0	3/0	Solid	7	1.494	1849	1.567	1.567	1.640	1.027	1.027	1.027	1.027	1.027	1.027	1.027
4/0	4/0	Solid	7	1.610	2256	1.683	1.683	1.756	1.027	1.027	1.027	1.027	1.027	1.027	1.027
250,000	250,000	Solid	7	1.704	2598	1.807	1.807	1.880	1.027	1.027	1.027	1.027	1.027	1.027	1.027
500,000	500,000	Solid	7	1.978	4852	2.032	2.032	2.086	1.027	1.027	1.027	1.027	1.027	1.027	1.027
750,000	750,000	Solid	7	2.598	7106	2.733	2.733	2.787	1.027	1.027	1.027	1.027	1.027	1.027	1.027
1,000,000	1,000,000	Solid	7	2.904	9244	3.039	3.039	3.093	1.027	1.027	1.027	1.027	1.027	1.027	1.027
250,000	250,000	Solid	7	1.828	2744	1.931	1.931	1.985	1.027	1.027	1.027	1.027	1.027	1.027	1.027
500,000	500,000	Solid	7	2.321	5024	2.456	2.456	2.510	1.027	1.027	1.027	1.027	1.027	1.027	1.027
750,000	750,000	Solid	7	2.691	7275	2.826	2.826	2.880	1.027	1.027	1.027	1.027	1.027	1.027	1.027
1,000,000	1,000,000	Solid	7	2.997	9446	3.132	3.132	3.186	1.027	1.027	1.027	1.027	1.027	1.027	1.027

Weights and diameters are for cables with tape and braid; other braided cables have single braid only. For ungrounded neutral service, heavier insulation walls are required.

All conductors untempered, soft annealed copper (also supplied with tin or alternate special Alloy coated strands). Construction data for cables of other sizes, types, and voltage ratings will be supplied on request.

American Steel & Wire Electrical Wires and Cable

Nearly fifty years—half a century—of steady growth and development are back of American Steel & Wire Company leadership in the production of insulated wires and cables.

The phenomenal growth of the electrical industry during the ensuing years is a matter of common knowledge; and it was accompanied by corresponding advances in the insulated wire field. The American Steel & Wire Company has always been conspicuously identified with this progress. Their products include almost every type of insulated conductor from magnet wires, finer than a human hair, to huge power cables nearly five inches in diameter. All operations—rolling, drawing, annealing, and insulating—are performed in their own mills, and every process is, therefore, under close control from start to finish.

Well equipped research laboratories are constantly investigating and testing new processes and new materials for the improvement of these products. Careful supervision and frequent inspections, repeated at successive stages of production, insure adherence to our strict standards of high uniform quality.

Firefite Rubber-Insulated Braid-Covered Building Wire and Cable

N.E.C. Standard



This wire and cable conforms in every respect to standards established by the Underwriters' Laboratories and the National Electrical Code.

Available in all recognized types, grades, and finishes—braided or lead-sheathed—single, twin, or multiple-conductor—for working pressures up to 5000 volts or higher.

Building Wire Types

Trade Name	Underwriters' Type	Grade of Insulation	General Construction	Maximum Operating Temperature
Americore	R	Code	Rub. & Braid	50°C.
Amerite	RP	Performance (30%)	Rub. & Braid	60°C.
Amperox	RH	Heat-Resistant	Rub. & Braid	75°C.
Amarine	RW	Moisture-Resistant	Rub. & Braid	50°C.

Thin-Wall Types

Amerite	RPT	Performance (30%)	Rub. & Braid	60°C.
Amperox	RHT	Heat-Resistant	Rub. & Braid	75°C.
Ampyrol	SN	Synthetic (No Braid)	Plain Core	60°C.

Corresponding to the four grades of building wire recognized by Underwriters' Laboratories, Firefite wire and cable is available with any one of four different grades of rubber insulation, as follows:

Americore (Type R) wire meets all requirements for Underwriters' "code grade" and is approved for operating temperatures up to 50°C.

Amerite (Type RP), formerly known as 30% grade, corresponds to Underwriters' requirements for "performance grade." Approved for operation at temperatures up to 60°C. Amerite also complies with A.S.T.M. specification D27 for Class AO rubber insulation.

Amperox (Type RH) complies with Underwriters' standards for "heat-resistant grade." Approved for operating temperatures up to 75°C. Formerly known as "super-aging grade," Amperox conforms in all respects with requirements of latest issue of Federal specification No. 106.

Amarine (Type RW) is Underwriters' "moisture-resistant" grade that is approved for use in moist locations where lead-sheathed cable is ordinarily required.

Firefite Rubber-Insulated Braid-Covered Building Wire and Cable

600 Volts

N.E.C. Standard

Single Conductor

Americore Type R—Code Grade
Amerite Type RP—Performance Grade (30%)
Amperox Type RH—Heat-Resistant Grade
Amarine Type RW—Moisture-Resistant Grade



Size A.W.G. or CM.	No. Strands	Rubber Wall In.	Solid		Double Braid		Std. Pkg.	
			Approx. O.D. In.	Net Wt. per 1000 Ft. Lb.	Approx. O.D. In.	Net Wt. per 1000 Ft. Lb.	No. Ft. on Coils	No. Ft. on Reels
14	Solid	3/64	19	29	22	33	500	500
12	Solid	3/64	21	38	24	43	500	500
10	Solid	3/64	23	53	26	58	500	500
8	Solid	1/4	29	87	32	94	500	500
6	Solid	3/64	...	...	36	131	500	500
Stranded								
14	7	3/64	20	30	23	35	500	500
12	7	3/64	22	41	25	45	500	500
10	7	3/64	25	56	27	61	500	500
8	7	3/64	31	93	35	101	500	500
6	7	3/64	...	...	39	139	500	500
4	7	3/64	...	...	44	200	...	1000
3	7	3/64	...	...	47	240	...	1000
2	7	3/64	...	...	50	290	...	1000
1	19	3/64	...	...	56	368	...	1000
1/0	19	5/64	...	...	60	447	...	1000
2/0	19	3/64	...	...	64	545	...	1000
3/0	19	5/64	...	...	70	671	...	1000
4/0	19	5/64	...	...	76	822	...	1000
250,000	37	3/64	...	...	84	981	...	1000
300,000	37	3/64	...	...	91	1158	...	1000
350,000	37	3/64	...	...	96	1329	...	1000
400,000	37	3/64	...	...	1.01	1502	...	1000
450,000	37	3/64	...	...	1.05	1675	...	1000
500,000	37	3/64	...	...	1.09	1845	...	1000
600,000	61	7/64	...	...	1.20	2215	...	1000
700,000	61	7/64	...	...	1.28	2550	...	1000
750,000	61	7/64	...	...	1.31	2720	...	1000
800,000	61	7/64	...	...	1.34	2886	...	1000
900,000	61	7/64	...	...	1.40	3230	...	1000
1,000,000	61	7/64	...	...	1.46	3552	...	1000
1,250,000	91	8/64	...	...	1.65	4449	...	500
1,500,000	91	8/64	...	...	1.78	5279	...	500
1,750,000	91	8/64	...	...	1.90	6095	...	500
2,000,000	91	8/64	...	...	2.01	6910	...	500

Twin Conductor

Americore Type RD—Code Grade
Amerite Type RPD—Performance Grade (30%)
Amperox Type RHD—Heat-Resistant Grade



Size A.W.G.	Rubber Wall Inches	Solid		Stranded		Std. Pkg.			
		Approx. O.D. In.	Net Wt. per 1000 Ft. Lb.	Approx. O.D. In.	Net Wt. per 1000 Ft. Lb.	No. Ft. on Coils	No. Ft. on Reels		
14	3/64	.24x	42	68	.25x	44	71	500	500
12	3/64	.26x	46	87	.27x	49	93	500	500
10	3/64	.28x	51	118	.29x	54	124	500	500
8	1/4	.34x	63	191	.35x	66	202	...	1000
6	3/64	.....	.....	.....	.40x	72	280	...	1000
4	3/64	.....	.....	.....	.45x	82	398	...	1000
3	3/64	.....	.....	.....	.48x	88	478	...	1000
2	3/64	.....	.....	.....	.51x	95	580	...	1000
1	5/64	.....	.....	.....	.58x1	08	740	...	1000

Firefite Thin-Wall Building Wire

600 Volts

By the use of thin-wall building wire, old buildings can be rewired and current-carrying capacities doubled, without disturbing existing conduit systems. The American Steel & Wire Company manufactures three different types of thin-wall wires: Types RHT, RPT, and SN.

Rubber-Insulated and Braid-Covered Single Conductor

Amerite Type RPT—Performance Grade (30%)
Amperox Type RHT—Heat-Resistant Grade



Type RPT is similar in construction to Type RHT except for the grade of rubber insulation employed. Type RPT is insulated with a light wall of Amerite (30%) performance grade rubber and covered with a standard Firefite braid. It is approved for rewiring jobs only. The maximum allowable operating temperature is 60°C. Current-carrying capacities are correspondingly lower than those of Type RHT.

Type RHT is insulated with a light wall of Amperox heat-resistant rubber compound and covered with a standard Firefite braid that is both flame-retarding and weather-resistant. This is the only type of thin-wall wire that is intended for both new wiring and for rewiring jobs. It is suitable for operation at temperatures up to 75°C. It has highest current-carrying capacity, size for size, of any of the thin-wall types.

Size A.W.G.	No. Strands	Rubber Wall In.	Solid		Double Braid		No. Ft. on Std. Coils
			Approx. O.D. In.	Approx. Net Wt. Lb. per 1000 Ft.	Approx. O.D. In.	Approx. Net Wt. Lb. per 1000 Ft.	
14	Solid	3/64	.16	21	.19	24	500
12	Solid	3/64	.18	28	.21	31	500
10	Solid	3/64	.20	40	.23	45	500
8	Solid	3/64	.25	70	.29	75	500
Stranded							
14	7	3/64	.17	22	.20	25	500
12	7	3/64	.19	29	.22	33	500
10	7	3/64	.21	42	.24	47	500
8	7	3/64	.27	72	.30	80	500

Synthetic Insulation—No Braid—Single Conductor

Ampyrol Type SN—Synthetic Grade

Type SN wires are insulated with a thin wall of Ampyrol, a synthetic resin developed by the American Steel & Wire Company. Ampyrol is the only covering, no braid is used. Intended for rewiring only. Recommended for operation at temperatures up to 60°C. Type SN wire is somewhat smaller in diameter than corresponding sizes of Type RHT, but that advantage is offset to some extent by its lower current-carrying capacity.

Size A.W.G.	Ampyrol Insulation Thickness Inches	Solid		Stranded		No. Ft. on Std. Coils
		Approx. O.D. In.	Approx. Net Wt. Lb. per 1000 Ft.	Approx. O.D. In.	Approx. Net Wt. Lb. per 1000 Ft.	
14	3/64	.13	20	.14	22	500
12	3/64	.15	28	.16	30	500
10	3/64	.17	41	.18	44	500
8	3/64	.23	69	.25	75	500

A. S. & W. Rubber-Insulated Lead-Sheathed Building Cable

600 Volts

N.E.C. Standard

Rubber-insulated, lead-sheathed cable of American Steel & Wire manufacture is available in all sizes—single, twin, or multiple-conductor—for any specified operating voltage. Three different types of rubber insulation are regularly furnished, corresponding to the three standard grades recognized by the Underwriters' Laboratories and the National Electrical Code:

Americore (Type RL) Underwriters' code grade, approved for operation at 50°C.

Amerite (Type RPL) Underwriters' performance (30%) grade, approved for operation at 60°C.

Amperox (Type RHL) Underwriters' heat-resistant grade, approved for operation at 75°C.

Other special compounds can be furnished for unusual conditions of installation or operation. American Steel & Wire Company engineers will gladly make recommendations.

Single Conductor

Americore Type RL—Code Grade

Amerite Type RPL—Performance Grade (30%)

Amperox Type RHL—Heat-Resistant Grade



Size A.W.G. or CM.	No. Strands	THICKNESS, INCHES		Approx. O.D. Inches	Approx. Net Wt. Lb. per 1000 Ft.	No. Ft. on Std. Reels
		Rubber Wall	Lead Sheath			
14	Solid	3/64	3/64	.26	138	1000
12	Solid	3/64	3/64	.27	156	1000
10	Solid	3/64	3/64	.33	257	1000
8	Solid	3/64	3/64	.37	321	1000
6	Solid	3/64	3/64	.44	484	1000
Stranded						
14	7	3/64	3/64	.26	144	1000
12	7	3/64	3/64	.28	164	1000
10	7	3/64	3/64	.34	273	1000
8	7	3/64	3/64	.39	339	1000
6	7	3/64	3/64	.46	513	1000
4	7	3/64	3/64	.51	618	1000
3	7	3/64	3/64	.53	686	1000
2	7	3/64	3/64	.57	765	1000
1	19	5/64	5/64	.64	911	1000
1/0	19	5/64	5/64	.68	1029	1000
2/0	19	5/64	5/64	.72	1168	1000
3/0	19	5/64	5/64	.77	1340	1000
4/0	19	5/64	5/64	.83	1545	1000
250,000	37	5/64	5/64	.94	1996	1000
300,000	37	5/64	5/64	1.00	2235	1000
350,000	37	5/64	5/64	1.05	2467	1000
400,000	37	5/64	5/64	1.10	2692	1000
450,000	37	5/64	5/64	1.14	2912	1000
500,000	37	5/64	5/64	1.18	3125	1000
600,000	61	7/64	7/64	1.32	3951	1000
700,000	61	7/64	7/64	1.39	4395	1000
750,000	61	7/64	7/64	1.43	4602	1000
800,000	61	7/64	7/64	1.46	4815	1000
900,000	61	7/64	7/64	1.52	5236	1000
1,000,000	61	7/64	7/64	1.58	5647	1000
1,250,000	91	8/64	7/64	1.78	7195	500
1,500,000	91	8/64	7/64	1.90	8225	500
1,750,000	91	8/64	7/64	2.02	9230	500
2,000,000	91	8/64	7/64	2.12	10220	500

A. S. & W. Rubber-Insulated Lead-Sheathed Building Cable

600 Volts
N.E.C. Standard

Twin Conductor

Americore Type RDL—Code Grade
Amerite Type RPD—Performance Grade (30%)
Amperox Type RHD—Heat-Resistant Grade



Size A.W.G.	No. Strands	THICKNESS, INCHES		Approx. Outer Dimensions Inches	Approx. Net Wt. Lb. per 1000 Ft.	No. Ft. on Std. Reels
		Rubber Wall	Lead Sheath			
Solid						
14	Solid	3/64	3/64	26x .45	228	500
12	Solid	3/64	3/64	31x .51	366	500
10	Solid	3/64	3/64	33x .55	421	500
8	Solid	1/2	3/64	37x .64	538	500
6	Solid	1/2	3/64	44x .74	803	1000
Stranded						
14	7	3/64	3/64	26x .46	239	500
12	7	3/64	3/64	32x .53	384	500
10	7	3/64	3/64	34x .58	445	500
8	7	1/64	3/64	39x .68	570	500
6	7	1/64	1/2	46x .79	855	1000
4	7	1/64	1/2	51x .88	1047	1000
3	7	1/64	1/2	54x .94	1175	1000
2	7	1/64	1/2	57x1 .00	1323	1000
1	19	5/64	5/64	.67x1 .18	1844	1000
1/0	19	5/64	5/64	.71x1 .26	2085	1000
2/0	19	5/64	5/64	.76x1 .35	2371	1000
3/0	19	5/64	5/64	.81x1 .45	2720	1000
4/0	19	5/64	5/64	.87x1 .57	3140	1000

3-Conductor

Americore Type RML—Code Grade
Amerite Type RPML—Performance Grade (30%)
Amperox Type RHML—Heat-Resistant Grade



Size A.W.G.	No. Strands	THICKNESS, INCHES		Approx. Outer Dimensions Inches	Approx. Net Wt. Lb. per 1000 Ft.	No. Ft. on Std. Reels
		Rubber Wall	Lead Sheath			
Solid						
14	Solid	3/64	3/64	* 56	593	1000
12	Solid	3/64	3/64	* 60	660	1000
10	Solid	3/64	3/64	* 64	753	1000
8	Solid	1/2	3/64	* 74	952	1000
6	Solid	1/2	3/64	* 84	1340	1000
Stranded						
14	7	3/64	1/64	* 58	618	1000
12	7	3/64	1/64	* 62	692	1000
10	7	3/64	1/64	* 67	795	1000
8	7	1/64	3/64	* 78	1007	1000
6	7	1/64	5/64	* 89	1427	1000
4	7	1/64	7/64	* 99	1741	1000
3	7	1/64	9/64	*1 05	1945	1000
2	7	1/64	11/64	*1 12	2187	1000
1	19	5/64	5/64	*1 31	2941	1000
1/0	19	5/64	5/64	*1 40	3321	1000
2/0	19	5/64	5/64	*1 50	3770	1000
3/0	19	5/64	5/64	*1 60	4320	1000
4/0	19	5/64	7/64	*1 76	5413	1000
250,000	37	6/64	7/64	*1 93	6178	1000
300,000	37	6/64	7/64	*2 05	6930	1000
350,000	37	6/64	7/64	*2 18	7660	500
400,000	37	6/64	8/64	*2 29	8926	500
450,000	37	6/64	8/64	*2 38	9640	500
500,000	37	6/64	8/64	*2 47	10335	500

*Outside diameter.

Amerite Type SD Service Drop Cable



2-Conductor



3-Conductor

This cable is approved by the Underwriters' Laboratories for use in accordance with rules of the National Electrical Code. Tamper-proof type; neutral conductor is applied concentrically over the inner insulated conductors. The inner conductors are insulated with Amerite 30% performance grade rubber compound. The outer covering is a flame-retarding, moisture-resistant braid.

Size Insulated A.W.G.	Size Concentric or Conductor A.W.G.	2-Conductor		3-Conductor			
		Approx. O.D. In.	Approx. Net Wt. Lb. per 1000 Ft.	Approx. No. Ft. on Std. Coils	Approx. Outer Dimensions In.	Approx. Net Wt. Lb. per 1000 Ft.	Approx. No. Ft. on Std. Coils
Solid							
12	12	.335	92	250	.374x .510	150	250
10	10	.362	120	250	.414x .565	198	250
8	8	.424	170	250	.468x .710	285	250
6	8	.456	215	250	.505x .780	362	200
6	6	.468	244	250	.515x .790	398	150
Stranded							
12	12	.345	95	250	.384x .537	155	250
10	10	.375	125	250	.426x .595	205	250
8	8	.440	178	250	.485x .745	295	250
6	8	.478	223	250	.525x .820	375	200
6	6	.490	255	250	.535x .830	415	150
4	6	.545	320	200	.585x .925	535	150
4	4	.560	370	200	.600x .940	590	150
2	4	.620	475	150	.660x1 .05	780	100
2	2	.648	550	150	.675x1 .07	885	100

Amerite Type SD-F 3-Conductor Service Drop Cable

U. S. Patent No. 2163235



Approved by the Fire Underwriters for the same service as standard Type SD. Similar in construction to standard Type SD cable except for the outer covering. Instead of a braid, this cable is protected by a unique outer sheath consisting of the neutral wires deeply embedded in a covering of impregnated felted cotton.

Size Insulated A.W.G.	Size Concentric or Conductor A.W.G.	2-Conductor		3-Conductor			
		Approx. O.D. In.	Approx. Net Wt. Lb. per 1000 Ft.	Approx. No. Ft. on Std. Coils	Approx. Outer Dimensions In.	Approx. Net Wt. Lb. per 1000 Ft.	Approx. No. Ft. on Std. Coils
Solid							
12	12	.29	74	250	.35 x .51	133	250
10	10	.33	104	250	.38 x .56	179	250
8	8	.40	162	250	.46 x .70	274	250
Stranded							
12	12	.30	78	250	.36 x .53	140	250
10	10	.34	108	250	.40 x .59	190	250
8	8	.42	169	250	.48 x .73	289	250
6	8	.48	219	250	.51 x .81	374	200
6	6	.50	253	250	.53 x .83	409	150
4	6	.55	315	200	.58 x .93	534	150
4	4	.57	370	200	.61 x .95	590	150
2	4	.63	465	150	.67 x1 .07	778	100
2	2	.66	551	150	.70 x1 .10	867	100

Amerite Type SE Service Entrance Cable



A cable of tamper-proof construction. Has wires of neutral conductor applied helically around inner insulated conductors.

Made in two different styles, both approved by Underwriters' Laboratories for the same type of service.

Style A cable has flat steel armor applied over the neutral conductor.

Style U cable does not have steel tape.

Size Insulated Conductor or Conductor A.W.G.		Style A—Solid		Style A—Stranded		Style U—Solid		Style U—Stranded	
Size	Concentric Neutral Conductor A.W.G.	Approx. O.D. In.	Approx. Net Wt. Lb. per 1000 Ft.	No. Ft. on Std. Coils	Approx. Outer Dimensions In.	Approx. Net Wt. Lb. per 1000 Ft.	No. Ft. on Std. Coils	Approx. Outer Dimensions In.	Approx. Net Wt. Lb. per 1000 Ft.
12	12	.391	142	250	.429x .546	215	250	.440x .578	225
10	10	.420	177	250	.462x .600	275	250	.476x .628	286
8	8	.477	246	250	.524x .719	390	250	.512x .740	300
6	8	.527	295	250	.564x .789	470	200	.556x .828	380
6	6	.545	330	250	.577x .812	510	150	.569x .841	420
12	12	.361	98	250	.393x .525	152	250	.404x .557	160
10	10	.388	130	250	.432x .585	200	250	.446x .613	210
8	8	.457	182	250	.494x .704	290	250	.517x .740	300
6	8	.497	220	250	.534x .774	365	200	.556x .828	380
6	6	.515	250	250	.547x .797	400	150	.569x .841	420
12	12	.372	102	250	.404x .557	160	250	.417x .570	170
10	10	.402	148	250	.440x .578	225	250	.453x .606	235
8	8	.432	185	250	.476x .628	286	250	.489x .641	296
6	8	.505	255	250	.542x .755	405	250	.565x .818	435
6	6	.549	305	250	.586x .843	490	200	.609x .866	520
4	6	.567	340	250	.599x .856	530	150	.622x .879	570
4	4	.615	410	200	.647x .952	660	150	.670x .975	700
4	4	.631	465	200	.655x .960	725	150	.678x .988	770
2	4	.691	580	150	.715x1.08	920	100	.738x1.10	1035
2	2	.713	655	150	.733x1.10	1035	100	.756x1.12	1140

Amerite Type ASE Service Entrance Cable Protected Type



This cable is approved by the Underwriters' Laboratories for use under conditions where the National Electrical Code calls for a cable of the protected type. It is also approved for underground service entrance and for range circuits. The insulated conductors are protected by a heavy armor of interlocking galvanized steel tape, covered with a flame-resistant, weatherproof braid.

Size A.W.G.	2-Conductor		3-Conductor		No. Ft. on Std. Reels
	Outer Dimensions Inches	Approx. Net Wt. Lb. per 1000 Ft.	Outer Dimensions Inches	Approx. Net Wt. Lb. per 1000 Ft.	
8	.59x .87	345	1.05	610	500
6	.63x .95	445	1.15	825	500
4	.71x1.07	605	1.25	1035	500
2	.85x1.27	875	1.38	1390	500

A. S. & W. Heavy Duty Braided Mining Cable

600 Volts

Many users prefer mining cable of the braided type. This cable is less expensive (in first cost) than all-rubber types, easier to splice and to repair, and considerably smaller in diameter.

Recommended for hard service at moderate cost. Flexible conductors are insulated with Americore rubber protected by a heavy braid of strong seine twine, deeply embedded in the insulation to prevent slipping.

The American Steel & Wire Company also manufactures loom-covered mining cable having the familiar fire-hose finish.

Mine Locomotive Gathering Cable—Single Conductor



Size A.W.G.	No. of Wires in Strand	Minimum Rubber Wall Inches	Approximate O.D. Inches	Approx. Net Wt. Lb. per 1000 Ft.
8	49 (or 133)	3/64	.43	128
6	49 (or 133)	3/64	.47	172
5	49 (or 133)	3/64	.50	200
4	133 (or 49)	3/64	.53	235
3	133 (or 49)	3/64	.57	282
2	133 (or 49)	3/64	.60	335
1	133 (or 259)	5/64	.68	420

Twin Parallel Mining Machine Cable



Size A.W.G.	No. of Wires in Strand	Minimum Thickness Rubber Inches	Approximate Outer Dimensions Inches	Approx. Net Wt. Lb. per 1000 Ft.
8	49 (or 133)	3/64	.47x .76	262
6	49 (or 133)	3/64	.51x .84	348
5	49 (or 133)	3/64	.54x .89	407
4	133 (or 49)	3/64	.57x .95	488
3	133 (or 49)	3/64	.60x1.01	580
2	133 (or 49)	3/64	.64x1.09	702
1	133 (or 259)	5/64	.74x1.25	890

Concentric Mining Machine Cable—2-Conductor

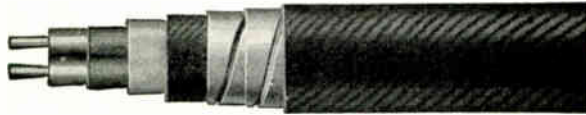


Size A.W.G.	No. of Wires in Strand	Minimum Thickness Each Rubber Wall, Inches	Approximate O.D. Inches	Approx. Net Wt. Lb. per 1000 Ft.
8	49 (or 133)	3/64	.63	275
6	49 (or 133)	3/64	.68	342
5	49 (or 133)	3/64	.71	416
4	133 (or 49)	3/64	.75	466
3	133 (or 49)	3/64	.79	550
2	133 (or 49)	3/64	.83	657
1	133 (or 259)	5/64	.95	846

A. S. & W. Type RLJFJ Steel-Taped Parkway Cable



Single Conductor



Flat Twin Conductor



3-Conductor

Amerseal Type RJ Non-Metallic Sheathed Parkway Cable



Single Conductor



Flat Twin Conductor



3-Conductor

Designed for burial direct in earth without conduit or other external protection. The insulation may be either rubber or varnished cambric.

Cable consists of rubber-insulated conductors encased in a lead sheath and protected by two layers of flat steel tape applied between two wraps of impregnated jute. Any specified grade of rubber insulation can be furnished suitable for any specified working voltage.

Suitable for burial direct in the earth. Used extensively for airport and street lighting and for railway signal work. Because of the light weight, this cable is also suitable for aerial service.

Insulated conductors are hermetically sealed in a tough resilient rubber sheath further protected by a covering of asphalted jute.

600 Volts—Solid

Size A.W.G.	Rubber Wall In.	Single Conductor		Twin Conductor		3-Conductor				
		Lead Wall In.	Approx. Net O.D. In.	Lead Wall In.	Approx. Net O.D. In.	Lead Wall In.	Approx. Net O.D. In.			
14	3/64	...	...	3/64	.81x .62	640	3/64	.92	1050
12	3/64	...	...	3/64	.84x .64	704	3/64	.96	1144
10	3/64	...	...	3/64	.95x .72	953	3/64	1.00	1266
8	3/64	3/64	.71	629	3/64	1.04x .77	1145	3/64	1.10	1545
6	3/64	3/64	.74	708	3/64	1.10x .80	1304	3/64	1.21	2006

600 Volts—Stranded

8	7/64	3/64	.72	648	3/64	1.07x .78	1200	3/64	1.13	1629
6	7/64	3/64	.76	746	3/64	1.15x .82	1378	3/64	1.25	2128
4	7/64	3/64	.81	868	3/64	1.28x .90	1854	3/64	1.43	2827
2	7/64	3/64	.90	1195	3/64	1.48x1.03	2525	3/64	1.58	3480
1	7/64	3/64	1.00	1425	3/64	1.62x1.10	2950	3/64	1.76	4430
1/0	7/64	3/64	1.04	1567	3/64	1.70x1.18	3270	3/64	1.85	4890
2/0	7/64	3/64	1.09	1736	3/64	1.83x1.22	3925	3/64	1.95	5450
3/0	7/64	3/64	1.14	1941	3/64	1.93x1.27	4370	3/64	2.06	6090
4/0	7/64	3/64	1.23	2416	3/64	2.05x1.33	4900	3/64	2.21	7375

3000 Volts—Solid

10	7/64	3/64	.77	712	3/64	1.21x .87	1538	3/64	1.28	2077
8	7/64	3/64	.80	774	3/64	1.26x .89	1674	3/64	1.34	2277
6	7/64	3/64	.90	1087	3/64	1.46x1.03	2260	3/64	1.55	3062

3000 Volts—Stranded

8	7/64	3/64	.82	820	3/64	1.29x .91	1741	3/64	1.45	2686
6	7/64	3/64	.95	1170	3/64	1.54x .98	2358	3/64	1.60	3203
4	7/64	3/64	.99	1315	3/64	1.63x1.13	2677	3/64	1.73	4001
2	7/64	3/64	1.05	1508	3/64	1.77x1.19	3440	3/64	1.88	4725
1	7/64	3/64	1.09	1638	3/64	1.85x1.23	3730	3/64	1.97	5150
1/0	7/64	3/64	1.13	1786	3/64	1.93x1.28	4055	3/64	2.06	5635
2/0	7/64	3/64	1.18	1960	3/64	2.02x1.32	4445	3/64	2.18	6675
3/0	7/64	3/64	1.26	2412	3/64	2.12x1.37	4900	3/64	2.30	7385
4/0	7/64	3/64	1.32	2676	3/64	2.27x1.46	5867	3/64	2.42	8235

5000 Volts—Solid

8	10/64	3/64	.95	1159	3/64	1.52x1.06	2360	3/64	1.61	3212
6	10/64	3/64	.99	1248	3/64	1.59x1.09	2546	3/64	1.72	3836

5000 Volts—Stranded

8	10/64	3/64	.97	1201	3/64	1.56x1.08	2452	3/64	1.68	3681
6	10/64	3/64	1.01	1309	3/64	1.66x1.15	2983	3/64	1.76	4038
4	10/64	3/64	1.06	1455	3/64	1.76x1.20	3298	3/64	1.87	4525
2	10/64	3/64	1.12	1654	3/64	1.88x1.25	3825	3/64	2.01	5280
1	10/64	3/64	1.16	1787	3/64	1.97x1.29	4120	3/64	2.10	5725
1/0	10/64	3/64	1.23	2172	3/64	2.05x1.33	4445	3/64	2.22	6700
2/0	10/64	3/64	1.27	2360	3/64	2.17x1.41	5250	3/64	2.32	7325
3/0	10/64	3/64	1.33	2587	3/64	2.28x1.43	5740	3/64	2.43	8055
4/0	10/64	3/64	1.46	3173	3/64	2.39x1.52	6325	3/64	2.55	8930

600 Volts—Solid

Size A.W.G.	Rubber Wall In.	Single Conductor		Twin Conductor		3-Conductor	
		Approx. O.D. In.	Approx. Net Wt. Lb. per 1000 Ft.	Approx. O.D. In.	Approx. Net Wt. Lb. per 1000 Ft.	Approx. O.D. In.	Approx. Net Wt. Lb. per 1000 Ft.
14	3/64	...	...	.65x .47	175	.70	258
12	3/64	...	...	.69x .49	200	.78	318
10	3/64	.50	141	.75x .53	250	.82	385
8	3/64	.52	180	.85x .57	330	.92	528
6	3/64	.56	223	.90x .61	420	1.07	734

600 Volts—Stranded

6	3/64	.58	240	.95x .63	455	1.15	816
4	3/64	.64	308	1.07x .71	615	1.26	1057
2	3/64	.72	421	1.27x .85	795	1.38	1413
1	3/64	.79	515	1.42x .92	1098	1.57	1790
1/0	3/64	.83	608	1.53x .99	1316	1.66	2092
2/0	3/64	.87	712	1.63x1.04	1545	1.81	2556
3/0	3/64	.93	844	1.72x1.09	1826	1.93	3020
4/0	3/64	1.06	1075	1.84x1.15	2172	2.08	3640

2001 to 3000 Volts—Solid

14	7/64	.56	168	.90x .60	312	1.06	562
12	7/64	.58	188	.93x .62	352	1.10	620
10	7/64	.60	210	.97x .64	394	1.18	730
8	7/64	.65	254	1.06x .70	480	1.24	848
6	7/64	.71	325	1.23x .81	696	1.37	1105

2001 to 3000 Volts—Stranded

6	3/64	.73	340	1.31x .86	735	1.42	1175
4	3/64	.78	416	1.40x .91	900	1.56	1480
2	3/64	.84	535	1.56x1.00	1178	1.68	1882
1	3/64	.88	606	1.64x1.04	1336	1.83	2240
1/0	3/64	.92	700	1.72x1.09	1536	1.92	2578
2/0	3/64	1.05	875	1.81x1.13	1773	2.02	2965
3/0	3/64	1.13	1050	1.91x1.18	2068	2.16	3510
4/0	3/64	1.19	1225	2.12x1.33	2572	2.28	4108

5000 Volts—Solid

14	10/64	.68	244	1.20x .81	530	1.32	848
12	10/64	.69	263	1.23x .82	565	1.34	908
10	10/64	.71	288	1.27x .85	626	1.38	1002
8	10/64	.74	324	1.32x .87	704	1.44	1130
6	10/64	.77	375	1.39x .91	814	1.54	1350

5000 Volts—Stranded

6	10/64	.80	394	1.44x .93	858	1.59	1424
4	10/64	.84	478	1.56x1.01	1068	1.69	1710
2	10/64	.90	594	1.68x1.07	1322	1.88	2232
1	10/64	1.02	738	1.76x1.11	1486	1.96	2510
1/0	10/64	1.07	835	1.84x1.15	1694	2.09	2910
2/0	10/64	1.14	990	1.97x1.24	1942	2.18	3320
3/0	10/64	1.19	1135	2.13x1.34	2388	2.30	3830
4/0	10/64	1.25	1316	2.25x1.40	2766	2.42	4450

A. S. & W. Varnished Cambric Insulated Wire and Cable

Varnished cambric cable is commonly used for general power station wiring and for general power distribution within manufacturing plants. Especially for use in heavy industries where large blocks of power are to be transmitted for relatively short distances.

Unless otherwise specified, varnished cambric insulated cable of American Steel & Wire manufacture conforms in all respects to I. P. C. E. A. specifications.

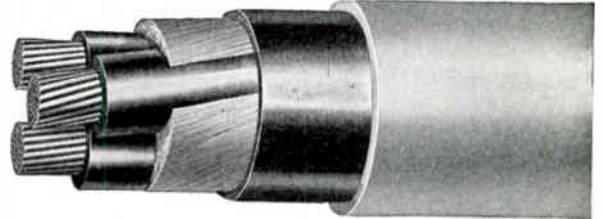
Varnished cambric is a heat-resistant insulation, unaffected by oil or grease. Cable with this type of insulation has high current-carrying capacity and high dielectric strength. Strong and rugged to withstand the mechanical strains of installation; simple to install and maintain.

Can be furnished in a wide range of sizes and working voltages, single or multiple-conductor; with braid, lead sheath, or steel-armored finish. The tables below show sizes to 4/0 A. W. G. only, but larger sizes can be furnished up to 2,000,000 cm.

Varnished Cambric and Braid



Varnished Cambric and Lead



600 Volts—Solid

Size A.W.G.	Single Conductor		Twin Conductor		3-Conductor	
	Var-nished Cambric Wall In.	Approx. O.D. In.	Var-nished Cambric Wall In.	Approx. O.D. In.	Var-nished Cambric Wall In.	Approx. O.D. In.
12	3/64	.235	3/64	.240x .415	3/64	.456
10	3/64	.256	3/64	.261x .457	3/64	.501
8	3/64	.282	3/64	.287x .509	3/64	.557
6	3/64	.352	3/64	.352x .639	3/64	.697

600 Volts—Solid

Size A.W.G.	Single Conductor		Twin Conductor		3-Conductor	
	WALLS, IN. Var. Cam. Lead	O.D. In.	WALLS, IN. Var. Cam. Lead	O.D. In.	WALLS, IN. Var. Cam. Lead	O.D. In.
12	3/64	.269	3/64	.269x .444	3/64	.485
10	3/64	.290	3/64	.290x .486	3/64	.562
8	3/64	.316	3/64	.347x .569	3/64	.618
6	3/64	.381	3/64	.412x .699	3/64	.757

600 Volts—Stranded

6	5/64	.373	5/64	.373x .681	5/64	.742
4	5/64	.422	5/64	.422x .779	5/64	.848
2	5/64	.482	5/64	.482x .899	5/64	.997
1	5/64	.553	5/64	.553x1.041	5/64	1.164
1/0	5/64	.594	5/64	.594x1.123	5/64	1.252
2/0	5/64	.640	5/64	.660x1.235	5/64	1.351
3/0	5/64	.691	5/64	.711x1.337	5/64	1.461
4/0	5/64	.749	5/64	.769x1.453	5/64	1.586

600 Volts—Stranded

6	5/64	.405	5/64	.433x .741	5/64	.803
4	5/64	.453	5/64	.513x .870	5/64	.939
2	5/64	.515	5/64	.573x .990	5/64	1.068
1	5/64	.613	5/64	.644x1.132	5/64	1.252
1/0	5/64	.654	5/64	.717x1.246	5/64	1.340
2/0	5/64	.700	5/64	.763x1.338	5/64	1.439
3/0	5/64	.751	5/64	.814x1.440	5/64	1.549
4/0	5/64	.809	5/64	.872x1.556	5/64	1.674

3000 Volts—Solid

10	5/64	.355	5/64	.355x .645	5/64x3/64	.683
8	5/64	.381	5/64	.381x .697	5/64x3/64	.739
6	5/64	.415	5/64	.415x .765	5/64x3/64	.812

3000 Volts—Solid

10	5/64	.384	5/64	.415x .705	5/64x3/64	.743
8	5/64	.410	5/64	.441x .756	5/64x3/64	.800
6	5/64	.444	5/64	.475x .845	5/64x3/64	.903

3000 Volts—Stranded

6	5/64	.436	5/64	.436x .807	5/64x3/64	.857
4	5/64	.485	5/64	.485x .905	5/64x3/64	.982
2	5/64	.545	5/64	.545x1.025	5/64x3/64	1.141
1	5/64	.585	5/64	.585x1.105	5/64x3/64	1.296
1/0	5/64	.626	5/64	.646x1.207	5/64x3/64	1.384
2/0	5/64	.672	5/64	.682x1.299	5/64x3/64	1.483
3/0	5/64	.723	5/64	.743x1.401	5/64x3/64	1.593
4/0	5/64	.781	5/64	.801x1.517	5/64x3/64	1.717

3000 Volts—Stranded

6	5/64	.468	5/64	.526x .897	5/64x3/64	.948
4	5/64	.515	5/64	.575x .995	5/64x3/64	1.053
2	5/64	.609	5/64	.635x1.115	5/64x3/64	1.182
1	5/64	.646	5/64	.676x1.201	5/64x3/64	1.369
1/0	5/64	.687	5/64	.749x1.310	5/64x3/64	1.457
2/0	5/64	.733	5/64	.795x1.402	5/64x3/64	1.556
3/0	5/64	.784	5/64	.846x1.504	5/64x3/64	1.666
4/0	5/64	.872	5/64	.904x1.620	5/64x3/64	1.820

5000 Volts—Solid

8	5/64	.503	5/64	.565x .974	5/64x3/64	.960
6	5/64	.568	5/64	.599x1.042	5/64x3/64	1.034

5000 Volts—Stranded

6	5/64	.592	5/64	.615x1.085	5/64x3/64	1.080
4	5/64	.640	5/64	.669x1.183	5/64x3/64	1.185
2	5/64	.702	5/64	.761x1.335	5/64x3/64	1.346
1	5/64	.738	5/64	.802x1.415	5/64x3/64	1.432
1/0	5/64	.779	5/64	.842x1.497	5/64x3/64	1.520
2/0	5/64	.857	5/64	.. .. .	5/64x3/64	1.619
3/0	5/64	.908	5/64	.. .. .	5/64x3/64	1.759
4/0	5/64	.966	5/64	.. .. .	5/64x3/64	1.883



Reliance U. R. C. Type Weatherproof Wire and Cable

N.E.C. Standard

Reliance weatherproof wire and cable complies with all requirements of A.S.A. specifications C8.18 for weather-resistant wire and cable, U.R.C. Type. Conductors may be solid or stranded, soft or hard drawn, covered with 2 or 3 weatherproof braids, as specified. Coverings are saturated with pure air-blown asphalt and finished with mica flake.

Solid—Triple-Braid



Standard packing: No. 1/0 and larger, on reels; No. 1 and smaller, in coils.

Size A.W.G.	O.D. In.	WEIGHT, POUNDS		REELS		COILS	
		Per 1000 Feet	Per Mile	Feet per Reel	Size Reel No.	Feet per Coil	Lb. per Coil
18	.155	16	84	.....	.....	5000	80
16	.165	20	106	.....	.....	4000	80
14	.180	25	132	.....	.....	4000	100
12	.210	35	185	.....	.....	3000	105
10	.250	53	280	.....	.....	2000	106
8	.290	75	396	4000	3-31	2000	150
6	.365	112	591	3000	3-31	1500	168
4	.410	164	866	1900	3-31	950	156
3	.435	199	1051	2000	3-31	1000	199
2	.505	260	1373	1300	3-31	1300	338
1	.535	316	1668	1000	3-31	1000	316
1/0	.595	407	2149	4300	3-42	860	350
2/0	.635	502	2651	3200	3-42	640	321
3/0	.720	629	3321	2500	3-42	500	315
4/0	.770	767	4050	2400	3-42	400	307

Stranded—Triple-Braid



Standard packing: No. 3 and larger, on reels; No. 4 and smaller, in coils.

Size A.W.G. or Cm.	No. Wires	O.D. In.	WEIGHT, POUNDS		REELS		COILS	
			Per 1000 Feet	Per Mile	Feet per Reel	Size Reel No.	Feet per Coil	Lb. per Coil
14	7	.19	26	137	.....	.....	4000	104
12	7	.22	37	195	.....	.....	3000	111
10	7	.26	54	285	.....	.....	2000	108
8	7	.31	78	412	4000	3-31	2000	156
6	7	.39	115	607	3000	3-31	1500	172
4	7	.44	170	898	2000	3-31	1000	170
3	7	.46	206	1087	2000	3-31	1000	206
2	7	.54	270	1426	3000	3-36	1000	270
1	7	.57	328	1732	3000	3-36	1000	328
1/0	7	.66	424	2239	3000	3-42	500	212
2/0	7	.71	522	2756	3000	3-42	500	261
3/0	7	.78	653	3448	2000	3-42	500	327
4/0	7	.84	800	4224	2000	3-42	400	320
250,000	19	.95	985	5201	2000	3-48	.....	.....
300,000	19	1.00	1174	6199	2000	3-48	.....	.....
350,000	19	1.06	1345	7102	2000	3-54	.....	.....
400,000	19	1.15	1553	8200	1500	3-48	.....	.....
450,000	37	1.19	1724	9103	1500	3-54	.....	.....
500,000	37	1.27	1894	10000	1000	3-48	.....	.....
600,000	37	1.35	2235	11801	1000	3-48	.....	.....
700,000	61	1.42	2650	13992	1000	3-48	.....	.....
750,000	61	1.45	2822	14900	1000	3-54	.....	.....
800,000	61	1.49	2992	15798	1000	3-54	.....	.....
1,000,000	61	1.61	3674	19399	1000	3-54	.....	.....
1,250,000	61	1.75	4508	23802	500	3-48	.....	.....
1,500,000	61	1.87	5380	28406	500	3-48	.....	.....
1,750,000	91	1.98	6193	32699	500	3-48	.....	.....
2,000,000	91	2.09	7008	37002	500	3-54	.....	.....

Amerfelt Weatherproof Wire

Amerfelt weatherproof wire, covered with impregnated felted cotton and one weatherproof braid is also manufactured by the American Steel & Wire Company.

Reliance Slow-Burning Wire and Cable

3 White Braids

N.E.C. Standard



Solid or stranded conductors are covered with 3 white braids, each thoroughly saturated with white flame-resistant compound. The outside is slicked down to produce a hard, smooth surface.

This wire does not carry flame and is especially useful for wiring in hot dry places.

Standard packing: No. 6 and larger, on reels; No. 8 and smaller, in coils.

Solid—Triple-Braid

Size A.W.G.	O.D. In.	WEIGHT, POUNDS		REELS		COILS	
		Per 1000 Feet	Per Mile	Feet per Reel	Size Reel No.	Feet per Coil	Lb. per Coil
18	.150	24	127	.....	.....	1000	24
16	.160	30	158	.....	.....	1000	30
14	.175	40	211	.....	.....	1000	40
12	.195	55	290	.....	.....	1000	55
10	.225	75	396	.....	.....	500	38
8	.270	100	528	.....	.....	500	50
6	.334	160	845	2000	3-30	500	80
4	.375	220	1162	2000	3-31	500	110
2	.442	320	1690	3000	3-36	1000	320
1	.475	405	2138	3000	3-36	1000	405
1/0	.510	495	2614	4300	3-42	860	426
2/0	.550	600	3168	3200	3-42	640	384
3/0	.620	760	4013	2500	3-42	500	380
4/0	.670	925	4884	2400	3-42	400	370

Stranded—Triple-Braid

Size A.W.G. or Cm.	No. Wires	O.D. In.	WEIGHT, POUNDS		REELS		COILS	
			Per 1000 Feet	Per Mile	Feet per Reel	Size Reel No.	Feet per Coil	Lb. per Coil
14	7	.19	42	222	.....	.....	1000	42
12	7	.21	51	269	.....	.....	1000	51
10	7	.24	74	391	.....	.....	500	37
8	7	.29	105	554	.....	.....	500	53
6	7	.36	165	871	2000	3-30	.....	.....
4	7	.41	230	1214	2000	3-31	.....	.....
2	7	.48	335	1769	3000	3-36	.....	.....
1	7	.52	420	2218	2000	3-36	.....	.....
1/0	7	.56	510	2693	3000	3-42	.....	.....
2/0	7	.60	625	3300	3000	3-42	.....	.....
3/0	7	.67	785	4145	2000	3-42	.....	.....
4/0	7	.73	960	5069	2000	3-42	.....	.....
250,000	19	.85	1120	5914	2000	3-48	.....	.....
300,000	19	.89	1310	6917	2000	3-48	.....	.....
350,000	19	.96	1500	7920	2000	3-48	.....	.....
400,000	19	1.01	1700	8976	1500	3-48	.....	.....
500,000	37	1.11	2080	10982	1000	3-49	.....	.....
600,000	37	1.19	2510	13253	1000	3-48	.....	.....
750,000	61	1.32	3100	16368	1000	3-48	.....	.....
800,000	61	1.35	3280	17318	1000	3-48	.....	.....
1,000,000	61	1.48	3980	21014	1000	3-54	.....	.....
1,250,000	61	1.61	5000	26400	500	3-48	.....	.....
1,500,000	61	1.74	6000	31680	500	3-48	.....	.....
1,750,000	91	1.88	6900	36432	500	3-54	.....	.....
2,000,000	91	1.98	7800	41184	500	3-54	.....	.....

A. S. & W. Magnet Wire



Made to meet A.S.T.M. standards. Widely known for high conductivity, soft temper, and easy winding properties.

Manufactured in all shapes—round, square, and rectangular; sizes 4/0 to 42 A.W.G. Insulations of baked enamel, cotton, silk, paper, asbestos, and glass.

Information on Amerglass, the new heat-resistant magnet wire with the high space factor, furnished on request.

A. S. & W. Bare Copper Wire



Round Copper Wire



Grooved Trolley Wire



Figure 8 Trolley Wire

Copper wire and strand manufactured by the American Steel & Wire Company complies in all respects with latest A. S. T. M. specifications—plain or tinned, soft, medium, or hard drawn.

Copper trolley wire is made in sizes 1/0 to 350,000 cm. (6/0), and in three different shapes—round, grooved, and figure 8. Size 6/0 grooved wire can be furnished to fit 4/0 hangers.

Amerclad Rubber-Sheathed Portable Cord and Cable



Type S Cord



Twin Mining Machine Cable

The insulated conductors of Amerclad cable are encased in a tough, resilient sheath of tire-tread rubber. Amerclad cable is extremely flexible, yet tough and durable enough to withstand severest usage.

All sizes and types are available from Type SJ cords no larger than a pencil to huge portable dredge cables 5 inches in diameter for operation at 13,000 volts.

Ask for the catalog describing:

- Portable Cords—Type S and Type SJ
- Oilproof Cords—Type N
- Locomotive and Mining Machine Cable
- Motor Lead Cable
- Welding Cable
- Shovel Cable, and Many Others.

Amerbestos Asbestos-Insulated Wire and Cable

AVC Power Cable



Insulated with felted asbestos or with a combination of asbestos and varnished cambric. Designed for operation at high temperatures that would soon destroy any other type of insulation.

AVC Mining Cable



Ask for the catalog describing:

- Asbestos-Insulated Rheostat and Switchboard Wire
- Stove Wire
- Boiler-Room Wire
- Apparatus Cable
- Control Cable
- Heat-Resistant Cord
- Fixture Wire

Type RU Simplex Latox 600 Volt Insulated Building Wire

Single Conductor

60°C. Latox Rubber, Weatherproof-Flameproof Finish
.018 Inches Latox Insulation



For rewiring as recommended by Edison Electric Institute and Underwriters' Laboratories.

A small diameter building wire offered for use in rewiring of existing buildings. Permission for its use must be obtained from the local authorities having jurisdiction.

Consists of tinned copper conductor with 90% Latox milled grainless rubber insulation, applied by the dip and pass process, special fibrous protective covering with a weatherproof-flameproof finish.

Because of its small overall diameter allows a maximum number of conductors to be placed in existing conduit systems and has been made available for that purpose. The fibrous covering affords mechanical protection to the conductor insulation where the inside of the conduits may be corroded or rough.

Size A.W.G.	Solid Single Fibrous Covering		Double Fibrous Covering	
	O.D. Inches	Weight Lb. per 1000 Ft.	O.D. Inches	Weight Lb. per 1000 Ft.
14	.145	21	.178	25
12	.161	29	.194	34
10	.181	42	.214	47
		Stranded		
14	.155	23	.188	27
12	.176	32	.209	37
10	.202	47	.235	51

Type RHT Simplex Superaging 600 Volt Small Diameter Building Wire

Single Conductor

75°C. Rubber, Weatherproof-Flameproof Finish

For rewiring. Special permission for use of small diameter building wire must be obtained from the local authorities having jurisdiction.

Solid Single Braid				Stranded Single Braid			
Size A.W.G.	Rubber Wall Inches	O.D. Inches	Wt. Lb. per 1000 Ft.	Size A.W.G.	Rubber Wall Inches	O.D. Inches	Wt. Lb. per 1000 Ft.
14	3/64	.16	21	14	3/64	.17	22
12	3/64	.18	28	12	3/64	.19	29
10	3/64	.20	40	10	3/64	.22	42
8	3/64	.25	70	8	3/64	.28	72

Type SN Simplex Plastex 600 Volt Building Wire

Single Conductor

60°C. Synthetic Insulation—Non-Braided

For rewiring. Special permission for use of small diameter building wire must be obtained from the local authorities having jurisdiction.

Solid				Stranded			
Size A.W.G.	Rubber Wall Inches	Approx. O.D. Inches	Wt. Lb. per 1000 Ft.	Size A.W.G.	Rubber Wall Inches	Approx. O.D. Inches	Wt. Lb. per 1000 Ft.
14	3/64	.130	19	8	3/64	.240	72
12	3/64	.147	28	6	4/64	.310	117
10	3/64	.168	40	4	4/64	.358	172
8	3/64	.227	67	2	4/64	.420	259
..	..	..	..	1	5/64	.490	332
..	..	..	..	1/0	5/64	.532	409
..	..	..	..	2/0	5/64	.579	504
..	..	..	..	3/0	5/64	.630	624
..	..	..	..	4/0	5/64	.688	770

Prices Upon Application

Tirex Selenium Rubber Armored Cable

600 Volts

Single Conductor—Portable



Specially suitable for electric mine locomotives of the gathering reel type where it is necessary to leave the trolley wire in the main entry and enter rooms to pick up or place cars.

Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.	Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.
8	49	.42	175	*1	133	.72	580
*6	49	.48	250	1/0	133	.76	635
*5	49	.51	275	1/0	259	.77	625
*4	49	.54	325	2/0	133	.82	750
*4	133	.55	330	2/0	259	.82	730
*3	49	.60	395	3/0	259	.88	950
3	133	.62	405	3/0	427	.89	970
2	133	.65	465	4/0	259	.94	1110
2	259	.65	435	4/0	427	.95	1140

*With steel reinforcing strands—to be used as mine locomotive cable.

With or without steel reinforcing strands.

Twin—Parallel



For use where 2-conductor cable of this construction is preferred. Easy to reel as it lies flat. May also be used for battery charging.

Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.	Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.
6	49	.66x1.03	620	1	133	.91x1.50	1325
4	133	.75x1.19	795	1	259	.90x1.49	1305
3	133	.79x1.26	900	1/0	259	.94x1.51	1490
2	133	.82x1.33	1020	2/0	259	.99x1.61	1870

2-Conductor—Concentric



This type of cable is recommended for mining machines where the greater weight and diameter of the 2-conductor twisted type is a disadvantage.

Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.	Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.
8	49	.64	360	1/0	133	1.12	1440
6	49	.77	505	1/0	259	1.12	1425
5	49	.79	570	2/0	133	1.19	1660
4	49	.84	750	2/0	259	1.19	1640
4	133	.85	745	3/0	259	1.23	1995
3	49	.88	855	3/0	427	1.24	2015
3	133	.90	855	4/0	259	1.31	2310
2	133	.94	965	4/0	427	1.32	2340
1	133	1.06	1245	...	...	...	...

2-Conductor—Round



This twisted cable is recommended for use on mining machines, cranes and portable equipment. An excellent utility cable for d.c. motors and single-phase portable machinery and for battery charging.

Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.	Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.
8	49	.79	500	1/0	133	1.58	2155
6	49	.91	760	1/0	259	1.57	2125
5	49	1.00	875	2/0	133	1.71	2815
4	49	1.11	995	2/0	259	1.70	2775
4	133	1.14	1010	3/0	259	1.82	2940
3	49	1.21	1160	3/0	427	1.84	3000
3	133	1.24	1285	4/0	259	1.98	3870
2	133	1.31	1445	4/0	427	2.01	3955
1	133	1.49	1910	...	...	...	...

Type W—3-Conductor Without Ground Wires



For 3-phase portable machinery. Frequently used for dredges and shovels. The tough outer armor is suited for rough work out of doors. Atmospheric conditions, oils, acids, and greases do not affect this cable to any appreciable extent.

Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.	Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.
8	49	.90	735	1	259	1.56	2210
6	49	.99	910	1/0	133	1.71	2945
5	49	1.09	1060	1/0	259	1.70	2905
4	49	1.21	1225	2/0	133	1.82	3345
4	133	1.23	1340	2/0	259	1.81	3250
3	133	1.31	1510	3/0	259	1.97	4055
2	133	1.39	1935	3/0	427	1.99	4120
2	259	1.38	1905	4/0	259	2.11	4645
1	133	1.57	2245	4/0	427	2.13	4730

Type W—4-Conductor Without Ground Wires



For 3-phase portable machinery where an extra conductor is needed for grounding purposes, also for use on 2-phase circuits.

Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.	Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.
8	49	.97	845	1	259	1.74	3015
6	49	1.07	1065	1/0	133	1.87	3305
6	133	1.10	1065	1/0	259	1.85	3245
5	49	1.18	1355	2/0	133	2.02	4295
4	49	1.32	1575	2/0	259	2.01	4235
4	133	1.35	1590	3/0	259	2.15	4815
3	133	1.43	1795	3/0	427	2.16	4885
2	133	1.55	2270	4/0	259	2.34	5635
2	259	1.54	2230	4/0	427	2.37	5760

Type S Simplex-Tirex Flexible Rubber Cord For Electrical Tools and Appliances



The flexible copper conductors have high grade, not less than 30 per cent, rubber insulation. The insulated conductors are twisted and covered with a 60 per cent Selenium rubber which is highly resistant to abrasion.

Single conductor Type S is approved by Underwriters for car wiring only. Type S Simplex-Tirex Cord in 2, 3, and 4-conductor is N.E.C. standard for 600 V.W.P. It fits standard bushings and is satisfactory for portable lamps, tools, and other appliances.

Usually supplied in standard lengths of approximately 250 feet (from 200 to 270 feet). The cartons are so constructed that any length of cord may be drawn out as needed without disturbing the remainder of the coil. Two-conductor No. 14 packed in cartons; 2 and 3-conductor No. 16 packed in spools or cartons; 4-conductor No. 16 packed in cartons;

2, 3, and 4-conductor No. 18 packed in spools or cartons. Other sizes and in coils. All sizes can be furnished in coils or longer lengths can be shipped on reels.

Size B. & S.	Strands	1-Conductor		2-Conductor	
		O.D. In.	Wt. Lbs. per 1000 Feet	O.D. In.	Wt. Lbs. per 1000 Feet
18	No. 30 A.W.G.	.183	23	.390	82
16	No. 30 A.W.G.	.193	27	.405	93
14	No. 30 A.W.G.	.248	42	.530	158
12	No. 34 A.W.G.	.263	54	.605	316
10	No. 34 A.W.G.	.288	70	.640	359
		3-Conductor		4-Conductor	
18	No. 30 A.W.G.	.405	93	.435	114
16	No. 30 A.W.G.	.430	111	.485	140
14	No. 30 A.W.G.	.560	299	.605	340
12	No. 34 A.W.G.	.635	355	.665	395
10	No. 34 A.W.G.	.690	420	.745	490

Prices upon application.

Type SJ Tirex Portable Cord Selenium Rubber Armored 300 Volts



2-Conductor

A small lightweight cord suitable for service in offices, dwellings and similar places where a small flexible conductor is needed. It is intended for service on such equipment as vacuum cleaners, refrigerators, fans, washing machines, lamps, office equipment and small electric tools which do not require a heavy, sturdy cord.

Nos. 18 and 16 are approved by Underwriters' Laboratories, Inc.

Packed in cartons or on spools, each package containing approximately 250 feet of 2-conductor cord.

2-Conductor			
Size A.W.G.	18	16	14
Approx. O.D. inches	.305	.330	.425
Approx. Gross Wt. per 1000 Ft. . . pounds	61	73	116
3-Conductor			
Size A.W.G.	18	16	14
Approx. O.D. inches	.335	.360	.470
Approx. Gross Wt. per 1000 Ft. . . pounds	77	95	150
4-Conductor			
Size A.W.G.	18	16	
Approx. O.D. inches	.360	.390	
Approx. Gross Wt. per 1000 Ft. . . pounds	90	110	

Tirex Shot Fire Cable

Two-conductor



Suitable for rough work in damp or wet places. Not affected by acid, gas or oil.

The particular features which will appeal to the shot firer, are the small diameter of about 1/4 inch and the light weight of 4 1/2 pounds to 100 feet.

Cable is flexible and has adequate tensile strength for the work for which it was designed. Does not kink or snarl.

Size A. W. G.	Approx. O. D. Inches	Approx. Wt., Lbs. per 1000 Ft.	Price per 1000 Ft.
18	.270	45	

Tirex Welding Cable

Super Flexible—Single Conductor Selenium Rubber Armored



This cable is extremely flexible and designed so as not to drag on operator's wrist. Safe for both operator and the public when used on streets and public ways.

Conductor consists of fine copper wires stranded to give maximum flexibility. The insulation is compounded and cured to meet the unusual service conditions. It strips clean because of the separator between the insulation and the conductor. A tough, selenium rubber sheath provides protection from abrasion.

Size A.W.G.	2	1	1/0	2/0	3/0	4/0
Strands No. 34 N.T.	1715	2156	2695	3381	4263	5341
Minimum O.D. in.	.560	.625	.675	.750	.815	.900
Approx. Gross Wt. per 1000 Ft. pounds	350	445	525	635	765	945

Tirex Motor Lead Cable Single Conductor—Paper Taped Selenium Rubber Armored



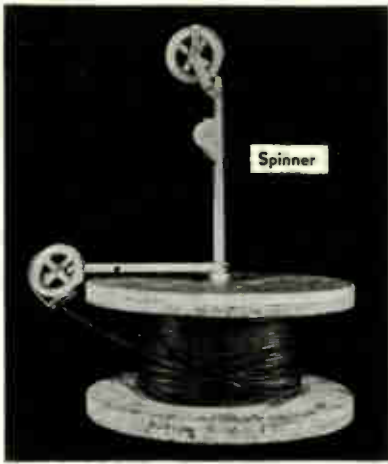
This cable is recommended for the interior wiring of motors, mine locomotives and wherever a flexible cable is needed; also where it is an advantage to have the rubber strip easily from the copper leaving it clean for soldering into lugs or connectors.

Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.	Size A.W.G.	No. of Strands	O.D. In.	Gross Wt. Lb. per 1000 Ft.
8	49	.42	175	2	259	.65	445
6	49	.48	250	1	133	.72	570
6	133	.49	245	1/0	133	.76	635
5	133	.52	275	1/0	259	.77	625
4	49	.54	325	2/0	133	.82	750
4	133	.55	330	2/0	259	.82	730
3	133	.62	405	3/0	427	.89	970
2	133	.65	465	4/0	427	.95	1140



Accessories for Simplex-Telex Twin Underground Telephone Cable

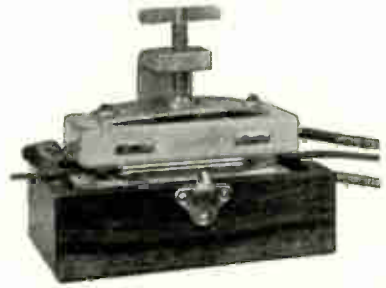
Spinners



A means of transposing conductor every 3 to 5 feet, and at the same time protecting the cable as it comes off over the head of the reel.

Each

Vulcanizers



Including mold, indicating light, buzzer, battery leads and clips, self-contained in cover box for use with 6-volt automobile battery.

Each

No. D-156209 U-Type Terminal Boxes

For rubber jacket or armored cable.

Each

No. 150-A Loading Coil Cases Equipped with No. 628 Coil



Each

Crimping Tools



For crimping brass sleeves to copper conductor.

Each \$4.00

Splicing Kits



Rubber slab and four brass conductor splicing sleeves, two extra. Packed in individual packages. For One Splice
.....each

No. 17T Graybar Wire Laying Plows



Used for placing U distribution wire and shield wire from the road or main run to the subscribers' premises.

Designed to be pulled through the ground with a light construction truck direct or with the winch rope from such a truck. A 5000-pound shear pin towing connection protects plow when an obstruction is met. This shear pin is a 1/4x2-inch steel rivet.

Plow is of all steel construction; replaceable plow point and landside are of special iron. Two loading weights are furnished. These weights mount, without bolts, on crossbar near handle.

Shipped in five bundles. Can be assembled by connecting parts and placing six bolts.

Weight: complete plow, less loading weights, 170 pounds; loading weight, 75 pounds.

Prices upon application.

A heavy plow built suitable for laying Simplex-Telex Twin Underground Telephone Cable under all soil conditions can also be furnished.

Prices upon application.

Simplex-Telex Twin Underground Telephone Cable

Anhydrex AA Deproteinized Rubber Jacket or Armored

A rubber insulated, non-water absorptive telephone cable made with a rodent resistant tough rubber jacket, or with an armor over the jacket, but without lead, for laying directly in the ground for rural telephone lines, private estates and similar applications.

Standard packages of 2500 feet of rubber jacketed and 1500 feet of armored cable are carried in stock on 22-inch non-returnable reels. No charge for this stock type reel; and no credit will be allowed.

If other lengths are required, there will be an extra charge for packaging or for the use of returnable reels.

Rubber Jacket Telex Cable



No. 17 solid tinned copper twin cable, insulated with tough rubber jacket.

Outside diameter, .350x.200-inch.
Standard package is 2500-foot length on 22-inch non-returnable reel.

Shipping weight per 1000 feet, 46 pounds.
Per 1000 Feet.....

Armored Telex Cable



No. 17 solid tinned copper twin cable, insulated with a tough rubber jacket; armored with 2 bright steel tapes. Impregnated paper tape overall.

Does not require a ground wire, but the following precautions should be taken.

At each splice a jumper wire should be soldered from steel to steel to assure continuous electrical circuits in the steel.

At the pole line end a jumper wire should be soldered onto the steel of the cable and connected to the grounding system which is always a part of the installation at the last pole of the overhead run.

The jumper wire should be about No. 14 A.W.G. either tinned or lead coated and without insulation. A special solder should be used to resist corrosion.

Outside diameter, .418x.315 inch.
Standard package is 1500-foot length on 22-inch non-returnable reel.

Shipping weight per 1000 feet, 134 pounds.
Per 1000 Feet.....

Telex Ground Wire Rubber Jacket

No. 14 (.066) lead dipped bare copper wire for grounding. Furnished on 11-inch non-returnable reels containing 3000 feet.

Shipping weight per 1000 feet, 14.1 pounds.
Per 1000 Feet.....

Simplex-Anhydrex Underground Cable



A modern cable particularly applicable to networks, series lighting circuits, municipal street lighting, park, playground and airport illuminating systems, etc.

Consists essentially of conductors insulated with Anhydrex AA-60 deproteinized rubber insulation, protected with a hard-service rubber jacket.

Suitable for burial direct in the ground or in ducts.

Specifications and prices upon application.

Whitney Blake Long Life Telephone Wires

Inside Wire

No. 22, Soft Copper, Twisted Pair, 1/4-Inch Rubber Insulation, Specification 4256

No. 19, Soft Copper, Twisted Pair, 1/2-Inch Rubber Insulation, Specification 4926



Used inside buildings for extending circuits from arrestors or other terminating fixtures of outside lines to station sets. Furnished in single, pair, triple, and quadruple.

Conductor is tinned soft copper in accordance with A.S.T.M. Standard B-33. Each conductor is covered with a braid of brown hard glazed cotton yarn, having polarity marker threads woven in the braid.

	22 Ga.	19 Ga.
Conductor Resistance.....	ohms per 1000 feet	20 10
Diameter Over Rubber.....	inches	.055 .094
Coil Eye.....	inches	9 9
Weight per 1000 Feet.....	pounds	10 21

Cellulose Acetate Lacquered Distributing Frame or Jumper Wire

No. 22, Twisted Pair, 1 Conductor Black, 1 Conductor White, Specification 2239

No. 20, Twisted Pair, 1 Conductor Brown, 1 Conductor Brown-Black, Specification 2039



Used on distributing frames and cross connecting racks.

Conductor is tinned soft copper in accordance with A.S.T.M. Standard B-33. Conductor has flexible high dielectric strength coating of enamel. Over the conductor is applied two wraps of Tussah silk and one cotton wrap treated with multiple coats of flame-resisting clear cellulose acetate lacquer. There is sufficient lacquer to prevent fraying of the ends when the conductors are stripped. Also furnished in triple and quadruple.

	Spec. 2239	Spec. 2039
Conductor Resist.....	ohms per 1000 ft.	20 11
Coil Eye.....	inches	7 7
Weight per 1000 Feet.....	pounds	7 9

Crapo Iron Rubber-Insulated Wire

Drop wire can be furnished with galvanized Crapo iron conductors. These conductors possess high strength and conductivity and are galvanized so that the protective coating will not crack or peel even if the wire is bent or twisted abruptly. Rubber insulation applied to these wires is the same grade as other telephone wires. Braids are closely woven and weatherproofed with air-blown asphalt saturant and Stearine pitch-mica finish. The raised tracer is put in the braid of one of the twisted pair wires.

Drop Wire

	Twisted Pair				Parallel		
B.W.G.....	19	18	16	14	19	18	
Conductor Resistance (Max.).....	ohms per 1000 feet	42.6	31.3	17.8	10.09	42.6	31.3
Conductor Breaking Load (Minimum).....	pounds	100	130	250	405	100	130
Diam. Over Rubber							
Insulation.....	inches	7/64	1/32	5/32	1/16	7/64	1/32
Coil Eye.....	inches	16	16	16	16	16	16
Weight per 1000 Ft.....	pounds	29	39	60	75	25	35

Tree Wire

Used mostly in single conductor. Has a Hawser cord braid applied over the rubber insulation for abrasion resistance. For use in applications where ordinary braided wires do not stand up under chafing and rubbing.

	Single				Twisted Pair all		
B.W.G.....	16	14	12	10	18	18	
Conductor Resistance (Max.).....	ohms per 1000 ft.	17.8	10.09	6.32	4.20	31.3	31.3
Conductor Breaking Load (Minimum).....	pounds	250	405	675	1025	130	130
Diam. Over Rubber							
Insulation.....	inches	5/32	1/16	15/64	1/32	1/32	1/32
Coil Eye.....	inches	16	16	16	16	16	16
Wt. per 1000 Ft.....	pounds	39	49	65	80	45	45

Whitney Blake Long Life Telephone Wires

Telephone wire is the chief product of The Whitney Blake Company and years of specialization in this field enables this company to produce long life telephone wire. Research and study of its products go on continuously to make these products better, longer lived, and less expensive for the telephone industry to use.

The Graybar Electric Company, the oldest supplier to the telephone industry, is the sole distributor of Whitney Blake products, and maintains eighty-three houses in principal trading centers with adequate stocks.

No. 17 Drop Wire

Bronze, Parallel, Specification 5730
Copperweld, Parallel, Specification 5791



Used to extend telephone circuit from open wire leads or distributing cable terminals to the subscriber's station.

Bronze or Copperweld furnished to meet varying climatic conditions. The standard bronze conductor is known as signal bronze, but Hitenso bronze having properties listed below can be supplied when specified. All conductors are tinned in accordance with A.S.T.M. Standard B-33.

The rubber insulation is high compression-resistant and long life compound. It has excellent moisture resistance, providing the finished wire with insulation resistance in excess of 2,500 megohms per 1,000 feet. A raised ridge in the rubber insulation provides polarity identification.

Braid is applied over the two parallel laid conductors. The long staple 2-ply cotton yarn used in the braid is 50% heavier than formerly. Closely woven braids of this heavier yarn add life to the wire.

The braid is completely saturated with an air-blown petroleum asphalt of crude oil origin that is moisture-resisting and weather-resisting. A tough, flexible, high melting point, finishing coat of Stearine pitch and mica is applied over the saturated braid. The life of rubber and braid are lengthened by this effective seal against light, moisture, and oxygen.

	Spec. 5730	Spec. 5791	Hitenso Bronze
Conductor Resist. ohms per 1000 ft.	*15	20	6
Conductor Breaking Load. pounds	170	200	145
Diameter Over Rubber. inches	.110	.110	.110
Coil Eye. inches	16	16	16
Weight per 1000 Feet. pounds	31	31	31

*Signal bronze.

Bronze, Twisted Pair, Specification 3730
Copperweld, Twisted Pair, Specification 3791



Has a raised tracer in the rubber insulation. This permits more even application of weatherproof finish and more uniform wear of the braid.

Has same grade rubber insulation, braid, and weatherproofing as Specification 5730. Conductor resistance, breaking strength, and diameter over rubber same as shown above. Specification 3730 can also be furnished with Hitenso bronze conductor.

	Spec. 3730	Spec. 3791
Coil Eye. inches	16	16
Weight per 1000 Feet. pounds	33	33

Bronze, Parallel, Specification 4746
Hawser Cord Braid, Abrasion-Proof Tree Wire



Constructed same as Specification 5730, with the exception of the heavy Hawser cord braid. Made for service where swaying of limbs rub and fray the standard braids quickly.

Standard conductor is signal bronze. Conductor resistance breaking strength, diameter over rubber, rubber insulation and weatherproofing are same as Specification 5730.

Weight, 47 pounds per 1000 feet.

Outside Wire

No. 14, Hard Copper, Twisted Pair, Specification 4830



Used in drops extending the telephone circuit from open wire leads or distributing cable terminals, where, the transmission efficiency of the wire must be higher than that of No. 17 bronze or Copperweld. Also used in bridling toll line circuits.

Rubber insulation, braid, and weatherproofing same as Specification 5730. Wire has raised ridge in rubber insulation for polarity identification.

Conductor Resistance. ohms per 1000 feet	3
Conductor Breaking Strength. pounds	190
Diameter Over Rubber. inches	.156
Coil Eye. inches	16
Weight per 1000 Feet. pounds	60

No. 16, Hard Copper, Twisted Pair, Specification 3632



For the same applications as Specification 4830. Rubber insulation, braid, and weatherproofing are the same grade as Specification 5730.

Conductor Resistance. ohms per 1000 feet	4.55
Conductor Breaking Load. pounds	120
Diameter Over Rubber. inches	.125
Coil Eye. inches	16
Weight per 1000 Feet. pounds	42

Bridle Wire

Soft Copper, Twisted Pair, Specification 4823



Used in ring wiring and in bridling open wire lines.

Conductor is tinned soft annealed copper in accordance with A.S.T.M. Standard B-33. Rubber insulation, same as Specification 5730. Braid has raised tracer thread or threads to identify extra conductors in pair, triple, or quadruple wires; finished with high melting point black wax.

Gage No.	18	19	20
Conductor Resist. ohms per 1000 ft.	7.5	10	11
Diameter Over Rubber. inches	.090	.080	.072
Coil Eye. inches	16	9	9
Weight per 1000 Feet. pounds	31	22	20

No. 22 Colored Duct Wire

Soft Copper, Twisted Pair, Specification 5689



Used in building conduit systems, for building wiring in damp locations, etc. Single conductor is yellow; twisted pair, green and red; triple, red, green, and yellow; quadruple, red, green, yellow, and black.

Conductor is tinned soft copper in accordance with A.S.T.M. Standard B-33. Rubber insulation is moisture-resistant compound which provides wire with an insulation resistance of 750 megohms per 1,000 feet after 96 hours immersion in water. Each conductor has a braid of special size cotton to keep the diameter small and impregnated with asphalt saturant and finished with special colored pitches. A coating of paraffin is applied overall.

Put up in fishline coils of 200 feet; tied in bundles.	
Conductor Resistance. ohms per 1000 feet	20
Diameter Over Rubber. inches	.060
Bundle Coil Eye. inches	5
Weight per 1000 Feet. pounds	14

Whitney Blake Shielded Wires and Cordage

For Sound Amplification Systems, Speech Input Equipment, and Intercommunicating Systems

Whitney Blake Microphone Extension Cordage



No. GB-403-A

A flexible cable for microphone circuits and low impedance transmission lines.

Made with No. 18 gage extra flexible stranded conductors, 30% rubber insulation, braided tinned copper shield, cotton wrapping, and a tough 40% black rubber jacket overall.

Regular round wire shield is standard.

O.D., .280-inch.

Put up in 250-foot coils.

Weight per 1000 feet, 60 pounds.

Whitney Blake Microphone Transmission Line Cable



No. GB-213-A—Standard Round Wire Shield



No. GB-213-FS—Special Flat Wire Shield

A cable for fixed portion of microphone circuits in conduit, etc.

Made with No. 22 tinned solid conductors, cotton wrapped, 30% pushback rubber insulation, tinned copper shield, cotton wrapping, and 40% gray outer rubber jacket.

Available with regular round wire shield or with flat wire shield which reduces diameters, thereby lowering costs.

No.	GB-213-A	GB-213-FS
O.D.	.218 in.	.195 in.
Weight per 1000 Feet	29 lb.	26 lb.

Put up on 500-foot spools.

Whitney Blake Interpanel Wiring and Communication System Cordage



No. GB-205-A—Standard Round Wire Shield



No. GB-205-FS—Special Flat Wire Shield



No. GB-206-A—Standard Round Wire Shield



No. GB-206-FS—Special Flat Wire Shield



No. GB-207-A

For use in wiring panel boards. Small diameters give a neat appearance and reduce bulk on back of board.

Also for voice circuits in communication systems in offices, factories, hospitals, etc.

No. GB-205-A.—Made with No. 20 gage tinned enameled conductor, cotton wound and braided, beeswaxed, and braided bare copper shield over twisted conductors.

Available with regular round wire shield or with flat wire shield which reduces diameters thereby lowering costs.

Nos. GB-206-A AND GB-207-A.—Constructed the same as Nos. GB-205-A and GB-208-A, respectively, but have an additional outer black cotton braid.

Regular round wire shield is standard.

Available with regular round wire shield or with flat wire shield which reduces diameters thereby lowering costs.

*No. GB-208-A.—Also suited for same applications.

No.	GB-205-A	GB-205-FS	GB-206-A	GB-206-FS	GB-207-A
O.D. in.	.187	.143	.205	.165	.140
Wt. per 1000 Ft. lb.	27	12	28	15	13

Put up on 500-foot spools.

Whitney Blake Speaker Transmission Cable



No. GB-208-A



No. GB-209-A—Standard Round Wire Shield



No. GB-209-FS—Special Flat Wire Shield

This cable is for low or high impedance loud speaker circuits.

*No. GB-208-A.—Made with No. 22 gage tinned enameled conductors, double silk and single cotton wound, cellulose acetate lacquered and braided and bare copper shield over twisted conductors.

Put up on 500-foot spools.

No. GB-209-A.—Made with No. 18 gage tinned solid copper conductor, 1/2-inch code rubber insulation, cotton braid on each conductor, waxed, and braided bare copper shield over twisted conductors.

Available with regular round wire shield or with flat wire shield which reduces diameters thereby lowering costs.

Put up on 500-foot coils.

No.	GB-209-A	GB-209-FS	GB-208-A
O.D.	.296 in.	.265 in.	.125 in.
Weight per 1000 Feet	52 lb.	31 lb.	12 lb.

Whitney Blake Concentric Type Cable



No. GB-211-A



No. GB-212-A

For loud speaker and communication system circuits, the shield being used for the grounded side of the circuit.

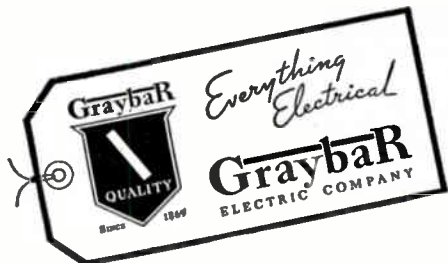
This cable is moistureproof, has small diameters and pushback insulation.

No. GB-211-A.—Made with No. 18 gage tinned stranded conductor, cotton wrapped, 30% pushback rubber insulation, braided tinned copper shield, cotton wrapping and a 40% gray rubber jacket.

No. GB-212-A.—Made with No. 22 gage tinned solid conductor, cotton wrapped, 30% pushback rubber insulation, braided tinned copper shield, cotton wrapping and a 40% gray rubber jacket.

No.	GB-211-A	GB-212-A
O.D.	.171 in.	.140 in.
Weight per 1000 Feet	21 lb.	16 lb.

Put up on 500-foot spools.



Type SJ Whitney Blake Rubber Sheathed Cord



Recommended for light duty tools, refrigerators, vacuum cleaners, washing machines, sewing machines, multigraph machines, cash registers, billing machines, etc.

Made with standard and flexible stranded conductors, 30% rubber insulated, twisted with fillers and covered with cotton braid, 40% tough rubber jacket overall.

Standard stranding is for stationary service, and flexible stranding for movable devices.

Maximum voltage rating, 300 volts.

The rubber compounds of this moisture-proof cord are age resisting and provide high resistance to abrasion, shock and twisting. It is non-kinking, non-fraying, and has non-dust collecting satin finish.

Size A.W.G.	Regular Stranding		Flexible Stranding		2-Conductor		3-Conductor		No. of Coil
	No. of Strands	Size Wire	No. of Strands	Size Wire	Approx. O.D. Inches	Weight Lb. per 1000 Ft.	Approx. O.D. Inches	Weight Lb. per 1000 Ft.	
18	16	30	41	34	.305	47	.340	68	250
16	26	30	65	34	.330	63	.375	90	250

Type SV Whitney Blake Rubber Sheathed Cord



A cord for light duty appliances, such as food mixers, vacuum cleaners and fans.

Made with flexible stranded conductors 30% rubber insulated, conductors twisted with fillers and covered with cotton braid and 40% tough rubber jacket overall.

Maximum voltage rating, 300 volts.

The rubber compounds of this moisture-proof cord are age resisting and provide high resistance to abrasion, shock and twisting. It is non-kinking, non-fraying, and has non-dust collecting satin finish.

Size A.W.G., 18. No. of strands, 41. Size wire, 34. Approximate O.D., .250 inch.

Put up in 250-foot coils. Approximate weight per 1000 feet, 31 pounds.

Whitney Blake Gas Tube Sign and Oil Burner Ignition Cable



Weatherproof Type

Conductor is No. 14—26 strands No. 28 tinned copper. Cellophane separator. High dielectric strength insulation with corona resistant compound.

Ozone, flame and moisture resistant.

Weatherproof type has cotton braid covering with moisture and flame retarding compounds.

Lacquered and tinned copper shield types have fibreglas braid treated with multiple coats of high tension lacquer.

Standard packages, 250 and 500-foot coils.

Type	Voltage Service	TYPE No.			Approx. Weight O.D. Lb. per Inches 1000 Ft.
		W.B.	Under- writers'		
Weatherproofed.....	5000	1074	GTO-5	.260	37
Fibreglas-Lacquered..	5000	1074-L	GTO-5	.200	27
Weatherproofed.....	10000	1084	GTO-10	.280	42
Fibreglas-Lacquered..	10000	1084-L	GTO-10	.230	35
Tinned Copper Shield	10000	1084-LS	GTO-10	.265	50
Weatherproofed.....	15000	1094	GTO-15	.375	66
Fibreglas-Lacquered..	15000	1094-L	GTO-15	.275	43
Tinned Copper Shield	15000	1094-LS	GTO-15	.305	65

**Whitney Blake Automotive Cable
Type 716 High Tension Ignition Cable
Braided-Lacquered Construction**



Made of No. 16 B. & S. gage, 19 strands No. 29 tinned copper. Rubber insulation, cotton braid treated with multiple even coats of flexible heat, oil, water and corona resistant black lacquer. High dielectric strength.

Approximate o.d., .275-inch. Put up in 500-foot coils. Approximate weight per 1000 feet, 38 pounds.

**Type 716-N High Tension Ignition Cable
Neoprene Jacketed Construction**



Made of No. 16 B. & S. gage, 19 strands No. 29 tinned copper, rubber insulated, and covered with a heat, oil, water, and corona resistant neoprene jacket.

Approximate o.d., .275-inch. Put up in 500-foot coils. Approximate weight per 1000 feet, 43 pounds.

**Lighting and Primary Cable
Braided-Lacquered Finish
Single Conductor**



Stranded tinned copper conductors, rubber insulated, glazed cotton braid treated with multiple coats of clear, oil, heat and water resistant lacquer.

Furnished only with light brown braid and blue tracers. Put up in 500-foot coils.

Type.....	218	116	114	112	110
B. & S. Gage No.....	18	16	14	12	10
No. of Strands and Size... ..	16/30	19/29	19/27	19/25	19/23
Thickness Rubber Wall in. . . . .	.022	.022	.027	.031	.031
Approx. O.D.....in. . . . .	.125	.135	.160	.188	.210
Approx. Wt. per 1000 Ft. lb.	10	13	21	30	42

Duplex Conductors



Same construction as single cable, except a polarized cotton braid is applied over each conductor and clear lacquered. Over the parallel laid conductors is applied a glazed cotton braid treated with multiple coats of clear, oil, heat and water resistant flexible lacquer.

Furnished only with outer braid of light brown cotton with blue tracers. Put up in 500-foot coils.

Type.....	116-D	114-D
B. & S. Gage No.....	16	14
No. of Strands and Size.....	19/29	19/27
Thickness Rubber Wall.....in. . . . .	.022	.022
Approx. O.D.....in. . . . .	.160x.275	.180x.330
Approx. Wt. per 1000 Ft.....lb.	32	47

Armored—Single Conductor



Stranded bare copper conductors, insulated with a double wrapping of varnished cambric tape, varnished cotton braid, and protected by an overall spiral galvanized steel armor. Put up in 250-foot coils.

Type.....	A-16	A-14	A-12	A-10
B. & S. Gage No.....	16	14	12	10
No. of Strands and Size.....	19/29	19/27	19/25	19/23
Approx. O.D.....in. . . . .	.127	.142	.153	.190
Approx. Wt. per 1000 Ft.... lb.	22	30	39	57

Armored—Duplex Conductor



Same construction as the single cable, except polarized cotton braids applied to each conductor and armor applied over conductors laid parallel. Put up in 250-foot coils.

Type.....	A-16-D	A-14-D
B. & S. Gage No.....	16	14
No. of Strands and Size.....	19/29	19/27
Approx. O.D.....inches . . . . .	.135x.240	.150x.270
Approx. Wt. per 1000 Ft. pounds	41	50

Types FF-32 and 64 Whitney Blake Flexible Rubber Covered Fixture Cord N.E.C. Standard



This cord is for wiring of fixtures and appliances where temperatures do not exceed 120° F. Made with stranded copper conductor, paper separator, code rubber insulation and cotton or rayon braid.

Available in the following colors: black, yellow, brush brass and dark brown.

Size A.W.G.	18	18	16
Insulation Thickness.....inches	1/4	1/2	1/2
Approx. O.D.....inches	.125	.156	.169
No. of Feet on Spool.....	1000	500	500
Approx. Weight per 1000 Feet.....pounds	9	14	18

Type CF Whitney Blake Flexible Heat Resisting Fixture Cord N.E.C. Standard



A cord for wiring of fixtures and appliances where temperature does not exceed 194° F. Made with stranded copper conductor, paper separator and cotton braids thoroughly saturated with a flameproof and moisture-resisting compound. Cotton or rayon appearance braids are applied over the plain type when required.

This wire can be furnished in multiple conductor constructions, CFC, CFPO, and CFPD with outer braids of cotton or rayon.

Size A.W.G.	18	16	14
Insulation Thickness.....inches	1/2	1/2	1/2
Approx. O.D.....inches	.115	.130	.140
No. of Feet on Spool.....	1000	500	*500
Approx. Weight per 1000 Feet.....pounds	12	16	22

Type AF Whitney Blake Flexible Heat Resisting Fixture Cord N.E.C. Standard



For wiring of fixtures and appliances where temperatures exceed 194° F. Made with solid or stranded copper conductors; felted asbestos fiber insulation, concentrically applied, polished and compressed, and thoroughly saturated with a flameproof and moisture-resisting wax compound. Cotton or rayon appearance braids are applied over the plain type when required.

This wire can be furnished in multiple conductor constructions AFC, AFPO, and AFPD with outer braids of cotton or rayon.

Size A.W.G.	18	16	14	12	*10
Insulation Thickness.....in.	1/2	1/2	1/2	3/4	3/4
Approx. O.D.....in.	.111	.123	.141	.191	.217
No. of Feet on Spool.....	500	500	500	†500	†500
Approx. Weight per 1000 Ft.....lb.	12	16	22	39	53

*Furnished only with stranded conductor.
†Coil.

Type C Whitney Blake Twisted Pair Lamp Cord



This cord is recommended for portable lamps, clocks, heating pads, fans, toys, etc. Made with stranded copper conductors, paper separator, code rubber insulation, and cotton braid on each conductor.

Size A.W.G.	18	16	14	12
Insulation Thickness.....in.	1/2	1/2	3/4	3/4
Approx. O.D.....in.	.312	.338	.430	.470
No. of Feet on Spool.....	250	250	*250	*250
Approx. Weight per 1000 Ft.....lb.	28	36	60	82

*Coil.

Type POSJ Whitney Blake Tru-Rip Rubber Sheathed Parallel Cord



A cord for lamps, clocks, radios, toys, cash registers, fans, scales, signs, etc. Made with flexible stranded copper conductors cotton wrapped and a 40% rubber insulation. Satin finish. This cord is waterproof and strips, slits, and handles easily.

Available in the following colors: black, brown and ivory.

Type.....	POSJ-64	POSJ-32	POSJ-32
Size A.W.G.....	18	18	16
No. of Strands.....	41	41	65
Size of Wire.....	34	34	34
Approx. Overall Diam.in.	.230x.125	.295x.155	.315x.170
No. of Feet on Spool.....	250	250	250
Approx. Wt. per 1000 Ft.....lb.	25	35	45

Type PD Whitney Blake Twisted and Braided Overall Cord



For vacuum cleaners, lamps, pendants in dry places, and fans. Made with stranded copper conductors, paper separator, code rubber insulation, and cotton braid on each conductor and cotton or rayon braid over twisted conductors.

Size A.W.G.....	18	16
Insulation Thickness.....inches	1/2	1/2
Approx. O.D.....inches	.300	.320
No. of Feet in Coil.....	250	250
Approx. Weight per 1000 Feet.....pounds	35	43

Type P Whitney Blake Reinforced Cord



For pendant or portable use in dry places, drop cord fixtures, medical and dental appliances, heating and ventilating units, food choppers and grinders, cloth cutting machines and calculating machines. Made with stranded conductors, paper separator, code rubber insulation, cotton braid on each conductor, over twisted conductors reinforcing jacket of rubber and an outer cotton braid.

Maximum voltage rating 300 volts for No. 18 and No. 16, 600 volts for No. 14.

Size A.W.G.....	18	18	16	14
Insulation Thickness.....in.	1/4	1/2	1/2	3/4
Approx. O.D.....in.	.245	.350	.380	.450
No. of Feet in Coil.....	250	250	250	250
Approx. Weight per 1000 Feet.....lb.	35	54	71	100

Type HPD Whitney Blake Heater Cord

3000 Cycles—Underwriters' Red Label



For flat irons, toasters, coffee brewers, heating pads, waffle irons, roasters, soldering irons, heaters, griddles, grills, etc. Made with flexible stranded copper conductors, special cotton separator, 1/4-inch unvulcanized rubber insulation, long fiber fireproof asbestos covering on each conductor, and a braid of rayon or glazed cotton or long wear twine applied over twisted conductors.

Size A.W.G.....	18	17	16	14
No. of Strands.....	41	52	65	104
Size Wire.....	34	34	34	34
Current Carrying Capacity.....amps.	10	12 1/2	15	20
No. of Feet in Coil.....	250	250	250	250
Approx. Wt. per 1000 Ft., Glazed Cotton.....pounds	32	36	42	55
Approx. Wt. per 1000 Ft., Twine Braid.....pounds	35	40	46	60

Type HPD Whitney Blake Heater Cord
10,000 Cycles—Underwriters' Gold Label



For high quality flat irons and appliances where greater flexibility and longer wear are desired.

Made with flexible stranded copper conductors, special cotton separator, 1/4-inch unvulcanized rubber insulation, long fiber fireproof asbestos covering on each conductor, and a braid of rayon or glazed cotton or long wear twine applied over twisted conductors. Flexible stranding.

Size A.W.G.....	18	17	16
No. of Strands.....	65	82	104
Size Wire.....	36	36	36
Current Carrying Capacity..... amps.	10	12½	15
No. of Feet in Coil.....	250	250	250
Approx. Wt. per 1000 Ft., Glazed Cotton..... pounds	32	36	42
Approx. Wt. per 1000 Ft., Twine Braid..... pounds	41	45	48

Type HSJ Whitney Blake Rubber Sheathed Heater Cord
3000 Cycles—Underwriters' Red Label
Vulcanized Innere



For applications requiring a moisture-proof heater cord, such as glue pots, soldering irons, permanent wave machines, tire vulcanizers, etc.

Made with flexible stranded copper conductors, special cotton separator, 1/4-inch vulcanized rubber insulation, long fibre asbestos covering on each conductor, soft cotton braid over twisted conductors, and 40% rubber jacket overall.

Size A.W.G.....	18	17	16	14
No. of Strands.....	41	52	65	104
Size Wire.....	34	34	34	34
Approx. O.D..... inches	.325	.325	.340	.355
Current Carrying Capacity...amps.	10	12½	15	20
No. of Feet in Coil.....	250	250	250	250
Approx. Wt. per 1000 Feet..... lb.	45	55	57	65

Type S Whitney Blake Rubber Sheathed Cord



A cord for heavy portable tools, pendant lighting, car heaters, conveyors, garage heaters, game machines, slot machines, ticket venders, floor polishers and sanders, etc.

Made with flexible stranded conductors 30% rubber insulated, conductors twisted with fillers and covered with cotton wrap or braid and 40% heavy duty rubber jacket applied overall.

Maximum voltage rating, 600 volts.

The rubber compounds of this moisture-proof cord are age resisting and provide high resistance to abrasion, shock and twisting. It is non-kinking, non-fraying, and has non-dust collecting satin finish.

Size A.W.G.	No. of Strands	Size Wire	2-Conductor		3-Conductor		No. of Ft. in Coil
			Approx. O.D. Inches	Weight Lb. per 1000 Ft.	Approx. O.D. Inches	Weight Lb. per 1000 Ft.	
18	41	34	.395	78	.410	91	250
16	65	34	.410	90	.445	112	250
14	41	30	.540	146	.565	174	250
12	65	30	.615	188	.645	225	250
10	104	30	.650	246	.690	300	250

DeLuxe Flat Iron Cord Sets

Listed and Approved by Underwriters' Laboratories, Inc., for Ring Label Service



Constructed with heavy heater plug with non-arcing and heat-resisting bi-metallic contacts. No strain on electrical connections. Heater plug fastened with rivets—no bolts or nuts to work loose. Rubber guard on plug reduces fatigue at point where failure usually occurs.

Length, 8 feet.

Individually packaged and packed 10 in a display carton. Standard package, 50.

Approximate shipping weight per package, 28 pounds.

No. 500, No. 18 10000-Cycle Twine Braid Heater Cord with Black and Red Tracers; Black Rubber Attachment Plug Cap Molded to Cord; and Black Flat Iron Plug..... each \$.98

No. 501, Same as the No. 500, Except Cord is Brown Braid with Green and White Tracers and Cap and Plug are Brown..... each \$.98

No. 600 Utility Flat Iron Cord Sets

Listed and Approved by Underwriters' Laboratories, Inc., for Ring Label Service



Constructed with heater plug fastened with rivets—no bolts or nuts to work loose.

Length, 8 feet.

Individually packaged and packed 10 in a display carton. Standard package, 50.

Approximate shipping weight per package, 24 pounds.

No. 600, No. 18 3000-cycle Glazed Cotton Braid Heater Cord with Black and Red Rayon Tracers; Black Rubber Unbreakable Separable Attachment Plug; and Black Flat Iron Plug..... each \$.55

Switch Appliance Plug Cord Sets

Listed and Approved by Underwriters' Laboratories, Inc., for Ring Label Service



Made with modern design, durable switch appliance plug and heater plug fastened with rivets—no bolts or nuts to work loose. Internal strain relief protects connections.

Length, 8 feet.

Individually packaged and packed 50 in a standard package.

Approximate shipping weight per package, 37 pounds.

No. 550, No. 18 10000-cycle Twine Braid Heater Cord with Black and Red Tracers; Black Rubber Molded-On Attachment Plug Cap; and Black Switch Appliance Plug with Molded Rubber Guard..... each \$1.25

No. 551, Same as the No. 500, Except Cord is Brown Braid with Green and White Tracers and Cap and Plug are Brown..... each \$1.25

Deltabeston Flexible Cord

Type AFS
(Table YK-8290)



Made with flexible conductors and a tough 40% overall rubber jacket which enables it to withstand severe mechanical abuse. Recommended for use as a portable cord where the individual conductors are in direct contact with the heating element of heating devices.

Due to its construction, this flexible cord is moisture-proof and heat-resisting.

2-Conductor

Size A.W.G.	Stranding	Felted Asbestos Inches	Rubber Jacket Inches	*Overall Diameter Inches
18	42/.0063	.032	.0625	.390
16	65/.0063	.032	.0625	.405
14	84/.0071	.032	.0781	.460
12	84/.0089	.047	.0781	.620

3-Conductor

18	42/.0063	.032	.0625	.405
16	65/.0063	.032	.0625	.430
14	84/.0071	.032	.0781	.490
12	84/.0089	.047	.0781	.635

Type AFSJ
(Table YK-8289)

Similar in construction to Type AFS cord above, except that it has a lighter overall rubber jacket. Especially suitable for use as a flexible cord for home appliances and small portable tools.

Moisture-proof and heat-resisting.

2-Conductor

18	17/.010	.032	.032	.305
16	26/.010	.032	.032	.330

3-Conductor

18	17/.010	.032	.032	.335
16	26/.010	.032	.032	.360

*Maximum and minimum not over $\pm 5\%$ from normal.

No. 1500 Table Appliance Cord Sets

Listed and Approved by Underwriters' Laboratories, Inc., for Ring Label Service

Made with No. 18 3000-cycle rayon braid black heater cord with scarlet tracers; separable and unbreakable rubber attachment plug cap, with anchored contacts and black miniature table appliance plug fastened with rivets—no bolts or nuts to work loose.

Length, 6 feet.

Individually tagged and packed in cartons of 10. Standard package, 50.

Approximate shipping weight per package, 18 pounds.

No. 1500.....each \$.40



Type AF Deltabeston Fixture Wire

Plain Type — N.E.C. Standard
300 Volts



This wire is approved for wiring all types of lighting fixtures designed for interior illumination, sun lamps, therapeutic devices, showcase wiring and all types of high-wattage units, especially where socket temperature exceeds 90°C. (194°F.). Flame, heat, and moisture-resisting felted asbestos insulation.

Standard colors: black or white. Other colors available on request at no extra charge in quantities of 1000 feet or more. All based on N.E.M.A. color specifications.

Solid Copper Conductor—(Table YK-7172)

Size A.W.G.	Stranding	*Nom. O.D. In.	STANDARD PACKAGES, FEET			Wt. Lb. per 1000 Feet
			Spool	Coil	Reel	
10196	.....	500	2500	41
12175	.....	500	2500	27
14128	500	.....	2500	19
16115	500	.....	2500	13
18104	500	.....	2500	10

Stranded Copper Conductor—(Table YK-7272)

10	105/30	.217	.....	500	2500	44
12	65/30	.191	.....	500	2500	30
14	41/30	.141	500	.....	2500	20
16	26/30	.123	500	.....	2500	14
18	16/30	.111	500	.....	2500	10

*A tolerance of 5% over or under o.d. shown above is necessary due to process of manufacture.

Deltabeston Thermostat Control Wire

12½-Mil Wall of Felted Asbestos—Table YK-2140
25 -Mil Wall of Felted Asbestos—Table YK-2141
32 -Mil Wall of Felted Asbestos—Table YK-2142



This control wire is designed for use with automatic thermostat controls such as are used in modern automatic coal and oil-burning furnaces; and in connection with all 10W-voltage types of signal and intercommunicating systems.

Felted asbestos insulation, impregnated with flame and moisture-resisting compounds. Enameled solid copper conductors. Overall flexible steel armor.

Because of the flame and moisture-resisting qualities of this wire, it may be installed in close proximity to furnaces, hot water or steam pipes, or if necessary, it may be wired in actual contact with the heated surface.

Due to the inorganic construction of the insulation, the electrical and physical properties will neither change nor deteriorate. The insulation will not dry out with heat nor age, and it will neither burn nor conduct flame.

Designed for use on low voltages—usually fed by small stepdown transformers. For this application, the 12½ mil wall insulation is recommended. When control wire is to be used, direct on 115-volt circuits, a minimum insulation thickness of 32 mils is required. Can also be furnished with metallic braid and tinned copper conductors.

Size A.W.G.	No. of Conductors	*OVERALL DIAMETER WALL THICKNESS			WEIGHT POUNDS PER 1000 FEET			Std. Ship. Coils Feet
		12½-Mil	25-Mil	32-Mil	12½-Mil	25-Mil	32-Mil	
14	2	.205	.255	.280	48	57	62	500
	3	.215	.270	.300	64	75	82	500
	4	.240	.300	.335	82	95	103	500
	5	.270	.340	.380	101	118	128	500
	16	2	.175	.225	.255	36	44	49	500
3		.185	.240	.270	47	57	63	500
4		.210	.270	.300	59	71	78	500
5		.235	.305	.340	73	88	97	500
18		2	.155	.205	.230	27	35	39	500
	3	.165	.215	.245	35	44	49	500
	4	.180	.240	.275	43	54	61	500
	5	.205	.275	.310	53	67	75	500
	6	.225	.300	.340	61	77	86	500
	7	.225	.300	.340	67	83	93	500

*A tolerance of 5% over or under the o.d. shown above is necessary due to variations in process of manufacture.

Type AVB Deltabeston Switchboard Wire

Listed Under the Re-Examination Service of Underwriters' Laboratories, Inc.

600 Volts



Solid Conductor

Recommended for wiring switchboards and all other types of control apparatus. Approved for 90°C. (194°F.) service. Will resist heat, flame, oil, and corrosive vapors. Insulated with varnished cambric and felted asbestos. Overall cotton braid. Dark gray flame-proof finish. Other colors can be furnished upon request. Available with solid tinned copper conductor or stranded tinned copper conductor.

Solid Conductor—(Table YK-4161)

Size A.W.G.	Concentric Stranding	*Nom. Diam. Inches	Dielectric Test Voltage Kv.	STD. SHIP.		Wt. Lb. per 1000 Feet
				Coils	Reels	
0000665	4.0	...	500	800
000615	4.0	...	500	650
00570	4.0	...	500	530
0530	4.0	...	500	435
1495	4.0	...	500	365
2465	4.0	...	500	300
4410	4.0	...	500	210
6370	4.0	...	500	155
8270	3.0	500	1000	84
10245	3.0	500	1000	61
12225	3.0	500	1000	44
14205	3.0	500	1000	34
16195	3.0	500	1000	25
18180	3.0	500	1000	20

Stranded Conductor—(Table YK-4261)

Size	Stranding	*Nom. Diam.	Dielectric Test Voltage	Coils	Reels	Wt. Lb. per 1000 Feet
0000	19/.1055	.735	4.0	...	500	835
000	19/.0940	.675	4.0	...	500	675
00	19/.0837	.625	4.0	...	500	555
0	19/.0745	.580	4.0	...	500	460
1	19/.0664	.540	4.0	...	500	380
2	7/.0974	.500	4.0	...	500	315
4	7/.0772	.440	4.0	...	500	225
6	7/.0612	.390	4.0	...	500	165
8	7/.0486	.290	3.0	500	1000	88
10	7/.0385	.260	3.0	500	1000	63
12	7/.0305	.235	3.0	500	1000	49
14	7/.0242	.215	3.0	500	1000	36
16	7/.0193	.200	3.0	500	1000	26
18	7/.0151	.185	3.0	500	1000	21

*Subject to ±5% tolerance due to variations in manufacturing processes.

Deltabeston Rheostat Wire

Listed Under the Re-Examination Service of Underwriters' Laboratories, Inc.

600 Volts



Solid Conductor

Recommended for wiring rheostats, furnaces, oven connections, and similar installations where subjected to heat, flame, oil, grease, and corrosive vapors. Maximum copper temperature is 200°C. (392°F.). Insulated with an impregnated wall of purified felted asbestos. Overall asbestos braid, white finish. Black finish can be furnished if required. Available with solid or stranded copper conductors. The copper conductor is normally plain, however, tinned copper will be furnished if specified.

Solid Conductor—(Table YK-4158)

Size A.W.G.	Concentric Stranding	*Nom. O.D. Inches	Dielectric Test Voltage Kv.	STD. SHIP.		Wt. Lb. per 1000 Feet
				Coils	Reels	
0000670	1.5	...	500	765
000620	1.5	...	500	624
00575	1.5	...	500	481
0535	1.5	...	500	392
1500	1.5	...	500	322
2430	1.5	...	500	250
3400	1.5	...	500	205
4375	1.5	...	500	170
6335	1.5	...	500	118
8280	1.5	500	1000	85
10255	1.5	500	1000	60
12235	1.5	500	1000	46
14220	1.5	500	1000	36
16205	1.5	500	1000	30
18195	1.5	500	1000	26

Stranded Conductor—(Table YK-4258)

Size	Stranding	*Nom. Diam.	Dielectric Test Voltage	Coils	Reels	Wt. Lb. per 1000 Feet
0000	19/.1055	.740	1.5	...	500	765
000	19/.0940	.680	1.5	...	500	624
00	19/.0837	.630	1.5	...	500	481
0	19/.0745	.585	1.5	...	500	392
1	19/.0664	.545	1.5	...	500	322
2	7/.0974	.465	1.5	...	500	250
4	7/.0772	.405	1.5	...	500	170
6	7/.0612	.355	1.5	...	500	118
8	7/.0486	.300	1.5	500	1000	85
10	7/.0385	.270	1.5	500	1000	60
12	7/.0305	.245	1.5	500	1000	46
14	7/.0242	.225	1.5	500	1000	36

*A tolerance of 5% over or under the nominal o.d. is necessary due to process of manufacture.

Deltabeston Flamenol and Asbestos Switchboard Wire

Listed Under the Re-Examination Service of Underwriters' Laboratories, Inc.

600 Volts



Solid Conductor

Recommended for wiring switchboards and all other types of control apparatus. Approved for 90°C. (194°F.) service. Resists heat, flame, oil and corrosive vapors.

Insulated with flamenol and felted asbestos. Cotton braid. Dark gray flame-proof finish. Available with solid tinned copper conductor or stranded tinned copper conductor.

Solid Conductor—(Table YK-4180)

Size A.W.G.	Concentric Stranding	*Nom. Diam. Inches	Dielectric Test Voltage Kv.	STD. SHIP.		Wt. Lb. per 1000 Feet
				Coils	Reels	
18160	3.0	500	1000	16.2
16170	3.0	500	1000	20.1
14180	3.0	500	1000	25.8
12195	3.0	500	1000	35.4
10220	3.0	500	1000	49.4
8250	3.0	500	1000	71.1

Stranded Conductor—(Table YK-4280)

Size A.W.G.	Concentric Stranding	*Nom. Diam. Inches	Dielectric Test Voltage Kv.	STD. SHIP.		Wt. Lb. per 1000 Feet
				Coils	Reels	
18	7/.0151	.165	3.0	500	1000	17.1
16	7/.0193	.175	3.0	500	1000	21.5
14	7/.0242	.190	3.0	500	1000	27.6
12	7/.0305	.205	3.0	500	1000	36.5
10	7/.0385	.235	3.0	500	1000	51.7
8	7/.0486	.265	3.0	500	1000	74.8

*Subject to ±5% tolerance due to variations in manufacturing processes.

Deltabeston Appliance Lead Wire

300 Volts



Solid Conductor

MOISTURE-RESISTING INSULATION.—Recommended for wiring of electric ranges, stoves, hot plates, and other electrical appliances where both heat and moisture resistance is desirable.

Consists of a highly compressed covering of felted asbestos which contains a moisture and heat resistant wax. The insulation is moisture-resisting but will smoke at approximately 300°F.

Available with copper, nickel or monel conductors. Monel and nickel conductors are recommended when the conductor temperatures exceed 150°C. (302°F.).

Available in sizes A.W.G. 8 to 20.

Standard colors: black, white, red, gray, or blue.

This wire can be furnished in a 3-conductor assembly, if desired. A 3-conductor range cable may be found advantageous for wiring heating devices such as electric ranges, ovens, or furnaces where a 3-heat switch controls the heating units.

SMOKELESS INSULATION.—Recommended for wiring of electrical appliances where high temperature with a minimum of moisture must be met, and a non-smoking insulation is essential.

Consists of a highly compressed covering of felted purified asbestos which contains less organic material than any other type of electrical insulation. This type is smokeless but will not resist moisture.

Available with copper, nickel or monel conductors. Monel and nickel conductors are recommended when the conductor temperatures exceed 150°C. (302°F.).

Available in sizes A.W.G. 8 to 20.

Standard colors: black, white, red, gray, or blue.

YK Table Number Designation

Conductors	Smokeless		Moisture-Resisting	
	.032-Inch Insulation Thickness	.040-Inch Insulation Thickness	.032-Inch Insulation Thickness	.040-Inch Insulation Thickness
Copper—Solid	YK-6187	YK-6175	YK-6177	YK-6179
Flexible Strand	YK-6287	YK-6275	YK-6277	YK-6279
Coarse Strand	YK-6387	YK-6375	YK-6377	YK-6379
Nickel—Solid	YK-6176	YK-6178	YK-6184	YK-6185
Flexible Strand	YK-6276	YK-6278	YK-6284	YK-6285
Coarse Strand	YK-6376	YK-6378	YK-6384	YK-6385
Monel—Solid	YK-6181	YK-6180	YK-6182	YK-6183
Flexible Strand	YK-6281	YK-6280	YK-6282	YK-6283
Coarse Strand	YK-6381	YK-6380	YK-6382	YK-6383

Deltabeston Electric Stove Wire

Listed Under the Re-Examination Service of Underwriters' Laboratories, Inc.

300 Volts



Stranded Conductor

The smokeless insulation applied on copper, nickel or monel conductors is designed for wiring electric ranges, space heaters and all other types of electrical heating devices where heat but little or no moisture will be encountered after the wire is installed. The treatment of the insulation is such as to provide a minimum of smoking, but embodies no resistance to moisture.

Maximum copper temperature is 200°C. (392°F.).

Felted asbestos wall has flame and heat-resisting saturant and finish. Standard colors: black, white, red, gray, or blue.

Available with either solid or stranded copper, nickel, or monel conductor.

Solid Conductor

Copper: Table YK-5145—Nickel: Table YK-5140
Monel: Table YK-5142

Size A.W.G.	Concentric Stranding	*Nom. O.D. Inches	STD. SHIP. LGTH. FT.		Wt. Lb. per 1000 Feet
			Coils	Reels	
4375	...	1000	170
6335	500	2500	112
8280	500	2500	77
10255	500	2500	56
12235	500	2500	41
14220	500	2500	31
16205	500	2500	25
18195	500	2500	21

Stranded Conductor

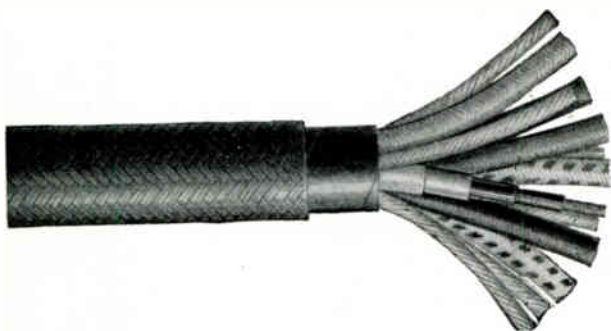
Copper: Table YK-5245—Nickel: Table YK-5240
Monel: Table YK-5242

Size A.W.G.	Concentric Stranding	*Nom. O.D. Inches	STD. SHIP. LGTH. FT.		Wt. Lb. per 1000 Feet
			Coils	Reels	
4	7/.0772	.405	...	1000	171
6	7/.0612	.355	500	2500	117
8	7/.0486	.300	500	2500	81
10	7/.0385	.270	500	2500	58
12	7/.0305	.245	500	2500	43
14	7/.0242	.225	500	2500	33
16	7/.0193	.210	500	2500	25
18	7/.0151	.200	500	2500	21

*Subject to ±5% tolerance due to variations in manufacturing processes.

Deltabeston Station Control Cable

Listed by the Underwriters' Laboratories, Inc.
600 Volts



Nominal Size A.W.G. 9-19/32 (Table YK-2267)			Size A.W.G. 12-19/25 (Table YK-2268)		
No. of Conductors	*Nom. O.D. Inches	Wt. Lb. per 1000 Feet	No. of Conductors	*Nom. O.D. Inches	Wt. Lb. per 1000 Feet
1	.330	81	1	.290	56
2	.645	195	2	.570	115
3	.685	260	3	.605	190
4	.755	325	4	.660	225
5	.830	390	5	.735	265
6	.905	495	6	.795	330
7	.905	505	7	.795	335
8	.990	580	8	.870	385
9	1.070	660	9	.935	435
10	1.170	700	10	1.020	455
11	1.205	805	11	1.055	520
12	1.205	815	12	1.055	525
13	1.275	930	13	1.110	590
14	1.275	940	14	1.110	595
15	1.350	1040	15	1.175	660
16	1.350	1050	16	1.175	665
17	1.430	1200	17	1.245	755
18	1.430	1215	18	1.245	765
19	1.430	1225	19	1.245	770

Recommended for connection of control on signal circuits, either exposed or in conduit, where the operating temperature is too severe for other insulations. Maximum copper temperature 110°C. (230°F.).

Each tinned copper conductor insulated with felted asbestos and varnished cambric insert. Overall asbestos braid. Flame, heat and moisture-resisting saturant and finish. Standard color of finish, black.

Standard shipping lengths as specified.

*Subject to ±5% tolerance due to variation in manufacturing processes.

Deltabeston Power Cable
Listed by the Underwriters' Laboratories, Inc.
(Table YK-2250)
600 Volts



For general power wiring as used in boiler rooms, power plants and steel mills. The cable can be installed exposed or in conduit. Maximum copper temperature, 110° C. (230° F.) Insulation consists of a layer of felted asbestos, wrapped with varnished cambric, a layer of felted asbestos, and then an asbestos braid. Flame, heat and moisture-resisting saturant and finish. Standard color of finish, black.

Size	Concentric Stranding	*Nom. O.D. Inches	Dielectric Test Voltage Kv.	STD. SHIP.		Wt. Lb. per 1000 Feet
				—LOTH. FEET—	Reels	
1000000CM	61/.1280	1.465	4.0	...	500	3510
900000	61/.1215	1.405	4.0	...	500	3182
800000	61/.1145	1.345	4.0	...	500	2854
750000	61/.1109	1.310	4.0	...	500	2689
700000	61/.1071	1.275	4.0	...	500	2524
650000	61/.1032	1.240	4.0	...	500	2359
600000	61/.0992	1.205	4.0	...	500	2193
550000	61/.0950	1.165	4.0	...	500	2027
500000	37/.1162	1.125	4.0	...	500	1860
450000	37/.1103	1.085	4.0	...	500	1692
400000	37/.1040	1.040	4.0	...	500	1525
350000	37/.0973	0.995	4.0	...	500	1357
300000	37/.0900	0.940	4.0	...	500	1188
250000	37/.0822	0.885	4.0	...	500	1017
0000A.W.G.	19/.1055	0.780	3.0	...	1000	839
000	19/.0940	0.720	3.0	...	1000	690
00	19/.0837	0.670	3.0	...	1000	571
0	19/.0745	0.625	3.0	...	1000	476
1	19/.0664	0.585	3.0	...	1000	371
2	7/.0974	0.505	3.0	...	1000	287
3	7/.0867	0.470	3.0	...	1000	238
4	7/.0772	0.445	3.0	...	1000	198
6	7/.0612	0.395	3.0	...	1000	141
8	7/.0486	0.360	2.5	500	1000	100
10	7/.0385	0.330	2.5	500	1000	76
12	7/.0305	0.305	2.5	500	1000	59
14	7/.0242	0.285	2.5	500	1000	46
16	7/.0193	0.270	2.5	500	1000	39
18	7/.0151	0.255	2.5	500	1000	33

*Subject to ±5% tolerance due to variations in manufacturing processes.

Deltabeston Power Cable
Listed by the Underwriters' Laboratories, Inc.
(Table YK-2252)
600 Volts



Recommended for exposed installations with high operating temperature. Will give permanent, uninterrupted service under constant high temperature. Maximum copper temperature 125° C. (257° F.)

Felted asbestos insulation, asbestos braid. Flame, heat and moisture-resisting saturant and finish. Standard color of finish, black.

Size	Concentric Stranding	*Nom. O.D. Inches	Dielectric Test Voltage Kv.	STD. SHIP.		Wt. Lb. per 1000 Feet
				—LOTH. FEET—	Reels	
1000000CM	61/.1280	1.485	1.5	...	500	3456
900000	61/.1215	1.425	1.5	...	500	3126
800000	61/.1145	1.365	1.5	...	500	2796
750000	61/.1109	1.330	1.5	...	500	2631
700000	61/.1071	1.295	1.5	...	500	2470
650000	61/.1032	1.260	1.5	...	500	2307
600000	61/.0992	1.225	1.5	...	500	2142
550000	61/.0950	1.185	1.5	...	500	1977
500000	37/.1162	1.145	1.5	...	500	1812
450000	37/.1103	1.105	1.5	...	500	1647
400000	37/.1040	1.060	1.5	...	500	1482
350000	37/.0973	1.015	1.5	...	500	1317
300000	37/.0900	0.960	1.5	...	500	1219
250000	37/.0822	0.905	1.5	...	500	982
0000A.W.G.	19/.1055	0.800	1.5	...	1000	819
000	19/.0940	0.740	1.5	...	1000	672
00	19/.0837	0.690	1.5	...	1000	555
0	19/.0745	0.645	1.5	...	1000	462
1	19/.0664	0.605	1.5	...	1000	388
2	7/.0974	0.505	1.5	...	1000	274
3	7/.0867	0.470	1.5	...	1000	227
4	7/.0772	0.445	1.5	...	1000	188
6	7/.0612	0.395	1.5	500	1000	132
8	7/.0486	0.320	1.5	500	1000	87
10	7/.0385	0.290	1.5	500	1000	63
12	7/.0305	0.265	1.5	500	1000	48
14	7/.0242	0.245	1.5	500	1000	38
16	7/.0193	0.230	1.5	500	1000	31
18	7/.0151	0.215	1.5	500	1000	26

*Subject to ±5% tolerance due to variations in manufacturing processes.

Deltabeston All-Asbestos Apparatus Cable

Listed Under the Re-Examination Service of Underwriters' Laboratories, Inc.
300 Volts



Recommended for the wiring of motion picture projectors, stage lights, searchlights, floodlights, spotlights, all types of electric cranes and controllers, and all other apparatus where the wires are subjected to high temperatures. Maximum copper temperature is 200° C. (392° F.)

Insulated with a wall of felted asbestos, finished with an overall asbestos braid. Flame and heat-resisting saturant and finish. Standard color of finish, white.

Available in two grades: flexible, and extra flexible.

Extra Flexible Strand—(Table YK-2258)

Size A.W.G.	Rope Stranding	*Nom. O.D. Inches	Dielectric Test Voltage Kv.	STD. SHIP.		Wt. Lb. per 1000 Feet
				—LOTH. FEET—	Reels	
0000	8464/36	.875	1.0	...	500	815
000	6713/36	.800	1.0	...	500	660
00	5292/36	.750	1.0	...	500	535
0	4214/36	.670	1.0	...	500	430
1	3332136	.625	1.0	...	500	340
2	2646/36	.535	1.0	...	500	260
4	1666/36	.450	1.0	...	500	175
6	1050/36	.385	1.0	...	500	125
8	661/36	.320	1.0	500	1000	80
10	413/36	.285	1.0	500	1000	55
12	259/36	.255	1.0	500	1000	39
†14	105/34	.230	1.0	500	1000	30
†16	65/34	.215	1.0	500	1000	24
†18	41/34	.200	1.0	500	1000	20

*Subject to ±5% tolerance due to variations in manufacturing processes.
†Bunched strands.

Flexible Strand—(Table YK-2257)

Size A.W.G.	Rope Stranding	*Nom. O.D. Inches	Dielectric Test Voltage Kv.	STD. SHIP.		Wt. Lb. per 1000 Feet
				—LOTH. FEET—	Reels	
250000CM	427/.0242	.855	1.0	...	500	1017
0000	259/.0286	.800	1.0	...	500	745
000	259/.0255	.740	1.0	...	500	596
00	259/.0227	.680	1.0	...	500	483
0	259/.0202	.625	1.0	...	500	388
1	259/.0180	.580	1.0	...	500	318
2	133/.0224	.510	1.0	...	500	259
4	133/.0177	.440	1.0	...	500	175
6	133/.0141	.385	1.0	...	500	109
8	133/.0112	.320	1.0	500	1000	74
†10	105/.010	.275	1.0	500	1000	53
†12	65/.010	.250	1.0	500	1000	39
†14	41/.010	.230	1.0	500	1000	28
†16	26/.010	.215	1.0	500	1000	22
†18	16/.010	.200	1.0	500	1000	18

Deltabeston Apparatus or Motor Lead Cable

Listed by the Underwriters' Laboratories, Inc.
(Table YK-2251)
600 Volts



Recommended where flexibility is desired. Used for wiring all low-voltage apparatus in power plants, steel mills, mine locomotives, foundries, boiler rooms, ash pits, cranes, and any other installation, either exposed or in conduit, where the operating temperature is too severe for other insulations. Maximum copper temperature rating is 110°C. (230°F.).

Insulation consists of a layer of felted asbestos, wrapped with varnished cambric felted asbestos, and then an asbestos braid.

Flame, heat and moisture-resisting saturant and finish. Standard color of finish, black.

Size	Rope Stranding Tinned	*Nom. O.D. Inches	Dielectric Test Voltage Kv.	STD. SHIP. (Ltr., Fr.) Coils Reels	Wt. Lb. per 1000 Feet
1200000CM	427/.0480	1.585	4.0	500	3628
900000	427/.0453	1.515	4.0	500	3294
800000	427/.0427	1.445	4.0	500	2961
750000	427/.0420	1.425	4.0	500	2794
700000	427/.0403	1.380	4.0	500	2622
600000	427/.0380	1.320	4.0	500	2289
500000	427/.0342	1.215	4.0	500	1935
450000	427/.0325	1.170	4.0	500	1764
400000	427/.0306	1.120	4.0	500	1586
350000	427/.0286	1.065	4.0	500	1404
300000	427/.0265	1.010	4.0	500	1233
250000	427/.0242	.945	4.0	500	1055
0000A.W.G.	259/.0286	.840	3.0	1000	875
000	259/.0255	.775	3.0	1000	721
00	259/.0227	.720	3.0	1000	592
0	259/.0202	.665	3.0	1000	492
1	259/.0180	.620	3.0	1000	415
2	133/.0224	.540	3.0	1000	300
3	133/.0199	.500	3.0	1000	248
4	133/.0177	.470	3.0	1000	210
5	133/.0158	.440	3.0	1000	173
6	133/.0141	.415	3.0	500 1000	147
8	133/.0112	.370	2.5	500 1000	104
†10	105/.010	.320	2.5	500 1000	76
†12	65/.010	.295	2.5	500 1000	59
†14	41/.010	.275	2.5	500 1000	45
†16	26/.010	.260	2.5	500 1000	38
†18	16/.010	.245	2.5	500 1000	32

*Subject to ±5% tolerance due to variations in manufacturing processes.

†Bunched strands.

Deltabeston Boiler Room Wire

Listed Under the Re-Examination Service of Underwriters' Laboratories, Inc.
600 Volts



Construction of Sizes 8-18 A.W.G.

Recommended for general conduit and boiler room wiring where heat and moisture-resisting qualities are essential. Typical applications are for lighting and control circuits. Maximum copper temperature, 110°C. (230°F.).

Insulated with felted asbestos and varnished cambric insert. Asbestos braid. Flame, heat and moisture-resisting saturant and finish. Standard color of finish, black. White is available on request.

Available in solid or stranded copper conductor.

Solid Copper Conductor (Table YK-3160)

Size A.W.G.	Concentric Stranding	*Nom. O.D. Inches	Dielectric Test Voltage Kv.	STD. SHIP. (Ltr., Fr.) Coils Reels	Wt. Lb. per 1000 Feet
0000700	3.0	500	800
000650	3.0	500	657
00605	3.0	500	543
0565	3.0	500	422
1530	3.0	500	348
2480	3.0	500	279
4425	3.0	500	193
6385	3.0	500	138
8310	2.5	500 1000	85
10285	2.5	500 1000	59
12265	2.5	500 1000	45
14245	2.5	500 1000	36
16235	2.5	500 1000	29
18220	2.5	500 1000	25

Stranded Copper Conductor—(Table YK-3260)

Size	No. of Strands	*Nom. O.D. Inches	Dielectric Test Voltage Kv.	STD. SHIP. (Ltr., Fr.) Coils Reels	Wt. Lb. per 1000 Feet
0000	19/.1055	.770	3.0	500	800
000	19/.0940	.715	3.0	500	657
00	19/.0837	.660	3.0	500	543
0	19/.0745	.615	3.0	500	422
1	19/.0664	.575	3.0	500	348
2	7/.0974	.515	3.0	500	279
4	7/.0772	.455	3.0	500	193
6	7/.0612	.410	3.0	500	138
8	7/.0486	.330	2.5	500 1000	85
10	7/.0385	.300	2.5	500 1000	59
12	7/.0305	.275	2.5	500 1000	45
14	7/.0242	.255	2.5	500 1000	36

*Subject to ±5% tolerance due to variations in manufacturing processes.

Deltabeston Elevator Control, Trailer, and Lighting Cable

Listed by Underwriters' Laboratories, Inc.
300 Volts



This cable is designed to be used in connection with the wiring of all automatic and high rise elevators.

Each conductor of soft flexible copper stranding is insulated with a wall of moisture-resisting rubber, over which is felted a fire-resisting wall of asbestos fibre. To facilitate circuit identification in this cable, a coded rayon braid is woven over each conductor.

The individual conductors are cabled around a well padded and flexible steel core which is designed for the specific purpose of carrying the entire weight of the cable with no stress or strain whatever on the electrical conductors. A textile braid is woven around the cabled conductors to hold them in place. A rubberized fabric tape, spirally wound around the textile covering acts a further protection against moisture. Overall is woven an impregnated asbestos braid to resist abrasion and to serve as an additional safeguard against flame from an outside source.

*A tolerance of 5% over or under the o.d. shown above is necessary due to variations in process of manufacture.

Supplied cut to length in any number of conductors from 2 to 37.

For lighting control, a 2-conductor cable of Size 14 A.W.G. is recommended. The construction of this cable is identical with that of the control or trailer cable with the exception that no steel core is required as no support is necessary.

Control and Trailer Cable

A.W.G. Size 16-26/30—With Steel Supporting Strand
(Table YK-2270)

No. of Conductors	*Nom. O.D. Inches	Wt. Lb. per 1000 Feet	No. of Conductors	*Nom. O.D. Inches	Wt. Lb. per 1000 Feet
4	.738	230	12	1.007	444
6	.738	245	16	1.222	641
8	.845	320	20	1.440	853
10	.898	363	.....	.....	.....

Lighting Cable

A.W.G. Size 14-41/30—No Steel Strand
(Table YK-2271)

No. of Conductors	*Nom. O.D. Inches	Wt. Lb. per 1000 Feet
2	.740	203

Deltabeston Magnet Wire
Asbestos Insulated—Round Wire



All Deltabeston Magnet Wire is interchangeable for replacement of double cotton covered magnet wire, having the same uniform thickness of insulation.

Standard Finishes

STANDARD BROWN W-E. Flame and heat resisting varnish with a smooth waxy finish.

STANDARD WHITE. Bonded white asbestos designed for impregnation after coil is formed when it will absorb any insulating varnish.

BLACK "A". Asbestos fibre treated with compound having smooth, waxy finish.

Bare Conductor

Size A.W.G.	DIAMETER OVER ASBESTOS INSULATION, INCHES		Lb. on Standard Shipping Reel	Wt. Lb. per 1000 Feet
	Maximum	Minimum		
0000	.476	.472	200	639.00
000	.426	.422	200	514.00
00	.381	.377	200	409.47
0	.341	.337	200	322.92
1	.305	.301	200	255.60
2	.274	.270	200	204.30
3	.245	.241	200	160.92
4	.220	.216	200	127.58
5	.198	.194	200	101.72
6	.176	.172	200	80.77
7	.158	.154	150	63.93
8	.142	.138	150	50.71
9	.126	.123	150	40.20
10	.111	.109	150	32.17
11	.100	.098	150	25.71
12	.089	.087	150	20.40
13	.081	.079	150	16.18
14	.073	.071	150	12.83
15	.065	.063	50	10.22
16	.059	.057	50	8.14
17	.053	.051	50	6.38
18	.048	.046	50	5.08
19	.044	.042	50	4.13
20	.040	.038	50	3.29
21	.037	.035	10	2.63
22	.033	.031	10	2.11
23	.031	.029	10	1.74
24	.028	.026	10	1.32
25	.026	.024	10	1.08

Enameled Conductor

Standard Enamel Magnet Wire finish with filled asbestos insulation over the enamel. Thickness equal to that of double cotton enamel insulated magnet wire.

Size A.W.G.	DIAMETER OVER ENAMEL IN MILS		DIAMETER OVER ENAMEL AND ASBESTOS IN MILS		Lb. on Standard Shipping Reel	Wt. Lb. per 1000 Feet
	Maximum	Minimum	Maximum	Minimum		
4	206.6	205.6	222.6	218.6	200	128.26
5	184.6	183.6	200.6	196.6	200	102.32
6	164.6	163.6	178.6	174.6	200	81.31
7	146.6	145.6	160.6	156.6	150	64.40
8	130.6	129.6	144.6	140.6	150	51.13
9	116.6	115.6	128.6	125.6	150	40.58
10	104.6	103.6	115.6	112.6	150	32.51
11	93.5	92.5	103.0	101.0	150	26.01
12	83.4	82.4	92.9	90.9	150	20.60
13	74.3	73.4	83.8	81.8	150	16.38
14	66.3	65.4	75.8	73.8	150	13.03
15	59.2	58.3	68.7	63.7	50	10.35
16	53.1	52.2	62.6	60.6	50	8.26
17	47.0	46.2	56.5	54.5	50	6.48
18	41.9	41.1	51.4	49.4	50	5.16
19	37.9	37.1	47.4	45.4	50	4.20
20	33.8	33.0	43.3	41.3	50	3.35
21	30.3	29.5	39.8	37.0	10	2.68
22	27.0	26.3	36.0	33.3	10	2.15
23	24.2	23.5	33.2	30.5	10	1.77
24	21.6	21.0	30.6	28.0	10	1.35
25	19.3	18.8	27.8	25.3	10	1.10

Deltaglass Magnet Wire

Single Glass Insulated—Round Wire



**Specifications for Single Glass Insulated
Conductor**

Size A.W.G.	DIAMETER OVER GLASS INSULATION, INCHES		Lb. on Standard Shipping Reel	Wt. Lb. per 1000 Feet
	Minimum	Maximum		
0000	.4655	.4680	200	642.41
000	.4151	.4176	200	511.15
00	.3703	.3728	200	406.91
0	.3304	.3329	200	321.76
1	.2948	.2973	200	254.57
2	.2631	.2656	200	203.40
3	.2349	.2374	200	160.24
4	.2098	.2123	200	127.04
5	.1869	.1889	200	100.92
6	.1670	.1690	200	80.22
7	.1593	.1513	150	63.53
8	.1333	.1353	150	50.41
9	.1194	.1214	150	39.93
10	.1059	.1079	150	32.04
11	.0940	.0967	150	25.42
12	.0848	.0868	150	20.27
13	.0755	.0770	150	16.12
14	.0676	.0691	150	12.74
15	.0606	.0621	50	10.17
16	.0543	.0558	50	8.08
17	.0488	.0503	50	6.46
18	.0438	.0453	50	5.13
19	.0394	.0409	50	4.09
20	.0355	.0370	50	3.27
21	.0320	.0335	10	2.62
22	.0288	.0303	10	2.08
23	.0261	.0276	10	1.68
24	.0236	.0251	10	1.34
25	.0209	.0224	10	1.07

**Specifications for Single Enameled—Single
Glass Insulated Conductor**

Size A.W.G.	DIAMETER OVER ENAMEL AND GLASS, INCHES		Lb. on Standard Shipping Reel	Wt. Lb. per 1000 Feet
	Minimum	Maximum		
4	.2119	.2144	200	127.73
5	.1890	.1910	200	101.53
6	.1691	.1711	200	80.77
7	.1514	.1534	150	64.01
8	.1354	.1374	150	50.84
9	.1215	.1235	150	40.32
10	.1079	.1099	150	32.39
11	.0967	.0987	150	25.74
12	.0867	.0887	150	20.48
13	.0773	.0788	150	16.33
14	.0694	.0709	150	12.95
15	.0623	.0638	50	10.31
16	.0559	.0574	50	8.21
17	.0504	.0519	50	6.56
18	.0453	.0468	50	5.22
19	.0409	.0424	50	4.17
20	.0369	.0384	50	3.34
21	.0334	.0349	10	2.68
22	.0301	.0316	10	2.13
23	.0273	.0288	10	1.71
24	.0248	.0263	10	1.37
25	.0220	.0235	10	1.09

Round Magnet Wire

Size B. & S. Wire No.	Single Cotton Covered			Double Cotton Covered			
	Diam. Bare Wire In.	Thickness of Ins. In.	Diam. Over All In.	Ft. per Lb.	Thickness of Ins. In.	Diam. Over All In.	Ft. per Lb.
1	.2893	.009	.2983	3.91	.018	.3073	3.88
2	.2576	.009	.2666	4.94	.018	.2756	4.9
3	.2294	.009	.2384	6.23	.018	.2474	6.17
4	.2043	.009	.2133	7.84	.018	.2223	7.81
5	.1819	.009	.1909	9.88	.014	.1959	9.84
6	.1620	.009	.1700	12.44	.014	.1760	12.37
7	.1443	.009	.1523	15.66	.014	.1583	15.58
8	.1285	.009	.1375	19.71	.014	.1425	19.6
9	.1144	.006	.1204	24.81	.012	.1264	24.71
10	.1019	.006	.1079	31.21	.012	.1119	31.07
11	.0907	.006	.0967	39.5	.010	.1007	39.12
12	.0808	.005	.0858	49.83	.010	.0908	49.12
13	.0720	.005	.0770	62.71	.009	.0820	62.00
14	.0641	.005	.0691	78.79	.009	.0731	77.86
15	.0571	.005	.0621	99.27	.009	.0661	97.80
16	.0508	.005	.0558	125.09	.009	.0598	122.91
17	.0452	.005	.0502	157.59	.009	.0542	154.04
18	.0403	.005	.0453	198.31	.009	.0493	193.64
19	.0359	.005	.0409	249.19	.009	.0449	233.16
20	.032	.005	.0370	313.	.009	.0410	303.
21	.0285	.005	.0335	394.	.009	.0375	379.
22	.0253	.0045	.0298	493.	.009	.0343	471.
23	.0226	.0045	.0271	618.	.009	.0316	584.
24	.0201	.0045	.0246	773.	.009	.0291	726.
25	.0179	.00425	.02215	982.	.0085	.0264	932.
26	.0159	.00425	.02015	1228.	.0085	.0244	1149.
27	.0142	.00425	.01845	1533.	.0085	.0227	1419.
28	.0126	.00425	.01685	1907.	.0085	.0211	1739.
29	.0113	.00425	.01555	2365.	.0085	.0198	2130.
30	.01002	.00425	.01427	2945.	.0085	.01852	2606.
31	.00892	.00425	.01317	3680.	.0085	.01742	3233.
32	.00795	.00425	.01220	4542.	.0085	.01645	3894.
33	.00708	.00425	.01133	5569.	.0085	.01558	4666.
34	.0063	.00425	.01055	6900.	.0085	.01480	5477.
35	.00561	.00425	.00986	8331.	.0085	.01411	6602.
36	.005	.00425	.00925	9960.	.0085	.0135	7556.
37	.00445	.00425	.00870	10884.	.0085	.01295	8462.
38	.00396	.00425	.00821	13536.	.0085	.01246	9860.
39	.00353	.00425	.00778	16174.	.0085	.01203	12052.
40	.00314	.00425	.00739	19900.	.0085	.01164	14334.

Square and Rectangular Magnet Wire

Increasing attention is being given to the economies to be secured by the substitution of Square or Rectangular for round magnet wire. When round wire is used, considerable space is wasted, even when turns are fitted together as closely as possible, whereas the waste spaces are filled when square or rectangular wire is used, and a greater current carrying capacity secured.

Square Magnet Wire

Square magnet wire can be furnished in all sizes from number 14 to 0000 B. & S. gauge. (In computing the gauge the diameter of round wire is comparable to the thickness of square wire.) Sizes smaller than No. 14 cannot be regularly procured owing to the difficulty of winding.

Rectangular Magnet Wire



Rectangular magnet wire sizes have not, as yet, been standardized but can be supplied in sizes from .410 to .020 in thickness and from .460 to .064 in width and the regular insulation is double cotton wound. Rectangular wire is not carried in stock, but made specially on order, and in view of this, orders should not be for less than 200 pounds of any size.

Prices on square and rectangular magnet wire will be quoted upon application.

Round Enameled and Cotton Covered Magnet Wire

Size B. & S. Wire No.	Single Silk Covered			Double Silk Covered			
	Diam. Bare Wire In.	Thickness of Ins. In.	Diam. Over All In.	Ft. per Lb.	Thickness of Ins. In.	Diam. Over All In.	Ft. per Lb.
16	.0508	.002	.0528	127	.0035	.0543	126
17	.0452	.002	.0472	160	.0035	.0487	159
18	.0403	.002	.0423	201	.0035	.0438	199
19	.0359	.002	.0379	253	.0035	.0394	250
20	.032	.002	.034	319	.0035	.0355	314
21	.0285	.002	.0305	402	.0035	.032	396
22	.0253	.002	.0273	506	.0035	.0288	498
23	.0226	.002	.0246	637	.0035	.0261	626
24	.0201	.002	.0221	802	.0035	.0236	787
25	.0179	.002	.0199	1009	.0035	.0214	990
26	.0159	.002	.0179	1268	.0035	.0198	1242
27	.0142	.002	.0162	1595	.0035	.0177	1560
28	.0126	.002	.0146	2004	.0035	.0161	1946
29	.0113	.002	.0133	2516	.0035	.0148	2431
30	.01002	.002	.01202	3145	.0035	.01352	3030
31	.00892	.002	.01092	3930	.0035	.01242	3763
32	.00795	.002	.00995	4923	.0035	.01145	4662
33	.00708	.002	.00908	6156	.0035	.01058	5800
34	.0063	.002	.0083	7671	.0035	.0098	7064
35	.00561	.002	.00761	9547	.0035	.00911	8666
36	.005	.002	.007	11836	.0035	.0085	10832
37	.00445	.002	.00645	13396	.0035	.00795	12149
38	.00396	.002	.00596	16656	.0035	.00746	14776
39	.00353	.002	.00553	20678	.0035	.00703	18369
40	.00314	.002	.00514	25628	.0035	.00664	22052

Size B. & S. Wire No.	Over All Diam. E&SCC In.	Over All Diam. E&DCC In.	ENAMEL SCC		ENAMEL DCC		Diam. In.
			Feet per Lb.	Lbs. to Reel or Spool	Feet per Lb.	Lbs. to Reel or Spool	
10	.1101	.1053	30.77	200	30.42	200	23
11	.0989	.1029	39.28	200	38.77	200	23
12	.0880	.093	49.01	200	48.26	200	23
13	.0791	.0831	62.28	200	61.22	200	23
14	.0712	.0752	78.76	200	77.39	200	23
15	.0642	.0682	99.30	50	97.25	50	13
16	.0579	.0619	124.17	50	121.27	50	13
17	.0523	.0563	155.97	50	151.90	50	13
18	.0471	.0511	195.78	50	189.63	50	13
19	.0427	.0467	253.40	25	242.96	25	9
20	.0387	.0427	308.41	25	295.90	25	9
21	.0350	.0390	386.04	25	367.75	25	9
22	.0313	.0358	487.04	8	463.54	10	6
23	.0286	.0331	608.02	8	575.18	6	6
24	.0260	.0305	761.44	8	711.39	6	6
25	.02355	.0278	946.61	8	874.89	6	6
26	.02145	.0257	1,182.73	8	1,090.86	6	6
27	.01985	.0240	1,480.60	5	1,346.60	3	5
28	.01815	.0223	1,859.77	4	1,658.40	3	5
29	.01685	.0210	2,310.54	4	2,006.02	3	5
30	.01517	.01942	2,850.87	4	2,456.58	2	5
31	.01407	.01832	3,535.69	2½	2,986.59	2	5
32	.01310	.01735	4,358.25	2	3,550.51	1	4
33	.01213	.01638	5,314.34	2	4,212.83	1	4
34	.01125	.0155	6,458.70	1	4,872.58	1	4
35	.01056	.01481	7,552.30	1	5,668.61	1	4
36	.00985	.0141	9,171.79	1	6,488.03	1	4

Magnet Wire Reels and Spools

Size B. & S. Wire No.	Kind of Cover	Reel No.	Diam. In.	Lbs. per Reel	Size B. & S. Nos.	Kind of Cover	Reel No.	Diam. In.	Lbs. per Reel
*1	.....	1	28	200	27-31	Cotton	15	5	2-5
1-14	.....	2	23	200	27-31	Silk	15	5	4-8
15-18	.....	11	13	50	32-36	Cotton	16	4	1-2½
19-21	.....	13	9	25	32-36	Silk	16	4	1-5
22-26	Cotton	14	6	7-10	36-40	Cotton	17	3	1-2
21-26	Silk	14	6	8-12	37-40	Silk	17	3	1-2

*No. 1 and larger.

Ansonia Annunciator Wire



Insulated with two winds of cotton yarn applied in opposite directions, saturated with a wax compound and highly polished, furnished in solid and mixed colors.

On spools of 1 or approximately 8 pounds; in 1, 1/2, or 1/4-pound coils. Packed in cases.

A.W.G. No.	Single Conductor		Twisted Pair		Duplex	
	Feet per Pound	Pounds per 1000 Feet	Feet per Pound	Pounds per 1000 Feet	Feet per Pound	Pounds per 1000 Feet
12	44	22.7	21	47.6	..	..
14	68	14.7	33	30.3	..	..
16	104	9.6	51	19.6	40	25
18	158	6.4	77	13.0	55	18.2
19	186	5.4	90	11.0	64	15.6
20	225	4.5	108	9.25	75	13.3
22	314	3.2	150	6.6	..	..

Ansonia Damp-Proof Office Wire



Double braided, the inner braid saturated with a black weatherproof compound. Outer braid is specially treated with wax and highly polished.

Regularly made in No. 18 in the following colors: red, red and white, blue, blue and white, brown, brown and white, black, black and white, orange, orange and white.

In coils of about 10 pounds; on spools of 5 or 10 pounds. Packed in cases of approximately 150 and 200 pounds.

A.W.G. No.	Single Conductor		Twisted Pair		Duplex	
	Feet per Pound	Pounds per 1000 Feet	Feet per Pound	Pounds per 1000 Feet	Feet per Pound	Pounds per 1000 Feet
12	35	28.6	16	62.5	19	52.6
14	50	20.0	24	41.7	28	35.7
16	68	14.7	33	30.3	37	27
18	100	10.0	48	20.8	53	19
20	136	7.4	65	15.3	70	14.25

Crapo Double Galvanized Telephone and Telegraph Wire



Drawn from iron or steel, of specific analysis, processed under laboratory supervision, double galvanized by the Crapo patented process, and rigidly inspected. Is guaranteed to meet all standard specifications for electrical conductivity, tensile strength, elongation, galvanizing, and ductility which users of line wire require.

Heavy, uniform galvanized zinc coating applied to this wire by Crapo process gives perfect adhesion, withstands sharp bending and twisting, and affords lasting protection against corrosion. This coating is tough and ductile so that wire to which it is applied may be spliced without impairing the continuity of the galvanizing. This gives corrosion-resisting joints, for longer life, and lower maintenance costs.

Size B.W.G. In.	Diam.	Wt. Lb. per Mile	Coil Length Mile	MINIMUM BREAKING STRENGTH, POUNDS			MAXIMUM RESISTANCE PER MILE AT 68°F., INTERNATIONAL OHMS		
				E.B.B.	B.B.	Steel	E.B.B.	B.B.	Steel
4	.238	811	1/4	2028	2271	2433	5.98	7.15	8.32
6	.203	590	1/8	1475	1652	1770	8.22	9.83	11.44
8	.165	390	1/2	975	1092	1170	12.43	14.87	17.31
9	.148	314	1/2	785	879	942	15.44	18.47	21.50
10	.134	258	1/2	645	722	774	18.79	22.48	26.16
11	.120	206	1/2	515	577	618	23.54	28.16	32.77
12	.109	170	1/2	425	476	510	28.52	34.12	39.71
14	.083	99	1/2	247	277	297	48.98	58.59	68.18

Crapo High-Tensile Line Wire



For Long Spans



For Extra Long Spans

A high-tensile, low resistance telephone line wire that makes possible longer-span, lower-cost construction on new lines; provides stronger spans, with lower maintenance expense, on present lines. Development of Indiana Steel & Wire Company.

Crapo HTL-85 High Tensile

Provides for spans of 225 feet in heavy loading districts, 325 feet in medium loading districts, and 375 feet in light loading districts. Used on existing pole structures, it tends to increase strength of line, lessen hazards of ice and wind, minimize service interruptions, reduce maintenance costs. Affords improved transmission at voice frequency with currents of voice frequency magnitude.

It is extra galvanized by the Crapo patented process. Furnished in continuous lengths without splices and joints. Galvanized steel compression-type sleeves are recommended for splicing this wire.

Size B.W.G.	9	10	12	14
Diameter	.148 in.	.134 in.	.109 in.	.083 in.
Approx. Weight per Mile	314 lb.	258 lb.	170 lb.	99 lb.
Coil Length	1/2 mile	1/2 mile	1/2 mile	1/2 mile
Minimum Breaking Load	1462 lb.	1199 lb.	793 lb.	460 lb.
Max. Resistance per Mile	18.47 ohms	22.48 ohms	34.12 ohms	58.59 ohms

Crapo HTL-135 Extra High Tensile

For extra long spans of 350 feet in heavy loading districts, 450 feet in medium loading districts, and 500 feet in light loading districts. Has a minimum tensile strength approximately two and one-half times that of standard B.B. wire. Its effective resistance at voice frequencies with currents of voice frequency magnitude is superior to that of the older grade.

Galvanized by time-tested Crapo process to insure a uniform tightly adherent zinc coating.

Regularly furnished in No. 12 B.W.G. and in continuous lengths without splices or joints. Galvanized steel compression-type sleeves are recommended for splicing.

Physical and Electrical Characteristics

Size	No.	12 B.W.G.
Nominal Diameter	.109 in.	109
Minimum Breaking Strength	170 lb.	1213
Resistance per Mile	34.12 ohms	38.23
Approximate Weight per Mile	170 lb.	170
Weight per Coil, Approximate	150 lb.	150
Weight per Coil, Minimum	140 lb.	140
Weight per Coil, Maximum	160 lb.	160
Length per Coil, Approximate	4659 ft.	4659
Length per Coil, Minimum	4348 ft.	4348
Length per Coil, Maximum	4970 ft.	4970

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Crapo Galvanized Tie Wires

Manufactured specially to facilitate tying in telephone line wire. Galvanized by Crapo process.

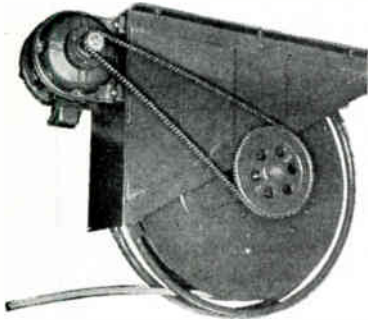
Furnished in coils or straightened and cut to length. Standard bundle for horseshoe tie, 25 pounds. Standard bundle for armor tie, 50 pounds.

Size B.W.G.	STANDARD COILS		STRAIGHTENED AND CUT TO LENGTH			
	Approx. Length Feet	Approx. Weight Pounds	For Horseshoe Tie		For Armor Tie	
			Length Inches	No. Pieces	Length Inches	No. Pieces
10	2040	100	18	350	48	260
10	2040	100	16	390	46	270
12	3100	100	14	675	44	430
14	2650	50	14	1150	40	810

Gleason Reels

Gleason Reels are designed to furnish electric power to portable machinery and tools. The capacities of reels are unlimited, and vary according to the work, whether retrieving, lifting or stretching.

Special Features. Steel instead of cast iron, ball bearings, Micarta insulation, non-ferrous brush rigging, and most important—ability to cover. For example, 200-foot run with 100-foot cable, without central obstruction of right angle outlet. The steel construction permits this.



Motor Driven Reel

Motor Driven Reels

Specially developed G-E Motors and Control are used. These motors stand still with normal torque and normal current.

Motor No. 1. Squirrel cage 10 minutes.

Motor No. 2. Slip ring—continuous.

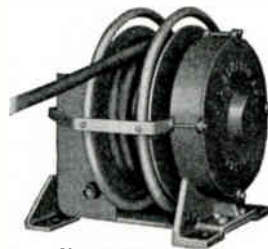
Motor reels are designed to fit the job, preferably in close cooperation with your engineer.

Prices start at \$750.00 net. Complete information will be furnished on request.

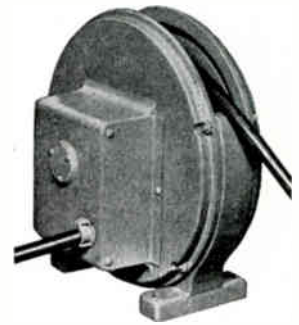
Gear Driven Spring Reels



No. SHO-400

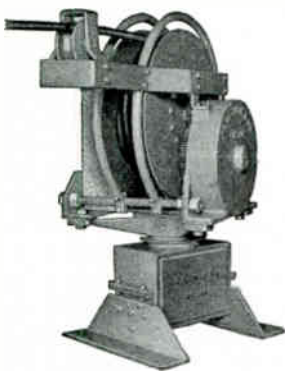


Nos. S-60 and S-25



No. S-15

Gear driven spring reels permit the spring to be stationary and uncoil in a grease filled case driving spool through variable gear ratio to fit the application. They also permit the use of parallel springs which divide the risk, whereas series springs multiply the chance of breakage. Springs can lift and stretch cables horizontally—motors cannot.



Nos. S-75 and S-100 with Revolving or Swivel Base

No.	Description	Each
SHO-400	Overhung, Limit 150 Feet 3/0 Cable	\$850.00
SHO-200	Overhung, Limit One Half (above reel)	500.00
S-200	Not Overhung, Limit to 100 Feet No. 1 Wire	400.00
S-100	Suitable for Outdoor Use. Limit No. 2 Cable, 75 Feet; 200 Feet No. 12 Cable, Etc.	200.00
	If No. S-100 is Desired Strictly Water-Tight, Add	25.00
SHO-101	Special Water-Tight Magnet Reel	250.00
S-75	Popular Magnet Reel. Limited to No. 6 Wire, 50 Feet; 125 Feet No. 14, Etc.	150.00
S-60	General Purpose Reel—The Largest Seller. Limit 50 Feet No. 10; 60 Feet No. 14	90.00
S-25	Limit 25 Feet No. 10; 30 Feet No. 14	75.00
S-15	Limit 15 Feet No. 10; 18 Feet No. 14; Includes Cable	50.00
Bases		
.....	Revolving Bases. Add to No. S-100 or Smaller	85.00
.....	*Swivel Bases (Of Same Dimensions)	45.00
.....	*Swivel bases are recommended for larger cables.	
Heads		
.....	Swivel Heads 360 Degrees. Suitable for Small Cables, Limit No. 10	15.00

Light Tension Reels

For light cranes and Monorail hoist. The standard reel will pull a light Monorail hoist along the track. Prices include cable.

No.	Description	Each
S-62	Single Phase 220 Volt, Limit 50 Feet No. 16 Cord Only	\$50.00
S-35	Three Phase 600 Volt, Limit 50 Feet No. 16; 40 Feet No. 14; 30 Feet No. 10	75.00
S-61	For 50 Feet No. 10	110.00

Appleton Portable Reelites



Portable Type
660 Watts, 250 Volts

An automatic reeling device for extension light cords. The light is always available within arm's reach and no time is lost in untangling cords or plugging in for new extensions. Each reel has a ratchet stop which works exactly like a window shade.

Furnished standard with cover plate which fits over all 3 1/4 or 4-inch octagonal outlet boxes. Furnished with No. 18 gage rubber cord.

With 12 Feet of Cord—5 1/2-Inch Reelite

No.	Each	Description	Wt. Lb. per Dos.
1532	\$9.50	Without Wiring Device	50
1533	10.00	Brass Shell Key Socket	61
1534	10.00	Composition Key Socket	62

With 25 Feet of Cord—7 1/4-Inch Reelite

1524	\$12.00	Without Wiring Device	93
1524 1/2	13.00	*Keyless Socket (Cord Grip)	97
1525	12.50	Brass Shell Key Socket (Less Guard)	94
1526	12.50	Composition Key Socket (Less Guard)	97
1530	13.00	†Grounding Type without Wiring Devices	95

With 40 Feet of Cord—10-Inch Reelite

1519	\$23.00	Without Wiring Device	150
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*Socket rated at 660 watts, 600 volts.

†Furnished with No. 18-3 conductor cord, two of which are connected to brushes and third grounded to frame.

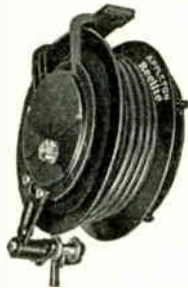
For Type SJ Cord
20 Amperes, 600 Volts

Especially developed for Type SJ two and three conductor cords.

The roller outlet permits either ceiling, wall, or base mounting.

Furnished with 25 feet of cord.

No.	15218	15318	15216	15316
Each	\$44.50	50.00	45.00	50.00
Size Cord	18	18	16	16
No. of Condulets	2	3	2	3
Wt. lb.	14	14	14	14



Vaporproof (Keyless) Type
660 Watts, 250 Volts

Furnished with vaporproof globe and heavy duty wire guard. Will accommodate 25 to 40-watt lamps, inclusive.

Black enameled reel-unit, 7 1/4 inches in diameter, with ceiling mounting for attaching to standard 3 1/4 to 4-inch octagonal outlet boxes. Furnished with 20 feet of No. 18 rubber covered cord; wood handle; heavy duty wire guard.

Weight per dozen, 144 pounds.

No. 1529...each \$17.50



Vaporproof Type

octagonal outlet boxes; wood handle and heavy duty wire guard.



Heavy Guard Type

Heavy Guard Type
With Half Reflector
660 Watts, 250 Volts

Reelite is supplied with or without switch in handle. Wire guard accommodates up to and including 100-watt lamps. Supplied with 25 feet, No. 18 rubber covered cord. Reel-unit, 7 1/4 inches diameter, black enameled finish. Has base for attaching to standard 3 1/4 or 4-inch

No.	Each	Type Socket	Wt. Lb. per Dos.
1522	\$15.00	Keyless	133
1528	15.00	Levolier	121

Appleton Portable Reelites

Rubber Handle Type

With Half Reflector
660 Watts, 250 Volts

Furnished with or without switch in handle. Also has heavy duty wire guard accommodating up to and including 100-watt lamps.

Black enameled reel-unit 7 1/4 inches diameter, with base for attaching to 3 1/4 to 4-inch outlet boxes; 25 feet No. 18 cord, rubber handle.



Rubber Handle Type

Battery Lamp Type
660 Watts, 250 Volts

This special type reelite is equipped for 21 or 32-cp. 6-8-volt battery lamp to operate off a storage battery. Bulbs not included.

Black enameled reel-unit 7 1/4 inches diameter, with base for attaching to ceiling, or wall of truck; 25 feet No. 18 cord.

Weight per dozen, 96 pounds.

No. 1518...each \$13.00



Battery Lamp Type

Machine Tool Type
660 Watts, 250 Volts

This reelite is equipped with a connector body so that any portable electrical tool or device can be attached.

Black enameled reel-unit 7 1/4 inches diameter, with base for attaching to 3 1/4 or 4-inch outlet boxes; 25 feet No. 18 cord.

Weight per dozen, 97 pounds.

No. 1523...each \$12.50



Machine Tool Type

Special reelite with swivel cover, light spring tension without ratchet stop. No wiring devices furnished.

Black enameled reel-unit with base for attaching to 3 1/4 or 4-inch outlet boxes.

Supplied with No. 18 cord.

No.	Each	Diameter Reel, In.	Length Cord, Ft.	Wt. Lb. per Dos.
1511	\$23.50	10	50	140
1521	12.50	7 1/4	25	96



Cloth Cutting Machine Type

Cloth Cutting Machine Type
660 Watts, 250 Volts

Cast Base

Used for mounting of portable reelites, base down. Base may be furnished instead of 3 1/4 or 4-inch outlet plate when specified, at no extra charge. If furnished separately, No. and price must be added.

No. 1535...each \$7.75

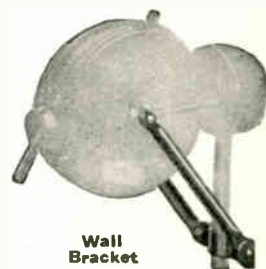


Cast Base

Wall Bracket

Recommended for wall mounting of portable reelites. Support may be ordered separately or with reelite.

No.	Each	For Use With
1537	\$1.50	5 1/2-In. Reelite
1538	1.50	7 1/4-In. Reelite
1539	1.50	10 -In. Reelite



Wall Bracket

Appleton Constant Duty Reelites

Spring-Driven Cable Lift Reel

Type A Reelite



Made of cast aluminum and steel. Black enameled finish. When ordering, specify number of reelite, length, gage and number of conductors of cable, type of cable outlet desired.

Type A—3-Spring—35 Amperes, 600 Volts

No.	Each	No. of Conductors	MAX. CAPACITY, FEET, OF VARIOUS SIZES AND CONDUCTORS OF RUBBER-COVERED CABLE					Weight Pounds Reelite Only
			No. 18	No. 16	No. 14	No. 12	No. 10	
A-23	2	55	55	50	35	..	36
A-33	3	55	55	45	35	..	37
A-43	4	55	55	35	30	..	38
A-53	5	50	50	30	20	..	43
A-63	6	45	40	20	20	..	44

Type A—5-Spring—35 Amperes, 600 Volts

A-25	.....	2	100	90	55	..	..	40
A-35	.....	3	90	75	50	..	..	41
A-45	.....	4	75	60	..	..	..	42
A-55	.....	5	60	..	..	..	..	47
A-65	.....	6	50	..	..	..	..	48

Reelite for Type S Cord

Made of cast aluminum and steel. Black enameled finish. When ordering, specify number of reelite, length, gage and number of conductors of cable, type of cable outlet desired.

Type BS—35 Amperes, 600 Volts

BS-22	.....	2	..	..	60	60	55	124
BS-32	.....	3	..	..	60	60	55	126
BS-42	.....	4	..	65	60	50	50	128
BS-52	.....	5	65	65	55	50	45	154
BS-62	.....	6	65	65	55	50	40	156
BS-72	.....	7	65	65	55	50	40	158
BS-82	.....	8	60	55	40	35	30	160

Type CS—35 Amperes, 600 Volts

CS-24	.....	2	110	110	105	90	85	154
CS-34	.....	3	110	110	100	85	70	156
CS-44	.....	4	110	110	90	75	60	158
CS-54	.....	5	110	110	75	65	55	184
CS-64	.....	6	110	110	65	55	45	186
CS-74	.....	7	110	110	65	55	45	188
CS-84	.....	8	85	80	45	40	35	190

Type DS—35 Amperes, 600 Volts

DS-32	.....	3	..	..	..	..	80	214
DS-42	.....	4	..	..	..	80	75	216
DS-52	.....	5	..	..	80	75	70	240
DS-62	.....	6	..	..	80	75	65	242
DS-72	.....	7	..	..	75	70	65	244
DS-82	.....	8	..	..	65	65	50	246

Type ES—35 Amperes, 600 Volts

ES-24	.....	2	150	150	140	135	130	272
ES-34	.....	3	150	150	140	135	125	274
ES-44	.....	4	150	150	130	130	105	276
ES-54	.....	5	150	150	130	110	90	300
ES-64	.....	6	150	140	110	95	80	302
ES-74	.....	7	150	140	110	90	70	304
ES-84	.....	8	130	130	85	70	55	306

Appleton Constant Duty Reelites

Spring-Driven Cable Lift Reel Reelite for Type W Cable

Made of cast aluminum and steel. Black enamel finish.

Type BW—100 Amperes, 600 Volts

No.	Each	No. of Conductors	MAX. CAPACITY, FEET, OF VARIOUS SIZES AND CONDUCTORS OF RUBBER-COVERED CABLE					Weight Pounds Reelite Only
			No. 8	No. 6	No. 4	No. 3	No. 2	
BW-12	1	60	60	55	..	..	122
BW-22	2	45	35	35	..	..	124
BW-32	3	40	30	30	..	..	126
BW-42	4	30	25	25	..	..	128

Type CW—100 Amperes, 600 Volts

CW-14	.....	1	100	100	85	..	..	152
CW-24	.....	2	55	40	25	..	..	154

Type DW—100 Amperes, 600 Volts

DW-12	.....	1	..	..	..	75	65	60	210
DW-22	.....	2	75	65	45	35	30	25	212
DW-32	.....	3	65	50	35	30	25	20	214
DW-42	.....	4	50	40	25	20	15	15	216

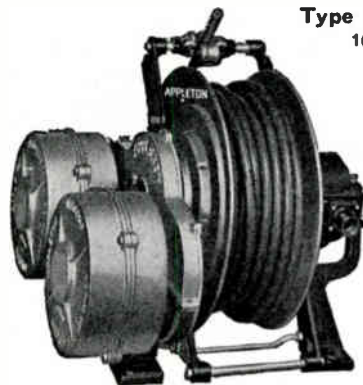
Type EW—100 Amperes, 600 Volts

EW-14	.....	1	140	135	120	110	100	75	270
EW-24	.....	2	90	70	..	..	..	..	272
EW-34	.....	3	70	55	..	..	..	..	274
EW-44	.....	4	55	45	..	..	..	..	276

Type EWM—Special Mill Type—100 Amperes, 600 Volts

EWM-15	.....	1	140	135	120	110	100	75	285
EWM-25	.....	2	90	70	..	..	..	..	287
EWM-35	.....	3	70	55	..	..	..	..	289
EWM-45	.....	4	55	45	..	..	..	..	291

Type EG—For Type W Cable 100 Amperes, 600 Volts



Spring-driven through cut gears. Cable outlet is the four-roller type. Cast aluminum and steel construction; black enameled finish.

When ordering, specify number of reelite, length, gage and number of conductors of cable.

EG-22	.....	2	..	75	60	55	50	45	358
EG-32	.....	3	75	65	55	50	45	40	360
EG-42	.....	4	70	60	50	45	40	35	362
EG-14	.....	1	..	..	130	130	120	110	370
EG-24	.....	2	110	105	90	70	65	50	372
EG-34	.....	3	105	100	75	65	60	45	374
EG-44	.....	4	100	85	60	55	45	..	376

Roller Cable Outlets For Constant Duty Reelites



Guide Roller Type

Swivel Type

Large Roller Type

In order to obtain maximum efficiency from the constant duty reelite, it is necessary not only to choose the correct outlet, but also to set it in correct position so that future difficulties and additional expense are avoided.

Guide Roller Type Cable Outlet.—Used generally for all conditions where cable is drawn at a tangent to reel drum. Cable may be pulled within a conical plain of 30 to 40 degrees without a serious loss of efficiency.

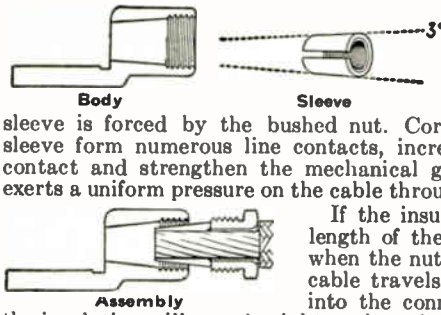
Swivel Type Cable Outlet.—Used where cable must be drawn at right angles to drum and in arcs of a maximum range of 225 degrees. Only cable o.d. of 1½ inches and less can be used with this outlet.

Large Roller Type.—Used for installation where cable is drawn out in a straight line parallel to the track and where current source is at the mid-point of the runway. Only cable o.d. of 1½ inches and less can be used.

All constant duty reelites are furnished with any one of the cable outlets as standard equipment. When purchased separately, prices on request.

T & B Tite-Bind Solderless Connectors

T & B Tite-Bind Connectors and Lugs are designed to give the best electrical contact and mechanical connection, utilizing a principle unique in this field.



The bore of the body has a slight (3°) taper into which the tapered sleeve is forced by the bushed nut. Corrugations in the sleeve form numerous line contacts, increase the area of contact and strengthen the mechanical grip. The sleeve exerts a uniform pressure on the cable throughout its length.

If the insulation is cut the length of the sleeve and nut, when the nut is made up, the cable travels with the sleeve into the connector body and the insulation will remain tight against the nut.

As the sleeve travels into the body the slight tapers exert a great pressure on the cable. This maximum pressure produces the minimum electrical resistance and the maximum electrical conductivity.

The open end of the lug offers visual evidence that the cable is of proper size and in place.

Once made up tight, the sleeve stays wedged in place and exerts the same pressure on cable even with nut removed.

Solderless Lugs

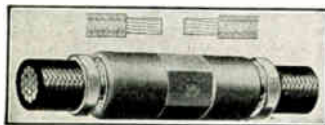


Tite-Bind Solderless Lugs are for connecting wire, cable, or tubing to terminals on equipment, to bus bars, etc.

Front-connected lug as illustrated, with either one or two bolt holes is standard, with standard tongue dimensions and drillings. For special tongue dimensions and drillings, add 20 per cent to list price.

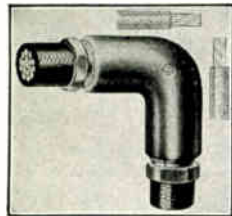
Center-formed lugs, angle lugs, round-tongue lugs, and other varieties will be furnished at an increase in price.

2-Way Connectors



Used for splicing the ends of conductors of the same size.

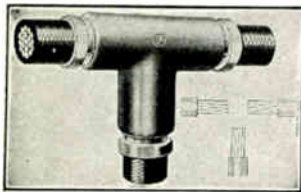
Reducers for splicing the ends of two conductors of different sizes can also be furnished.



Elbow Connectors

Elbow connectors are used for splicing two conductors at right angles and are useful where short bends must be made in heavy conductors.

Reducing elbows and elbows of other angles are also furnished



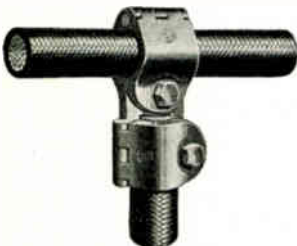
3-Way Connectors

The 3-way connectors are used to splice three conductors of the same size or of different sizes.

The T or right angle type is illustrated. The Y type is also regularly furnished.

Cable Taps

Tee Taps



Hinjon Cable Taps are used for tapping off from a continuous main to a branch at right angles.

They are a one-piece fitting and are quickly installed.

Furnished for all combinations of main and branch conductor sizes.

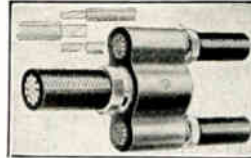
Insulating covers are available for sizes up to 500,000 c.m.

**T & B Tite-Bind Solderless Connectors
Hinjon Parallel Gutter Taps**



Hinjon Parallel Taps are similar in design to the cable taps, except that the main and branch conductor connections are parallel.

Used to tap a main conductor where space is limited, as in panel board gutters, etc. Regularly furnished for all combinations of main and branch conductor sizes.



Connecting Blocks

The 3-way connecting block is illustrated, but connecting blocks are furnished for any number of conductors and any combination of sizes.

Additional Designs

Only a few of the more popular types of connectors are illustrated. Other types are designed for all types of transmission line, high tension and special installations. There are connectors designed to hold in excess of the cable strength. For example, a T & B 2-Way Connector of special construction has been approved for use with Type HH cable, the connector developing the full cable strength.

T & B Solderless Connectors or related material will be specially designed to meet any special requirements.



All T & B Solderless Connectors can be furnished with parts rounded for high tension installation, as illustrated.

Size Conductor A.W.G.	Standard Lugs		2-Way and Elbows Each	3-Way T or Y Type Each	Cable Taps Each	Parallel Gutter Taps Each
	One Bolt Hole Each	Two Bolt Holes Each				
14	\$.40	\$.60				
12	.40	.60				
10	.40	.60	\$.80	\$ 1.20	\$ 1.20	\$ 1.20
8	.40	.60	.80	1.20	1.20	1.20
6	.50	.70	.80	1.20	1.20	1.20
4	.50	.70	.80	1.20	1.40	1.20
2	.70	.90	1.00	1.50	1.50	1.40
1	.70	.90	1.00	1.50	1.70	1.40
0	.90	1.10	1.20	1.80	1.80	1.40
00	1.10	1.30	1.50	2.20	2.00	1.40
000	1.50	1.70	1.80	2.70	2.40	1.60
0000	1.50	1.70	2.20	3.30	2.40	2.00
CM.						
250000	1.90	2.10	2.60	3.80	3.00	2.20
300000	1.90	2.10	3.00	4.50	3.00	2.50
350000	2.40	2.80	3.50	5.20	4.20	2.80
400000	2.40	2.80	4.00	6.00	4.20	2.90
450000	2.90	3.30	4.60	6.90	5.20	3.70
500000	2.90	3.30	5.20	7.80	5.20	4.20
550000	3.60	4.00	6.00	9.00	6.80	4.60
600000	3.60	4.00	6.50	9.70	6.80	5.00
650000	3.60	4.00	7.00	10.50	8.00	5.00
700000	5.00	5.00	7.50	11.20	8.00	5.60
750000	5.00	5.00	8.00	12.00	5.60	5.90
800000	5.00	5.00	8.50	12.70	5.60	6.50
850000	5.80	6.40	9.00	14.20	12.00	6.50
900000	5.80	6.40	9.50	14.20	12.00	7.40
950000	5.80	6.40	10.00	15.00	13.20	7.60
1000000	5.80	6.40	10.00	15.00	13.20	7.60
1100000	8.20	8.20	12.00	18.00	16.20	.....
1200000	8.20	8.20	12.00	18.00	16.20	.....
1400000	11.00	11.00	14.00	21.00	20.00	.....
1500000	11.00	11.00	14.00	21.00	20.00	.....
1600000	12.80	12.80	16.00	24.00	23.20	.....
1700000	12.80	12.80	16.00	24.00	23.20	.....
1800000	12.80	12.80	18.00	27.00	27.00	.....
1900000	14.80	14.80	18.00	27.00	27.00	.....
2000000	14.80	14.80	18.00	27.00	27.00	.....

When ordering, give size and type of conductor being used. Connectors will be furnished for stranded cable unless otherwise specified.

Reducers, reducing elbows, and 3-way connectors, cable taps, and parallel taps to take different sizes of cables are regularly furnished. Prices on these items, listings of other items, and dimensional data furnished on request.

T & B Hinjon Junior Tee-Parallel Tap-In One



Will take any type wire, cable, or tubing that will go into the fitting. Installation consists of skinning the main, inserting the branch and tightening. Tightening locks the threads; vibration-proof.

Approved by Underwriters' Laboratories. Made of high conductivity bronze.

No.	SIZE CABLE		Each
	Main	Branch	
35107	No. 8 to 4	No. 14 to 8	\$.85
35108	No. 8 to 4	No. 8 to 4	.90
35109	No. 4 to 1/0	No. 14 to 4	1.00
35110	No. 4 to 1/0	No. 4 to 1	1.20
35111	1/0 to 4/0	No. 14 to 4	1.40
35112	1/0 to 4/0	No. 8 to 1	1.50
35113	4/0 to 300,000 C.M.	No. 14 to 4	1.60
35114	4/0 to 300,000 C.M.	No. 8 to 1	1.80
35115	300,000 to 500,000 C.M.	No. 14 to 4	2.30
35116	300,000 to 500,000 C.M.	No. 8 to 1	2.80
35118	500,000 to 750,000 C.M.	No. 14 to 1	3.60
35120	750,000 to 1,000,000 C.M.	No. 14 to 1	4.80

T & B Lug-Its



A one-piece assembly that will not come apart. Floating saddle gives even pressure and maximum contact. Overlapping saddle assures inclusion of all strands. Tongue of pure copper for maximum conductivity. Body and saddle of high conductivity bronze. Electro-tin plated to prevent corrosion.

Approved by Underwriters' Laboratories.

No.	Per 100	WIRE SIZE		Carton	Std. Pkg.	Wt. Lb. per 1000
		Minimum	Maximum			
LC6	\$9.50	No. 14 Solid	No. 8 Strand	250	1000	15
LF1	12.00	No. 8 Solid	No. 4 Strand	250	1000	30

T & B Disconnect Hangers



Provides a safety disconnect for light and power circuits. Designed primarily for Mercury Vapor Lighting Units, it can be used equally well with other types of industrial lighting fixtures.

Consists of a locking hook with 10-ampere, 250-volt polarized receptacle and a bushed loop. Made of malleable iron, it supports fixture or pendant outlet. Approved by Underwriters' Laboratories.

Size Male Loop In.	Size Female Loop In.	2-Wire Receptacle			3-Wire Receptacle			
		Std. Pkg.	No.	Each	Wt. Lb. per 100	No.	Each	Wt. Lb. per 100
1/2	1/2	10	6140	\$4.00	100	6144	\$10.00	130
1/2	5/8	10	6141	4.00	105	6145	10.00	135
3/4	1/2	10	6142	4.00	110	6146	10.00	140
3/4	3/4	10	6143	4.00	115	6147	10.00	145

T. & B. Wedge-On Conductor Terminals



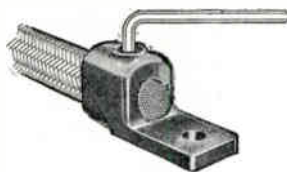
Designed to eliminate breakage of soldering lugs and other types of terminals. Puts a heavy pressure on wire to hold it securely and applies pressure so wire cannot break. Supports wire so that vibration or flexing

of wire will not break strands. Makes a tight joint. Approved by Underwriters' Laboratories. Can be furnished with insulating case when specified. No. 9L101 takes 19 strands of No. 22 control wire. Std. package, 200.

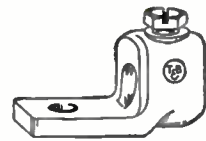
Cat. No.	Per 100	Sol. and Strd. Wire No.	Wt., Lbs. per 1000	Cat. No.	Per 100	Sol. and Strd. Wire No.	Wt. Lbs. per 1000
18L100	\$5.00	22-18	4 1/2	8L100	\$8.00	8	21
16L100	5.00	16	6 1/2	6L100	9.00	*6	28
14L100	5.00	14	8	6SL100	9.00	†6	28
12L100	6.00	12	10	4L100	10.00	*4	32
10L100	7.00	10	11	4SL100	10.00	†4	32
9L101	7.50	9	18				

*Stranded only. †Solid only.

T & B Lock-Tite Lugs



With Socket Screws



With Hex Head Screws

A lug that fits any kind of cable—solid, stranded, flexible, hemp-core, etc. Is easily installed with a key wrench. Resists vibration because it is locked tight. One-piece design; has no loose parts. Can be used over and over again.

Approved by Underwriters' Laboratories.

For hex head screws, prefix number with H; no extra charge.

Size Cable	Pieces to Carton	Single Bolt Hole		Double Bolt Hole	
		No.	Per 100	No.	Per 100
4 Solid to 1 Strand	24	31007	\$.70	32007	\$.90
1 Solid to 2/0	12	31009	1.10	32009	1.30
2/0 to 4/0	6	31011	1.50	32011	1.70
4/0 to 300,000 C.M.	6	31013	1.90	32013	2.10
300,000 to 500,000 C.M.	3	31015	2.90	32015	3.30
500,000 to 750,000 C.M.	3	31017	5.00	32017	5.00
750,000 to 1,000,000 C.M.	3	31019	5.80	32019	6.40

Key Wrenches



For use with Lock-Tite lugs on all sizes.

No. 30, For Lugs of 4 Solid to 1 Strand, 1 Solid to 2/0, and 2/0 to 4/0 Cable Sizes	each	\$.20
No. 30, For Lugs of 4/0 to 300,000 C.M., 300,000 to 500,000 C.M., 500,000 to 750,000 C.M., and 750,000 to 1,000,000 C.M. Cable Sizes	each	.30

T & B Lock-Tite 2-Way Connectors



No.	Size Cable	Each
32507	4 Solid to 1 Strand	\$1.00
32509	1 Solid to 2/0	1.50
32511	2/0 to 4/0	2.20
32513	4/0 to 300,000 C.M.	3.00
32515	300,000 to 500,000 C.M.	5.20
32517	500,000 to 750,000 C.M.	8.00
32519	750,000 to 1,000,000 C.M.	10.00

T & B Lock-Tite Tee-Parallel Taps



This tap will do the work of 264 conventional type tee and parallel taps. Will take any type wire within its range as well as round or tubular bus of equivalent diameters. Body sizes open wide to allow easiest imaginable assembly to main and branch. All in one-piece; no detachable parts.

This tap can be used in any position; the branch can be run above, below or alongside the main on a parallel job, above, or below the main on a tee job, by swinging the tap to desired position.

Approved by the Underwriters' Laboratories.

No.	SIZE CABLE		Each
	Main	Branch	
35003	1/0 to 4/0	No. 2 Solid & Strand to No. 1	\$1.80
35005	1/0 to 4/0	1/0 to 4/0	2.40
35007	4/0 to 300 M.C.M.	No. 2 Solid & Strand to 1/0	2.20
35009	4/0 to 300 M.C.M.	2/0 to 300 M.C.M.	3.00
35011	300 to 500 M.C.M.	No. 2 Solid & Strand to 3/0	3.90
35013	300 to 500 M.C.M.	4/0 to 500 M.C.M.	5.20

Dossert Solderless Connectors



Type A, 2-Way



Type C, 2-Way



3-Way Joint



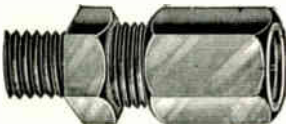
Elbow



Y-Joint



Type F Stud Connector



Type M Stud Connector



Style R Cable Anchor



Style S Cable Anchor



Style E Cable Anchor

Dossert Connectors eliminate the use of solder in making electrical connections. They are approved for use without solder on all classes of wiring on both solid and stranded conductors.

The Dossert joint has greater mechanical strength than a soldered joint and an electrical conductance in excess of the cable.

2-Way Connectors

Size of Conductor	Each
14-4*	\$.40
3-2-1*	.50
0*	.60
00*	.75
000*	.90
0000*	1.10
250,000 CM	1.30
300,000 CM	1.50
350,000 CM	1.75
400,000 CM	2.00
450,000 CM	2.30
500,000 CM	2.60
550,000 CM	3.00
600,000 CM	3.25
650,000 CM	3.50
700,000 CM	3.75
750,000 CM	4.00
800,000 CM	4.25
850,000 CM	4.50
900,000 CM	4.75
950,000 CM	5.00
1,000,000 CM	5.00
1,250,000 CM	6.00
1,300,000 CM	6.50
1,400,000 CM	7.00
1,500,000 CM	7.00
1,750,000 CM	8.00
2,000,000 CM	9.00
2,500,000 CM	12.50
3,000,000 CM	16.00

*Specify if for solid or stranded on sizes 14 to 0000.

Reducers take the maximum 2-way list.

The 3-ways and Y's add 50 per cent to 2-way list.

The 3-ways, Y's reducers take maximum cable size price.

Elbows take same price as 2-ways. See list above.

List prices of Styles F and M Stud Connectors are the same as a 2-way of corresponding size less 20 per cent, except when special large diameter or length of stud end is specified.

List prices of Style S Cable Anchor are the same as for 2-way connectors of corresponding sizes.

List prices of Styles R and E Cable Anchors are the same as for regular 3-way connectors of corresponding size.

Dossert Solderless Lugs



Front Lug



Angle Lug



Swivel Lug



Back Lug

Size of Conductor	1-Hole Each	2-Hole Each	4-Hole Each	Back Lug, Angle Lug, One-Half of Swivel Each
14-8	\$.20	\$.30	....	\$ .24
6-4	.25	.35	....	.30
2-1	.35	.45	....	.42
0	.45	.55	....	.42
00	.55	.65	....	.66
000-0000	.75	.85	....	.90
250-300 MCM	.95	1.05	....	1.14
350-400 MCM	1.20	1.40	....	1.44
450-500 MCM	1.45	1.65	\$2.15	1.74
550-600-650 MCM	1.80	2.00	2.50	2.16
700-750-800 MCM	2.50	2.50	2.90	3.00
850-900-1000 MCM	2.90	3.20	3.50	3.48
1100-1200-1250 MCM	4.10	4.10	4.20	4.92
1300-1400-1500 MCM	5.50	5.50	5.60	6.60
1700-1750-1800 MCM	6.40	6.40	6.50	7.68
1900-2000 MCM	7.20	7.20	7.50	8.80
2500-3000 MCM				

Prices on Request

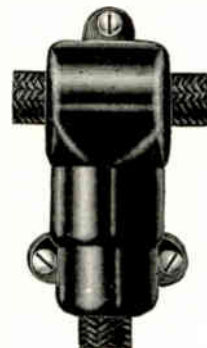
Dossert Insulating Covers

2-Way Covers



Nos. 4, 6 and Smaller Sizes.....	each	\$.30
Nos. 1, 2 and 3.....	each	.40
Nos. 00 and 0.....	each	.50
250,000 CM, Nos. 0000 and 000.....	each	.60
300,000 CM.....	each	.80
500,000, 450,000, 400,000, or 350,000 CM.....	each	1.50

Hook Tap Covers



No. 1 Main and Branch.....	each	\$.60
No. 00 Main and Branch.....	each	.80
No. 0000 Main and Branch.....	each	1.00
250,000 CM Main, No. 1 Branch.....	each	1.10
300,000 CM Main and Branch.....	each	1.30
500,000 CM Main, No. 00 Branch.....	each	1.70
500,000 CM Main and Branch.....	each	2.00

Dossert Cable Taps

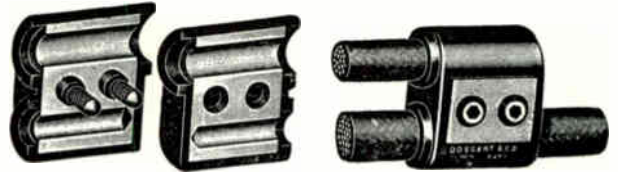
Dossert Parallel Gutter Taps



Hook Type



Bolt Type



Insulated Type



Type W, Not Insulated

The cable tap is used to connect a branch wire, rod, or bleeder to a main wire, rod, or feeder. It does not splice the main but simply clamps onto it.

The hook type consists of hook, cover, jam nut, compression nut, and compression sleeve. The upper parts of cover and hook are machined to fit the main wire, while the lower end or shank is threaded, drilled, and tapered to form a nipple of a regular 2-way connector.

The bolt type is in the form of a split tee clamp tightened by four strong bolts. The branch connection is held by a Dossert compression sleeve and nut. The tap is made without cutting the main conductor.

The insulated parallel gutter tap consists of two parts only. It has two countersunk hardened screws of the wrench type. The screws are held in place by washers to prevent falling out. This molded insulated unit saves practically all of the time required for taking off or putting on loose covers with screws in the narrow gutter of a panel. It is especially adapted for making taps on live cables. Made in the same sizes as Type W; prices upon application.

Dossert Cable Taps Hook or Bolt Types

Size Main A.W.G.	SIZE BRANCH, A.W.G.								SIZE BRANCH, C.M.											
	6-8 Each	4 Each	2 Each	1 Each	0 Each	00 Each	000 Each	0000 Each	250M 300M Each	350M 400M Each	450M 500M Each	550M to 650M Each	700M 750M Each	800M Each	1000M Each	1250M Each	1500M Each	1750M Each	2000M Each	
8-6	\$.60																			
4-2	.65	\$.70	\$.75																	
1, 0, 00	.70	.75	.80	\$.85	\$.90	\$1.00														
000	.80	.80	.85	.90	.95	1.05	\$1.20													
0000	.80	.80	.85	.90	.95	1.05	1.20	\$1.20												
C.M.																				
250M- 300M	.90	.90	1.00	1.10	1.10	1.20	1.35	1.35	\$1.50											
350M- 400M	1.20	1.20	1.30	1.40	1.40	1.50	1.65	1.65	1.90	\$2.10										
450M- 500M	1.50	1.50	1.60	1.70	1.70	1.80	1.95	1.95	2.10	2.30	\$2.60									
550M- 600M	1.90	1.90	1.90	1.90	1.90	2.00	2.15	2.15	2.30	2.50	3.00	\$3.40								
650M- 700M	2.20	2.20	2.20	2.20	2.20	2.30	2.45	2.45	2.60	2.80	3.20	3.60	\$4.00							
750M- 800M	2.50	2.50	2.50	2.50	2.50	2.60	2.75	2.75	2.90	3.10	3.50	3.90	4.30	\$4.80						
850M-1000M	3.00	3.00	3.00	3.00	3.00	3.10	3.25	3.25	3.50	3.75	4.20	4.60	5.50	\$6.60						
1200M-1300M	5.45	5.45	5.45	5.45	5.45	5.45	5.45	5.45	5.60	5.80	6.00	6.30	6.70	7.60	\$8.10					
1500M	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.15	7.35	7.55	7.85	8.25	8.70	9.45	\$10.00				
1750M	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.15	8.35	8.55	8.85	9.25	9.25	9.70	10.20	11.00	\$11.50		
2000M	9.20	9.20	9.20	9.20	9.20	9.20	9.20	9.20	9.35	9.55	9.75	10.00	10.45	10.45	10.90	11.40	12.35	12.80	\$13.50	

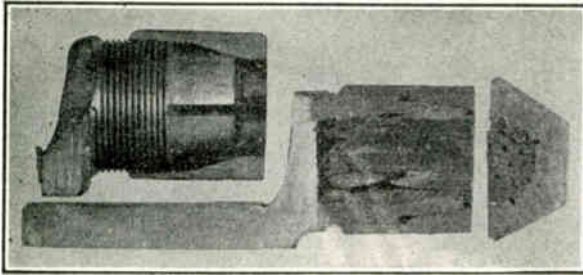
Prices on larger sizes upon application.

Type W Dossert Parallel Gutter Taps

Size Main A.W.G.	SIZE BRANCH, A.W.G.					SIZE BRANCH, C.M.								
	8, 6, or 4 Each	2 Each	1 or 0 Each	00 Each	000 Each	250M Each	300M Each	350M Each	400M Each	500M Each	600M Each	700M Each	800M Each	
8, 6, or 4	\$.60													
2	.60	\$.70												
1 or 0	.70	.70	\$.70											
00	.70	.70	.70	\$.70										
000	.70	.70	.80	.80	\$.80									
0000	.80	.80	.90	.95	.95	\$1.00								
C.M.														
250000	.85	.85	.90	.95	1.05	1.05	\$1.10							
300000	1.00	1.00	1.00	1.00	1.10	1.10	1.25	\$1.25						
350000	1.10	1.10	1.10	1.10	1.20	1.20	1.40	1.40	\$1.40					
400000	1.15	1.15	1.15	1.15	1.25	1.25	1.40	1.40	1.45	\$1.45				
500000	1.50	1.50	1.50	1.50	1.65	1.65	1.80	1.80	1.95	1.95	\$2.10			
550000	1.75	1.75	1.75	1.75	1.85	1.85	2.00	2.00	2.10	2.10	2.30			
600000	1.85	1.85	1.85	1.85	1.85	1.85	2.10	2.10	2.10	2.10	2.40	\$2.50		
650000	1.85	1.85	1.85	1.85	1.85	1.85	2.10	2.10	2.10	2.10	2.40	2.50		
700000	2.00	2.00	2.00	2.00	2.00	2.00	2.20	2.20	2.40	2.40	2.70	2.75	\$2.80	
750000	2.20	2.20	2.20	2.20	2.20	2.30	2.30	2.40	2.40	2.50	2.90	3.10	3.10	
800000	2.20	2.20	2.20	2.20	2.30	2.30	2.40	2.40	2.50	2.50	2.90	3.10	3.10	\$3.25

Prices on larger sizes upon application.

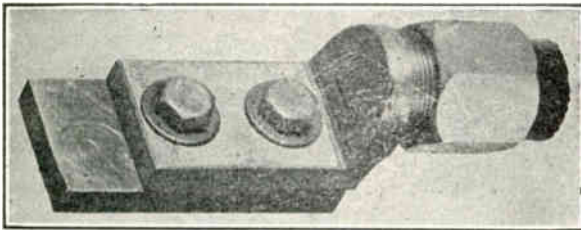
Frankel Solderless Connectors



View Showing Construction

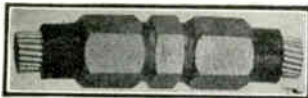
Compression on the cable is obtained by the action of the bevel inside the nut, and the bevel outside, on the body of the connector. The Gripping Jaws are one piece with the body of the connector. There are no loose sleeves.

No. 2563 Front Lugs



For connecting cable to a bus bar or terminal. These lugs can be supplied for bolting to the bus with one, two, or four bolts; offset as illustrated or at various angles to the wire. Special sizes and shapes can be supplied quickly.

No. 2560 Tway Connectors



The tway splices two cables end to end. Two-ways can be supplied to connect two cables of the same size, or different sizes.

No. 2559 Y and No. 2561 Threeway Connectors

Connectors are available for splicing two wires at right angles, and three wires in a T or Y shape, and four wires in an X shape.

Wire Size	No. 2568 Front Lugs			No. 2560 Tway No. 2562 Elbow Each	No. 2561 Threeway No. 2559 Y Each
	1-Hole Each	2-Hole Each	4-Hole Each		
14	\$.40	\$.60	.....	\$ .80	\$ 1.20
12	.40	.60	.....	.80	1.20
10	.40	.60	.....	.80	1.20
8	.40	.60	.....	.80	1.20
6	.50	.70	.....	.80	1.20
4	.50	.70	.....	.80	1.20
2	.70	.90	.....	1.00	1.50
1	.70	.90	.....	1.00	1.50
1/0	.90	1.10	.....	1.20	1.80
2/0	1.10	1.30	.....	1.50	2.20
3/0	1.50	1.70	.....	1.80	2.70
4/0	1.50	1.70	.....	2.20	3.30
250MCM	1.90	2.10	.....	2.60	3.90
300MCM	1.90	2.10	.....	3.00	4.50
350MCM	2.40	2.80	.....	3.50	5.20
400MCM	2.40	2.80	.....	4.00	6.00
500MCM	2.90	3.30	\$ 4.30	5.20	7.80
600MCM	3.60	4.00	5.00	6.50	9.70
700MCM	5.00	5.00	5.80	7.50	11.20
750MCM	5.00	5.00	5.80	8.00	12.00
800MCM	5.00	5.00	5.80	8.50	12.70
1,000MCM	5.80	6.40	7.00	10.00	15.00
1,250MCM	8.20	8.20	8.40	12.00	18.00
1,500MCM	11.00	11.00	11.20	14.00	21.00
1,750MCM	12.80	12.80	13.00	16.00	24.00
2,000MCM	14.80	14.80	15.00	18.00	27.00

Frankel Solderless Connectors

Right Angle Taps



No. 2575 Hook Type



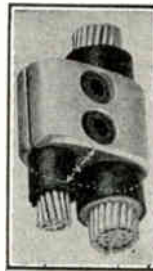
No. 2502 Bolted Type

Taps a main feeder cable at right angles. Specify type when ordering.

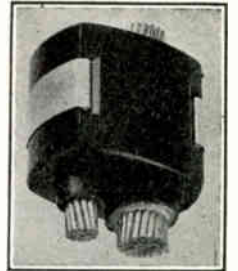
Size Main Cable	SIZE BRANCH CABLES					
	4 Each	2 Each	1/0 Each	4/0 Each	500MCM Each	1000MCM Each
4	\$ 1.40	.....	.....	.....	.....	.....
2	1.40	\$ 1.50	.....	.....	.....	.....
1/0	1.40	1.60	\$ 1.80	.....	.....	.....
2/0	1.40	1.60	1.80	.....	.....	.....
3/0	1.40	1.60	1.90	.....	.....	.....
4/0	1.60	1.60	1.90	\$ 2.40	.....	.....
300MCM	1.80	1.80	2.20	2.70	.....	.....
400MCM	2.30	2.30	2.80	3.30	.....	.....
500MCM	3.00	3.00	3.40	3.90	\$ 5.20	.....
700MCM	3.80	3.80	4.40	4.90	6.40	.....
1,000MCM	6.00	6.00	6.00	6.50	8.40	\$ 13.20
2,000MCM	18.40	18.40	18.40	18.40	19.50	21.80

Made in other sizes and combination of sizes.

Parallel Guttertaps



No. 2601 Guttertap



No. 2603 Insulating Cover

The No. 2601 Guttertap is a simple compact tap built for crowding and is easy to tape. Each connector fits several sizes of cable.

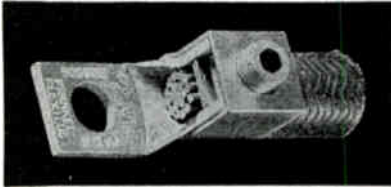
The No. 2603 Bakelite cover is small and snaps in place, to eliminate taping a guttertap.

Size Main Cable	Branch Cable Connectors Only				Covers For Any Branch Size Each
	4 or 6 Each	1 or 2 Each	1-0 or 2-0 Each	3-0 or 4-0 Each	
4 or 6	\$ 1.00	.....	.....	.....	\$ 1.00
1 or 2	1.00	\$ 1.40	.....	.....	1.00
1/0 or 2/0	1.40	1.40	\$ 1.40	.....	1.20
3/0 or 4/0	1.40	1.40	1.60	\$ 1.60	1.60
250-300MCM	1.70	1.70	1.80	2.10	1.60
350-400MCM	2.20	2.20	2.20	2.40	2.00
500MCM	3.00	3.00	3.00	3.30	\$ 4.20
600MCM	3.70	3.70	3.70	3.70	4.80
750-800MCM	4.00	4.00	4.00	4.30	5.60
1000MCM	5.20	5.20	5.20	5.20	6.30

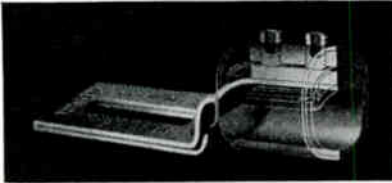
Made in other sizes and combination of sizes up to 2000MCM.

Frankel Solderless Connectors

Flexilugs



No. 1/0 Size



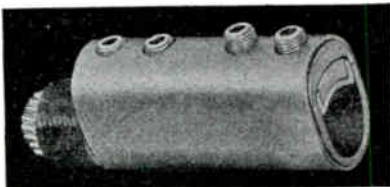
Sizes 250MCM to 1,000MCM

Each size lug fits many sizes of cable, and seven sizes fit any conductor from 14 solid to 1,000MCM cable, including flexible and extra flexible cables. The larger sizes are made to be bolted to the bus with either one or two bolts. All lugs are cadmium plated and constructed so that no parts can be removed. The current is carried through pure copper of 100% conductivity. Everdur is used where a part is subjected to heavy strains.

Note in the large size, contact is made all around the cable and carried through one continuous piece of copper to the bus bar.

Flexilug Size	WILL FIT CABLE SIZE		Per 100
	Minimum	Maximum	
4	14	4	\$11.50
1/0	6	1/0	35.00
4/0	1/0	4/0	60.00
350	250MCM	350MCM	130.00
500	400MCM	500MCM	160.00
700	550MCM	700MCM	225.00
1,000	750MCM	1,000MCM	300.00

Flexisplice



Based on the same principle as the Flexilug, the Flexisplice has the same contact and continuity of current carrying parts. Seven sizes take all cables from No. 14 solid to 1,000MCM cable, including flexible and extra flexible cables. These splices may be used for reducers within the range for which they are made. They represent a smooth surface and can easily be taped to nearly the size of the cable.

Flexilug Size	WILL FIT CABLE SIZE		Per 100
	Minimum	Maximum	
4	14	4	\$30.00
1/0	6	1/0	60.00
4/0	1/0	4/0	100.00
350	250MCM	350MCM	220.00
500	400MCM	500MCM	300.00
700	550MCM	700MCM	400.00
1,000	750MCM	1,000MCM	500.00

Frankel Heavy Duty Bolted Connectors

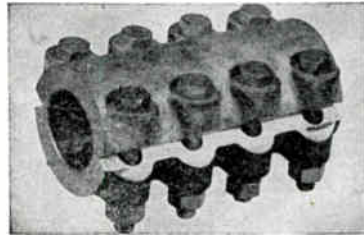
For use on standard iron pipe size, copper tubing, cable and solid rod for substations, outdoor installations, plating plants, transformer vaults, etc. The construction is extra heavy, the body being made of bronze of high copper content. Clamping is done by means of heavy Everdur bolts, nuts and lockwashers.

No. 2775 Heavy Duty Bolted T Taps



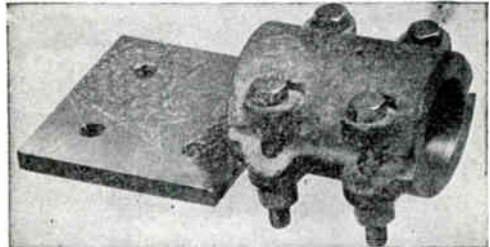
Made for any combination of any size cable, I.P.S. tubing or rod, with three bolts or six bolts as shown, depending on the size of the tap.

No. 2760 Heavy Duty Bolted Twoway Connectors



Made to connect two conductors of the same size, or any combination of any size cable, I.P.S. copper tube and rod. Made with four to eight bolts, depending on the size.

No. 2768 Heavy Duty Bolted Lugs



Made for any size of cable, standard iron pipe size, copper tube or rod, with round or rectangular plates, center formed, offset as shown, angle, or right angle.

Prices

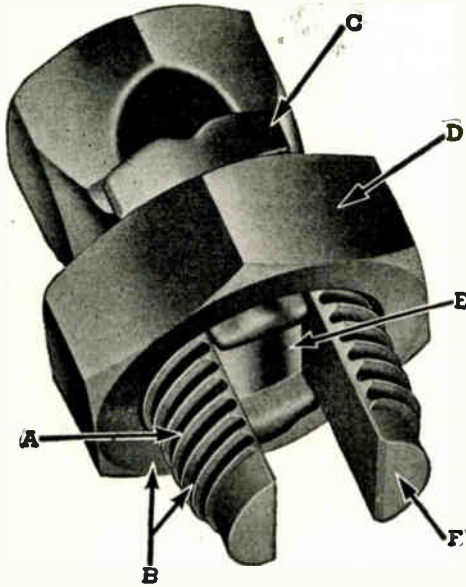
Conductor Side	Taps Each	Twoways Each	Lugs Each
1/2" I.P.S.	\$6.85	\$4.00	\$5.05
3/4" I.P.S.	7.90	8.65	6.35
1" I.P.S.	13.00	9.25	8.00
1 1/2" I.P.S.	16.65	18.30	12.20
2" I.P.S.	18.65	20.25	14.20
3" I.P.S.	35.00	38.50	24.65
4" I.P.S.	43.00	45.85	33.00
4/0	2.85	3.20	4.00
300 MCM	6.05	3.40	4.20
500 MCM	6.85	4.00	5.05
1000 MCM	12.75	9.25	7.70
2000 MCM	15.00	16.50	11.30
1/2" O.D. Rod	2.85	3.20	4.00
3/4" O.D. Rod	6.15	6.85	4.25
1" O.D. Rod	7.90	8.65	6.35

Reliable Solderless Connectors

Reliable Connectors are available for use with all types of conductors. Tap connectors for copper, copperweld, aluminum and steel conductors and for guy strand are designed with precision threads to maintain high pressure solderless connections. Reliable Connectors are manufactured under a quality control inspection system supervised by a laboratory organization, which is equipped with the best testing facilities.

Reliable Connectors are economical to use, convenient to install, made of sound proved alloy and provide much more strength than actually required.

Made of 90% copper high strength bronze and brass. The bronze connectors resist corrosion and are not subject to season cracking.



A—Precision threads, high percentage of thread engagement, uniformly machined.

B—Bolt and nut have large margin of strength over actual field requirements. Equally efficient on first use and repeated reuse.

C—Made with two-point pressure contactors and solid pressure bars which act as spacers between legs of bolt.

D—Nuts are inspected 100% to insure against flaws.

E—Tolerances between bolt slot and spacer are held to close limits to maintain a high percentage of thread engagement and prevent more than the slightest collapse of the legs of the bolt.

F—Pilot makes it easy to start nut.

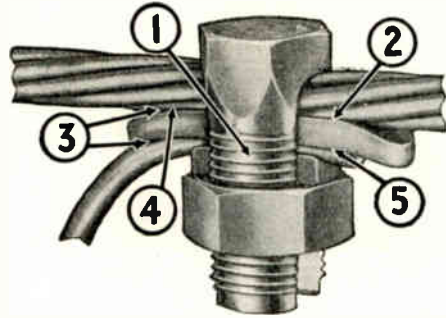
For Copper or Copperweld Wires

Bronze 2 Point Contact No.	Bronze Solid Pressure Bar No.	Brass Solid Pressure Bar No.	WIRE SIZE		
			B&S Gage	Strand	Copperweld
128SC	128V	128B	8		
165SC	165V	165B	6	8	8A 3 No. 12
206SC	206V	206B	4	5	6A 3 No. 10
260SC	260V	260B	2	3	4A 3 No. 8
292SC	292V	292B	1	2	3A 3 No. 7
373SC	373V	373B	2/0	1/0	2A 3 No. 6
418C	418V	418B	3/0	2/0	.....
528C	528V	528B	4/0	4/0	.....
679C	.....	.....	350MCM	.....	.....
813C	.....	.....	500MCM	.....	.....

Supplied with nut retainer when specified.

Prices upon application.

**Reliable Solderless Connectors
Aluminum to Copper or Steel to Copper**



The Reliable aluminum to copper connector clamps large areas of the relatively soft aluminum conductor in order to exert sufficient pressure on the copper tap to maintain a low resistance joint and to avoid deforming the aluminum line wire.

The wide separation of the aluminum line from the copper makes it extremely unlikely that galvanic corrosion will attack the line wire and impossible for a drop of moisture to bridge the space and form a battery between wires.

1. Precision threads transmit high pressure connection.
2. Pressure is distributed over large area of aluminum and concentrated on a small area of copper to maintain a low resistance connection and avoid deforming the wire.
3. A curved separator provides adequate space between the red and white wires.
4. The parts contacting or close to the aluminum wire are made of aluminum.
5. Bi-metallic aluminum-copper parts with heavy aluminum sections minimize corrosion in the connector.

No.	MAXIMUM WIRE SIZE		Copper
	Aluminum	Steel	
6ALC	6ACSR	6BWG	No. 6 B&S
4ALC	4ACSR	4BWG	2 No. 6 B&S
2ALC	2ACSR	.....	2 No. 4 B&S
1ALC	1ACSR	.....	2 No. 3 B&S
10ALC	1/0 ACSR	.....	2 No. 2 B&S

Prices upon application.

Aluminum to Aluminum



Aluminum throughout. A heavy forged pressure bar grips tightly without deforming the aluminum conductors.

Without Bell-Mouthed Washers No.	With Bell-Mouthed Washers No.	MAXIMUM WIRE SIZE		Steel
		Aluminum	Steel	
6AL	6ALW	6 ACSR	6 BWG	3/8 In.
4AL	4ALW	4 ACSR	4 BWG	1/4 In.
2AL	2ALW	2 ACSR	.....	.....
1AL	1ALW	1 ACSR	.....	.....
10AL	10ALW	1/0 ACSR	.....	.....

Prices upon application.

Aluminum to Steel



Equipped with straight separator which easily accommodates a stiff steel tap wire and also distributes pressure over the aluminum surface to maintain a tight joint and avoid damage to the aluminum conductor. Made of aluminum throughout.

No.	WIRE RANGE	
	Aluminum	Steel
6ALS	6 ACSR	6 BWG
4ALS	4 ACSR	1/4 In. or 2 No. 8 BWG
2ALS	2 ACSR	2 No. 6 BWG
1ALS	1 ACSR	2 No. 4 BWG
10ALS	1/0 ACSR	2 No. 4 BWG

Prices upon application.

No. 266 Reliable Multitap Connectors



The line side accommodates No. 2 main secondary conductor; the other side takes six No. 6 service wires.

Packed 100 in standard package.

Shipping weight standard package, 18 pounds.

Prices upon application.

Reliable Service Entrance Connectors

Service entrance connectors may also be used on transformer leads, lightning arrester grounds, wherever two wires, not under tension, are connected end to end.



No.	Wire Size B&S Wire Gage
68SE	6, 8 or 10
46SE	4, 6 or 8

Prices upon application.



No.	Wire Size B&S Wire Gage
68A	6, 8 or 10
46A	4, 6 or 8

Prices upon application.

Reliable Telephone Bridging Connectors

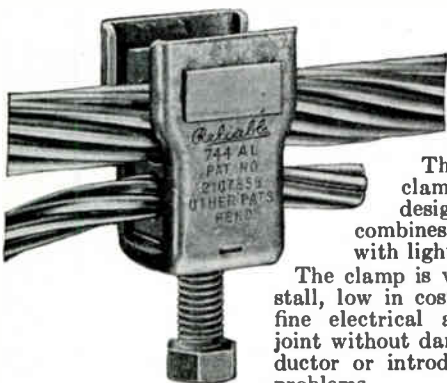


No.	Material	Connection	Wire Size
104N	Bronze	Copper to Copper..	9 B&S
109	Bronze	Iron to Iron Plated.	12 BWG
109W	Bronze	Iron to Copper Plated.....	12 BWG
104	Brass	Copper to Copper..	9 B&S
*104W	Brass	Copper to Copper..	9 B&S

*With washer.

Prices upon application.

Reliable Flip-On Tap Clamps



The Flip-On tap clamp presents a new design principle that combines high strength with light weight.

The clamp is very easy to install, low in cost, and makes a fine electrical and mechanical joint without damaging the conductor or introducing corrosion problems.

For A.C.S.R. over armor rods to aluminum, steel or copper. For grounding aluminum, copper, copperweld or steel neutrals to guy wire.

Aluminum parts of clamp contact aluminum or steel wire. Copper and aluminum are well separated. Copper surfaces contact copper wire.

The reinforced body and screw are hot galvanized steel.

Type AL for aluminum to aluminum or aluminum to guy wire. Type ALC for aluminum to copper.

No.	Line Side				Tap Side			
	GAGE A.C.S.R. Armor Max.	Over Rods Min.	GAGE A.C.S.R. Max.	Min.	GUY WIRE OR RURAL STEEL CONDUCTOR Max.	Min.	B&S GAGE COPPER Max.	Min.
744AL	1/0	4	1/0	4	3/8 In.	8 BWG	...	...
744ALC	1/0	4	...	...	...	...	1/0	8
555AL	4	8	4	8	1/4 In.	1/8 In.	...	...
555ALC	4	8	...	...	...	...	4	12

Galvanized Strand

438ALC	1/2 In.	1/4 In.	...	...	Any Rural	1	10
310G	1/2 In.	1/4 In.	...	...	Steel Conductor	...	...

Ideal Universal Wire Connectors

Solderless—Tapeless



Ideal Connectors replace solder and tape, plug connections, terminal blocks, binding posts, etc.

Approved by Underwriters' and Factory Mutual Laboratories. Recommended by National Electrical Code.

Making a joint with an Ideal Connector is just like screwing a nut on a bolt. The connector simply screws on giving a positive and permanent contact. Spiral metal insert (copper coated), which acts as a current carrying sleeve, presses threads into the wires and binds them together in a vise-like grip—assuring a doubly secure joint.

No. 72 Fixture-Appliance Type

For fixture wiring, joints in appliances, etc.

No.	Description	Per 100	Per 1000
72	For 2 No. 16 or 2 or 3 No. 18 Wires, Solid or Stranded.....	\$2.25	18.75

No. 73 Junior Universal Type

For fixture wiring, joints in shallow canopies, signs, etc.

73	For Nos. 14, 16, and 18 up to 2 No. 14 and 2 No. 18 or 4 No. 16 or 5 No. 18 Wires, Solid or Stranded.....	\$2.88	24.00
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No. 74 Standard Universal Type

For all joints of common wiring practice.

74	For Nos. 12, 14, 16 and 18 up to 2 No. 12 and 1 No. 18 or 4 No. 14 and 1 No. 18 Solid or Stranded.....	\$4.05	33.75
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No. 76 Large Universal Type

For larger gage wires or where a large number of small wires are to be joined.

76	For Nos. 10, 12, 14, 16 and 18 up to 3 No. 10 and 1 No. 18, 6 No. 14 and 1 No. 18, or 4 No. 12 and 1 No. 18 Solid or Stranded.	\$4.59	38.25
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Bryant Solderless Wire Connectors



No. 767



No. 768



No. 769
Showing Coil Spring
Insert

Moulded composition with spiral coiled wire insert.

No. 767 small size, for connecting up to 3 No. 18 wires. No. 768A intermediate size, for connecting 2 No. 14 and 2 No. 18 wires, 4 No. 16 or 5 No. 18 wires. No. 768 standard size, for connecting 2 No. 12 and 1 No. 18 wires, 4 No. 14 and 1 No. 18 wires, 5 No. 16 wires. No. 769 large size, for connecting 3 No. 10 and 4 No. 12 wires or 6 No. 14 wires.

Carton, 100. Standard package. 1000.

Cat. No.	767	768A	768	769
Per 100	\$2.50	3.20	4.50	5.10
Wt. Pkg.	5	7 1/4	16	32

Bryant Bakelite Flat Cord Connectors

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

These devices do not have standard prong spacings.

Have 3/32-inch cord hole.



No. 2956



No. 2958

No. 2956 Receptacle Portion

For use with No. 2958 only.

Cat. No.	Per 100	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2956	\$30.00	10	100	4

No. 2958 Plug Portion

For use with No. 2956 only.

2958	\$30.00	10	100	5
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Sherman Set Screw Connectors

Number Plainly Stamped on Each Connector. A great help in re-ordering and saves much time and possible mistakes in sorting small mixed stocks.

Screws Heavily Galvanized, Hence Rust-proof. This prevents rusting in dealer's stock, and enables consumer to use connectors over again when removed from temporary work.

Neatly Boxed and Plainly Labeled. Insuring neat shelf stock.

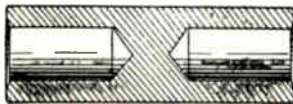
These connectors are made from solid brass rod; all dimensions and proportions are carefully held to accurate size.

Four-screw connectors are made also with hole clear through, and two-screw connectors can be furnished in divided wall style.

**For Stranded Cable
With Divided Wall**



No. 74 Connector



Showing Interior Construction

Cat. No.	Size Stranded Cable	Screws	Diam. Hole In.	Outside Diam. In.	Length In.	Std. Pkg.	Wt., Lbs. Std. Pkg.
60	12, 14	2	.110	1/4	1 1/4	200	4
61	10	2	.140	5/16	1 1/4	200	5 1/2
62	10	4	.140	5/16	1 1/2	200	7
63	8	2	.160	5/16	1 1/4	200	5 1/2
64	8	4	.160	5/16	1 1/2	200	6 1/2
65	6, 7	2	.209	3/8	1 1/4	150	5 1/2
66	6, 7	4	.209	3/8	1 1/2	150	7
67	4, 5	2	.265	7/16	1 1/2	100	6
68	4, 5	4	.265	7/16	1 7/8	100	7
69	2, 3	2	.312	1/2	1 1/2	100	6 1/2
70	2, 3	4	.312	1/2	1 7/8	100	9
71	0, 1	4	.390	9/16	2 1/4	50	5 1/2
72	00	4	.437	5/8	2 1/2	50	7 1/2
73	000	4	.500	3/4	2 7/8	25	6 1/2
74	0000	4	.562	7/8	2 7/8	25	9 1/4

**For Solid and Stranded Cable
Wire Holes Extending Clear Through**



No. 5 Connector



Showing Construction

Cat. No.	Max. Solid	Wire Str.	Screws	Diam. Hole In.	Outside Diam. In.	Length In.	Std. Pkg.	Wt., Lbs. Std. Pkg.
0	12	...	2	.106	5/16	1 1/4	100	3 3/4
1	8	9	2	.147	5/16	1 1/2	100	3 1/2
2	6	7	2	.185	3/8	1 3/4	100	5
3	4	5	2	.228	7/16	1 7/8	100	7
4	2	3	2	.277	1/2	1 7/8	100	8 1/2
5	0	1	2	.311	9/16	1 7/8	50	5
6	00	0	2	.348	5/8	1 7/8	50	6
7	4	5	4	.228	7/16	1 7/8	100	7 1/2
8	2	3	4	.277	1/2	1 7/8	100	9
9	0	1	4	.311	9/16	1 7/8	50	5 1/2
10	00	0	4	.348	5/8	1 7/8	50	6 3/4
11	000	00	4	.390	11/16	2	50	7 1/2
12	0000	000	4	.437	3/4	2	50	8 1/2
13	....	0000	4	.484	7/8	2 1/8	25	6 3/4

Sherman Soldering Lugs



U. S. Pat. Reissue 14401

Lugs are seamless all around. The solder cannot leak out at the closed end, and better conductivity is secured. Round end lugs in small sizes are recommended.

These soldering lugs, or drawn copper terminals, are approved and listed by the Underwriters' Laboratories.

Round End

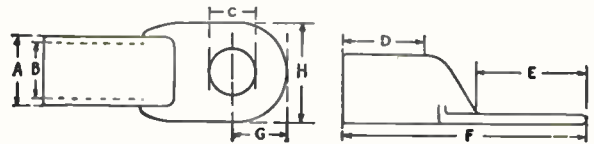
Size Inches	Amp. Cap. Rubber Insl. Conductors N. E. C. Std.	Maximum Stranded Cable A. W. G.	Approx. Weight Pounds per 1000
3/16	25	10	4
1/4	35	8	6
5/16	50	6	11
3/8	70	4	17
7/16	90	2	24
1/2	125	0	35
9/16	150	00	46
5/8	175	000	60
11/16	225	0000	80
13/16	250	250000 C. M.	120

Square ends furnished in above sizes, if required. Bottom not seamless. Over all dimensions the same.

Square End

Size Inches	Amp. Cap. Rubber Insl. Conductors N. E. C. Std.	Maximum Stranded Cable C. M.	Approx. Weight Pounds per 1000
15/16	325	400000	225
1	362	450000	285
1 1/16	400	500000	380
1 1/8	450	600000	420
1 3/16	550	800000	705
1 7/16	650	1000000	788
1 3/4	850	1500000	1470
2 1/16	1050	2000000	2765

Approximate Dimensions, Inches



Round End							
A	B	C	D	E	F	G	H
3/16	.1368	11/64	3/8	15/32	15/16	7/32	17/64
1/4	.186	13/64	3/8	1/2	1 1/2	7/32	3/8
5/16	.232	15/64	3/8	19/32	1 1/2	1 1/4	7/16
3/8	.285	9/32	7/16	11/16	1 11/32	9/32	17/32
7/16	.336	1/2	1/2	3/4	1 1/2	11/32	5/8
1/2	.398	11/32	5/8	13/16	1 3/4	1 1/2	3/4
9/16	.461	13/32	11/16	15/16	2	7/16	13/16
5/8	.511	13/32	25/32	1	2 1/8	1/2	23/32
11/16	.559	13/32	27/32	1 5/32	2 3/32	17/32	31/32
13/16	.651	13/32	31/32	1 1/4	2 5/8	5/8	13/16

Square End							
A	B	C	D	E	F	G	H
15/16	.776	13/32	13/16	15/8	3 3/8	3/4	1 13/16
1	.82	13/32	1 1/4	1 3/4	3 1/16	13/16	1 1/2
1 1/16	.88	13/32	1 1/2	2 1/8	4 1/16	15/16	1 9/16
1 1/8	.943	13/32	1 5/8	2 1/4	4 7/16	1	1 11/16
1 3/16	1.084	17/32	2	2 1/2	5	1 1/8	1 15/16
1 7/16	1.21	29/32	2	2 1/2	5 3/8	1 1/2	2 1/8
1 3/4	1.46	1 1/32	2 3/8	3 3/8	6 5/8	1 1/2	2 5/8
2 1/16	1.66	1 1/32	2 5/8	3 5/8	7 1/2	1 5/8	3 1/16

STUD HOLE.—Lugs furnished with special size or location of stud holes at same prices as for regular lugs, with extra charge for each size.

TINNING.—Lugs tinned inside of tubular portion will be furnished at extra charge, depending on size.

MARKING.—For identification, as approved fittings, lugs will be marked with letter S and Underwriters' rating in amperes, placed crosswise of the flat portion at wire end.

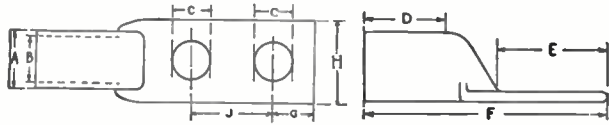
To Select Terminals According to the N.E.C. Ratings Governing Knife Switches, Use the Following Equivalents
Capacity...amperes 30 60 100 200 400 600 800 1000
Size Lug...inches 1/4 3/8 1/2 11/16 13/16 1 1/4 1 3/4 2 1/16

Sherman Soldering Lugs 2-Hole



Two-hole lugs are made from seamless tubing and furnished square end, unless otherwise specified.

Flat portion (E) may be made to order either longer or shorter but tubular portion (D) cannot be changed.



Size Inches	Amp. Cap. Rubber Insl. Conductors N.E.C.Std.	APPROX. DIMEN., IN.						Approx. Weight Pounds per 1000
		C	E	F	G	J		
3/16	25	5/32	3/4	17/32	5/32	3/8	5	
1/4	35	3/16	7/8	11 1/32	3/16	7/16	8	
5/16	50	7/32	1 1/16	1 3/4	1/4	1/2	14	
3/8	70	1/4	1 1/4	1 29/32	5/16	5/8	23	
7/16	90	3/8	1 3/8	2 1/8	3/16	1 1/16	34	
1/2	125	11/32	1 11/16	2 5/8	3/8	7/8	46	
9/16	150	13/32	2	3 1/16	7/16	1	68	
5/8	175	13/32	2	3 1/8	7/16	1	90	
11/16	225	13/32	2 1/8	3 1/4	1 1/2	1	115	
13/16	250	17/32	2 3/8	4	5/8	1 1/4	218	
15/16	325	17/32	2 3/4	4 1/2	1 1/16	1 1/4	270	
1 1/16	400	21/32	3 1/4	5 3/16	1 3/16	1 1/2	420	
1 1/8	450	21/32	3 3/8	5 9/16	1 1/8	1 1/2	475	
1 1/4	550	25/32	3 15/16	6 1/16	1	1 3/16	845	
1 3/8	650	29/32	4 3/8	7 1/4	1 1/8	2	1030	
1 3/4	850	1 1/32	5 1/8	8 5/8	1 3/8	2 1/4	1850	
2 1/16	1050	1 1/32	5 3/8	9 1/4	1 1/2	2 1/4	3200	

Dimensions, except as noted, are the same as standard side formed lugs.

Sherman Heavy Duty Soldering Lugs

N.E.L.A. Standard



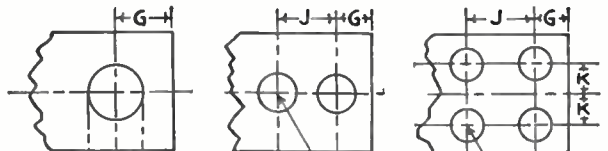
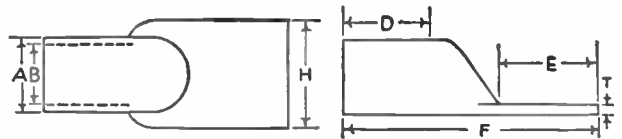
2-Bolt Tongue

These lugs are made of best quality seamless copper tubing.

Lugs Nos. 8, 8-A, 9-A, 10 and 11 have a sufficient socket diameter to take rope core

cables of sizes listed without removing core. Core can be drilled out and space filled with copper plug or solder.

Blank lugs furnished when specified; otherwise regular bolt holes as listed. Special drilling may be had if specified. Straight lugs regularly furnished. Angle lugs 45 and 90-degree when specified at extra price. Plain finish unless otherwise specified. Special finishes as follows at added prices: Rosin dipped, cadmium plated, tinned inside only and tinned all over. Special dimensions may be made to order with dimension E other than regular or special drilling of stud holes, at added cost.



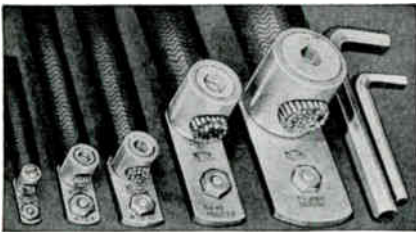
SINGLE BOLT

TWO BOLT

FOUR BOLT

Bull Dog Wire Grips

Solderless Lugs



Cold formed from pure electrolytic copper to provide maximum conductivity and greater mechanical strength. Clear wire holes enable user to see that full and proper contact is made.

Max. Wire Sizes	Amp. Rating	Basic Qty.	Wt. Lb.	Front Conn. No.	Back Conn. No.	Per 1000
4.....	70	250	6	3021	3021BC	\$49.10
1.....	100	100	8	3031	3031BC	76.60
4/0.....	225	50	7	3041	3041BC	275.60
500M Cm.....	400	10	8	3052	3052BC	938.70
1,000,000 Cm.....	650	5	8	3062	3062BC	1764.00

*Twin Wire Grips

Two 4.....	70	100	5	3221	.....	\$110.50
Two 1.....	100	50	8	3231	.....	172.35

*Two solderless lugs mounted on a common base, with a tongue designed to fit the cable hole of a standard wire grip of similar capacity. Helpful in making multiple connections.

Socket Wrenches

Nos. 3021 and 3221 require a screwdriver only. Nos. 3031, 3041 and 3231 are primarily designed for tightening with a socket wrench. Nos. 3052 and 3062 require a socket wrench. No. 303SW, for Nos. 3031, 3041 and 3231.....each \$1.10
No. 306SW, for Nos. 3052 and 3062.....each .15

Max. Size Conductor Inches	Amp. Rate N.E.C.	Single Bolt		2-Bolt		4-Bolt	
		Lug No.	Wt., Lbs. per 1000	Lug No.	Wt., Lbs. per 1000	Lug No.	Wt., Lbs. per 1000
19/22	35	1	8	1A	12	.....	.....
6, B. & S.	50	2	18	2A	25	.....	.....
2	90	3	80	3A	105	.....	.....
00	150	4	155	4A	210	.....	.....
250000	250	5	275	5A	330	.....	.....
350000	300	6	540	6A	650	.....	.....
500000	400	.....	.....	7	1350	.....	.....
750000	525	.....	.....	8	2000	8A	2000
1000000	650	.....	.....	9	3200	9A	2800
1500000	850	.....	.....	.....	.....	10	5000
2000000	1050	.....	.....	.....	.....	11	8300

Single Bolt Tongue

Lug No.	APPROXIMATE DIMENSIONS, INCHES										
	A	B	H	D	T	E	F	G	J	K	C
1	.25	.187	.39	.375	.06	.50	1	3/16	.....	.....	7/32
2	.313	.232	.47	.50	.08	.75	1 1/2	3/8	.....	.....	7/32
3	.540	.375	.74	.75	.17	.87	2	3/8	.....	.....	9/32
4	.675	.494	.97	1.00	.19	1.25	2 3/4	1/2	.....	.....	13/32
5	.840	.625	1.22	1.25	.22	1.50	3 1/4	3/4	.....	.....	17/32
6	1.050	.822	1.50	1.69	.23	2.25	4 3/4	1	.....	.....	17/32

Two-Bolt Tongue

1-A	.25	.187	.39	.375	.06	1.00	1 1/2	3/16	1/2	.....	7/32
2-A	.313	.232	.47	.50	.08	1.25	2	3/8	3/4	.....	7/32
3-A	.540	.375	.74	.75	.17	1.50	2 5/8	3/8	5/8	.....	9/32
4-A	.675	.494	.97	1.00	.19	2.25	3 3/4	1/2	1	.....	13/32
5-A	.840	.625	1.22	1.25	.22	2.25	4	1/2	1	.....	13/32
6-A	1.050	.822	1.50	1.69	.23	3.25	5 3/4	3/4	1 1/2	.....	17/32
7	1.315	.951	1.87	2.00	.37	3.25	6 1/4	3/4	1 1/2	.....	17/32
8	1.66	1.272	2.41	2.56	.39	3.25	6 7/8	3/4	1 1/2	.....	17/32
9	1.90	1.49	2.74	3.00	.41	4.25	8 7/8	1	2	.....	17/32

Four-Bolt Tongue

8-A	1.66	1.272	2.41	2.56	.39	3.25	6 7/8	3/4	1 1/4	5/8	13/32
9-A	1.90	1.49	2.74	3.00	.41	3.25	7 7/8	3/4	1 1/2	3/4	13/32
10	2.37	1.93	3.50	3.87	.44	4.25	10	1	2	1	17/32
11	2.87	2.315	4.25	4.37	.56	4.25	11	1	2	1	17/32

NOTE.—Dimensions E in larger sizes will be found slightly larger than specified to allow for bending in the field.

Type SM Sherman Solderless Lugs

Listed by Underwriters' Laboratories, Inc.



No. SM-6

Adaptable for use with solder. Made of pure copper.

The thick metal in the barrel and large screw give this lug the ability to withstand excessive tightening efforts and enable it to carry current far in excess of the normal rating without excessive heating.

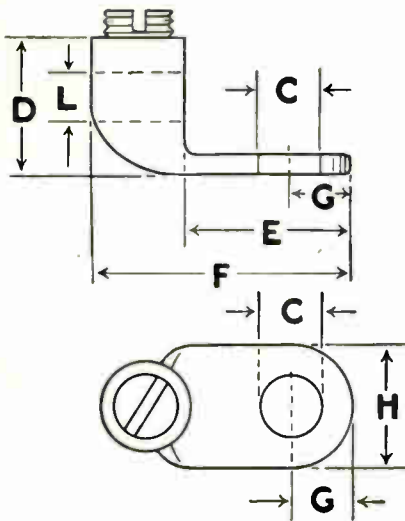
To select terminals according to N. E. C. rating governing knife switches, use the following equivalents: 30-50 amperes, use No. SM-6; 60 amperes, No. SM-4; 100 amperes, No. SM-1/0; 200 amperes, No. SM-4/0; and 400 amperes, No. SM-500.

Nos. SM-6 to SM-2 inclusive have screws with screwdriver slots. Nos. SM-1/0 and larger have countersunk hexagon hole for use with standard hexagon set screw wrench.

One wrench packed with each full carton.

No.	Per 100	Maximum Capacity Amperes N.E.C.	MAXIMUM A.W.G. Solid	Stranded	No. in Carton	Weight Pounds per 1000
SM-6	\$9.70	50	...	6	100	18
SM-4	11.40	70	...	4	100	30
SM-2	16.00	90	...	2	100	39
SM-1/0	18.80	125	00	0	50	52
SM-4/0	55.50	225	000	0000	25	117
SM-500	171.00	400	...	5000CM	10	533

Dimensions



No.	APPROXIMATE DIMENSIONS, INCHES					
	D	E	F	H	L	C
SM-6	5/8	5/8	1	15/32	.203	13/64
SM-4	5/8	3/4	1 1/8	17/32	.250	9/32
SM-2	3/4	13/16	1 9/32	1 1/16	.313	9/32
SM-1/0	7/8	1	1 17/32	3/4	.390	1 1/32
SM-4/0	1 1/8	1 1/4	2 3/16	1 5/16	.562	1 3/32
SM-500	1 11/16	2 1/8	3 3/16	1 23/32	.875	1 1/2

Lugs furnished with special size or location of stud holes, slight additional charge.

Special length lugs will be billed at a price increase, in proportion to the increased overall length, plus an additional charge for each size.

For annealing, to permit bending, add 10%.

For cadmium plating, rosin dipping, tinning all over or grinding bottom of flat portion, add 10% to regular prices plus an extra charge for each size.

Orders for special material will be manufactured with an allowable variation of 10% over or under the quantity specified.

Sherman Wedge-Grip Connectors



No. SC-6X

For service entrance connections and all small wire connections.

The ovalpoint, hexagon head, non-removable bronze screw wedges wires between V-shaped corrugations.



No. SC-4X

Pure copper body is hard drawn with highest conductivity; needs no taping.

No.	Per 100	B.&S. WIRE GAGE		No. in Carton	Weight Pounds per 1000
		Strand Max.	Solid Min.		
SC-12X	\$11.45	*2-12	2-20	200	10
SC-6X	13.00	2-6	2-12	100	25
SC-6X549	13.00	2-6	2-10	100	25
SC-4X	16.90	2-4	2-8	100	38
SC-2X	22.20	2-2	2-4	50	47

*Solid.

Mueller Alligator Test Clips



No. 60-S



No. 60-HS

For use in making quick, temporary electrical connections.

Has slim jaws, fine meshing teeth, round thumb grip, and barrel connection for banana plug. Bright finish.

No.	Each	Description	Length Inches
60	\$.05	Steel, with Soldering Lip	2
60-S	.06	Steel, with Screw Connection	2
*60-CS	.10	Copper, for R. F. Work, Screw Conn.	2
60-HS	.10	Steel, with Red and Black Insulating Sleeves on End, Screw Connection	2 1/4
60-CHS	.17	Copper, Otherwise Same as No. 60-HS.	2 1/4

*Will not heat up in high frequency circuits.

Reliable Testing Clips

For temporary connections to insulated wires. Made of heavy nickel silver with hard sharp insulation puncturing points and perfectly registering teeth.

No. 1

Fitted with screw, nut and washer for attaching to instrument cord.

No. 1.....each



No. 2

Same as No. 1 but with screw, nut and washer omitted. Preferred where connection to cord is to be soldered.

No. 2.....each

No. 3

Same as No. 1 but without the spike.

No. 3.....each

No. 5

A light, sturdy clip with a strong spring. Convenient for temporary connections in radio, telephone and signal work.

Particularly good for congested telephone equipment.

Plenty of room for soldering flat cord terminals.

No. 5.....each



Mueller Universal Test Clips and Insulators



No. 24-A Clip Only



No. 45 Clip with No. 47 Insulator

Test clips save time in electrical work requiring quick temporary connections. May be used over and over again.

Rubber insulators are a convenient protection against electric shock and prevent clips from shorting on each other. Furnished half red and half black to indicate polarity.

Packed 10 to a box and 10 boxes to a carton.

Screw Connection

No.	Each	Description	Spread of Jaws In.	Wt. per 100 Lb.
45	\$.05	Pee Wee Clip Only, Cadmium.....	3/8	1
45-C	.08	5-Amp. Pee Wee Clip Only, Solid Copper	3/8	2
47	.09	Rubber Insulator for No. 45 or 45-C Clip	1/2	2
48-B	.05	Clip Only, Cadmium Plated.....	1/2	2
48-C	.10	10-Amp. Clip Only, Solid Copper.....	1/2	2
82	.10	10-Amp. Needle Clip Only, Cadmium...	1/2	2
49	.10	Rubber Insulator for No. 48-B, 48-C or 82 Clip...	5/8	4
27	.12	Clip Only, Cadmium Plated.....	5/8	4
27-C	.17	40-Amp. Clip Only, Solid Copper.....	5/8	4
29	.12	Rubber Insulator for No. 27 or 27-C Clip	1	5
24-A	.10	25-Amp. Clip Only, Lead Plated.....	1	7
24	.20	50-Amp. Clip Only, Solid Copper.....	1	7
26	.22	Rubber Insulator for No. 24 or 24-A Clip	1 1/4	10
21-A	.16	50-Amp. Clip Only, Lead Plated.....	1 1/4	15
85	.06	Crocodile Clip Only, Cadmium-Plated.	1/2	2
87	.05	Rubber Insulator for No. 85 Clip.....	1	1

Lug Connection

21	\$.50	100-Amp. Clip Only, Solid Copper.....	1 1/4	18
23	.37	Rubber Insulator for No. 21 or 21-A Clip	1 1/4	16
11-A	.60	100-Amp. Clip Only, Lead Plated.....	1 3/4	41
11	1.00	200-Amp. Clip Only, Solid Copper.....	1 3/4	45
13	.60	Rubber Insulator for No. 11 or 11-A Clip	2	28
33	1.80	300-Amp. Clip Only, Solid Copper.....	2	86
35	.80	Rubber Insulator for No. 33 Clip.....	4 1/2	47

Mueller Crocodile Clips and Rubber Insulators



No. 85 Clip with No. 87 Insulator

No. 85 Clips

Cadmium plated, 5-ampere clip for radio and electrical test work. Long thin nose on clip enables user to make tests in

deep recesses. Teeth mesh along entire length of jaw. May be completely insulated. Jaw spread, 1/2 inch.

Packed 10 in box; 100 in carton, weight, 2 pounds.

No. 85.....each \$.06

No. 85-T Tip Clips

Same as No. 85 except that it has a standard phone tip soldered to the front end of the lower jaw. Can be used as a combination test clip and test prod; also for making connections to binding posts having insulated, non-removable heads. Jaw spread, 1/2 inch.

Packed 10 in box; 100 in carton, weight, 1 pound.

No. 85-T.....each \$.13

No. 87 Insulators

For use with both of the above clips.

Half red and half black.

Packed 10 in box; 100 in carton, weight, 1 pound.

No. 87.....each \$.05

No. 8893 Mueller Wee-Pee-Wee Insulated Clips



Very tiny clip used in fine electrical and telephone test work. Made entirely of phosphor bronze. Equipped with tight fitting glove-like rubber insulator. Extremely small and flat jaws with 1/4-inch spread.

Packed 10 in box; 100 in carton, weight, 1 pound.

No. 8893.....each \$.14

Fahnestock Binding Posts

No. 3

Will take No. 10 B. & S. Wire. Length over all, 1 1/8 inches. Width, 3/8 inch. Screw hole for No. 8 screw.

Price, No. 3, Brass.....each \$.05

Price, No. 3, Bronze.....each .06

Price, No. 3, Nickel Brass.....each .05

Price, No. 3, Nickel Bronze.....each .06



No. 5

Will take No. 10 B. & S. Wire. Has projecting lug to which can be soldered a wire. Length over all, not including soldering lug, 1 1/8 inches. Width, 3/8 inch. Screw hole for No. 8 screw.

Price, No. 5, Brass.....each \$.07

Price, No. 5, Bronze.....each .08

Price, No. 5, Nickel Brass.....each .07

Price, No. 5, Nickel Bronze.....each .08



No. 9

Will take No. 10 B. & S. Wire. Length over all, 2 1/8 inches. Width, 3/8 inch. Screw hole for No. 8 screw.

Price, No. 9, Brass.....each \$.08

Price, No. 9, Bronze.....each .10

Price, No. 9, Nickel Brass.....each .08

Price, No. 9, Nickel Bronze.....each .10



No. 24

Will take No. 10 B. & S. Wire. Length over all, 1 1/8 inches. Width, 3/8 inch. Made with either 1/4 or 3/16-inch screw hole.

Price, No. 24, Brass.....each \$.08

Price, No. 24, Bronze.....each .10

Price, No. 24, Nickel Brass.....each .08

Price, No. 24, Nickel Bronze.....each .10



Fahnestock Test Connectors

No. 30

Made of special copper bronze spring metal. Two large clips riveted together. Both snap over the line. Made for different size wire. Used for test poles or for party line work. Length over all, 1 1/8 inches. Width, 5/8 inch.

In ordering, state kind and size of wires to be connected.

Price, No. 30, Bronze.....each \$.15



No. 31

One large and one small clip riveted together. Large clip snaps over the line wire. The small clip does not snap over, and will take up to and including No. 10 B. & S. Used for attaching drop or jumper wires to line on junction poles or party lines. Length over all, 1 1/8 inches. Width, 5/8 inch.

In ordering, state kind and size of wires to be connected.

Price, No. 31, Bronze.....each \$.10

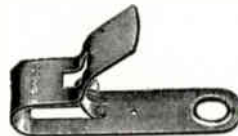


No. 33

Temporary connector for emergency work and test sets.

Will snap over a No. 8 B. W. G. Wire.

Price, No. 33, Bronze.....each \$.15



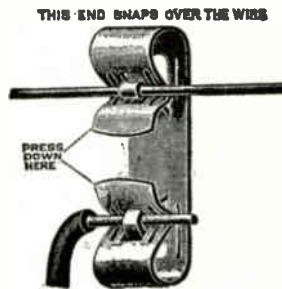
No. 34

One end snaps over the line. Made in only one size. Snaps over a No. 12 B. W. G. Wire.

Other end does not snap over wire but will take any size wire up to No. 9 B. W. G.

Length over all, 2 3/4 inches. Width, 5/8 inch.

Price, No. 34, Bronze.....each \$.10



Fahnestock Phosphor Bronze Clips

For Neon Signs

Listed by Underwriters' Laboratories



No. 3

Will take up to No. 10 B. & S. wire. Length overall, 1 inch. Width, $\frac{3}{8}$ inch.

Screw hole for No. 8 screw.

No. 3.....per 100 \$1.50



No. 10

Will take up to No. 14 B. & S. wire. Length overall, $\frac{3}{4}$ inch. Width, $\frac{5}{16}$ inch.

Screw hole for No. 6 screw.

No. 10.....per 100 \$1.25



No. 15

Will take up to No. 16 B. & S. wire. Has projecting lug to which a wire can be soldered.

Length overall, not including soldering lug, $\frac{1}{2}$ inch. Length of soldering lug, $\frac{1}{8}$ inch. Width, $\frac{7}{32}$ inch.

Screw hole for No. 4 screw.

No. 15.....per 100 \$1.00

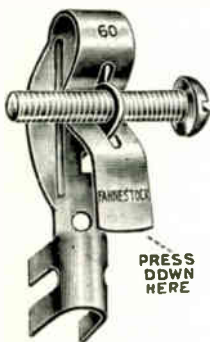


No. 59

Will take up to No. 14 B. & S. wire. Length overall, 1 inch. Width, $\frac{5}{16}$ inch.

Copper lug riveted to clip will take $\frac{1}{8}$ -inch cable or wire.

No. 59.....per 100 \$2.00



Nos. 60 and 61

No. 60 will take up to $\frac{3}{32}$ -inch screw terminal.

No. 61 made for $\frac{1}{4}$ -inch screw terminal.

Shank will take up to $\frac{5}{16}$ -inch cable.

Length overall, $1\frac{1}{2}$ inches. Width, $\frac{5}{16}$ inch.

No. 60.....per 100 \$2.50

No. 61.....per 100 2.75

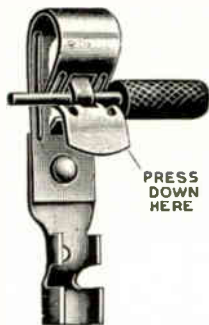


No. 48

Will take up to No. 10 B. & S. wire. Length overall, 2 inches. Width, $\frac{1}{2}$ inch.

Copper lug riveted to clip will take $\frac{3}{16}$ -inch cable.

No. 48.....per 100 \$3.00



No. 36

Will take up to No. 10 B. & S. wire. Length overall, $1\frac{1}{8}$ inches. Width, $\frac{3}{8}$ inch.

Copper lug riveted to clip will take $\frac{3}{16}$ -inch cable.

No. 36.....per 100 \$2.50



No. 58

Will snap over No. 10 B. & S. wire. Length overall, $1\frac{1}{8}$ inches. Width, $\frac{3}{8}$ inch.

Copper lug riveted to clip will take $\frac{3}{16}$ -inch cable.

Clip snaps over wire and has a thumb-piece, $\frac{1}{2}$ inch long, which makes it convenient to grip wire.

No. 58.....per 100 \$3.00



No. 70

Has 3-way grip which makes it impossible to become loose from either the electrode or housing.

Can be used on a porcelain housing; takes up to an $\frac{3}{32}$ screw.

No. 70.....per 100 \$2.50



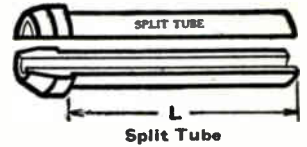
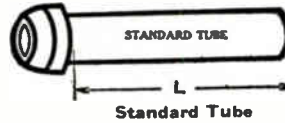
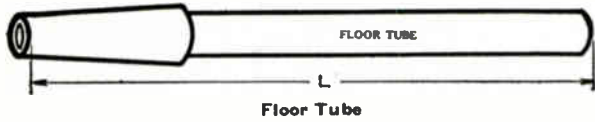
Pig Tail Assembly

Consists of braided copper wire $\frac{3}{32}$ -inch wide, cut to a length of $4\frac{1}{2}$ inches; to which is soldered one No. 15 clip at one end, and a copper terminal that will take up to a No. 8 screw at the other end.

Length overall of complete assembly, 6 inches.

Per 100..... \$2.50

Unglazed Tubes



Dimension L on illustrations represents the length of tubes as referred to in lists.

Size.....	inches	5/16	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4
Outside.....	inches	3/16	11/16	13/16	15/16	13/16	1 1/16	1 13/16	23/16	2 1/16
Inside.....	inches	5/16	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4

Packed in barrels.

Standard Unglazed Tube List Per 1000

Length Inches	INSIDE DIAMETER TUBE, INCHES									
	5/16	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	
1/2			\$26.00							
1			27.00	\$40.00	\$60.00	\$100.00				
1 1/2			28.00	46.00	70.00	112.00	\$150.00	\$210.00		
2			30.00	52.00	80.00	125.00	170.00	230.00	\$310.00	
2 1/2			33.00	58.00	90.00	138.00	190.00	255.00	340.00	
3			37.00	65.00	100.00	150.00	210.00	280.00		
4			48.00	80.00	116.00	168.00	240.00	320.00	445.00	
5			60.00	95.00	132.00	186.00	272.00	360.00	520.00	
6			72.00	110.00	148.00	204.00	306.00	405.00	600.00	
8	\$90.00	\$105.00	130.00	140.00	180.00	240.00	376.00	490.00	750.00	
10	167.00	186.00	215.00	250.00	290.00	375.00	450.00	580.00	900.00	
12	244.00	267.00	300.00	340.00	390.00	500.00	700.00	1025.00	1600.00	
14	321.00	348.00	385.00	430.00	492.00	625.00	870.00	1235.00	1900.00	
16	398.00	429.00	470.00	520.00	594.00	750.00	1040.00	1445.00	2200.00	
18	475.00	510.00	555.00	610.00	696.00	875.00	1210.00	1660.00	2500.00	
20	552.00	591.00	640.00	700.00	798.00	1000.00	1380.00	1875.00	2800.00	
22	629.00	672.00	725.00	790.00	900.00	1125.00	1550.00	2090.00	3100.00	
24	706.00	753.00	810.00	880.00	1000.00	1250.00	1720.00	2300.00	3400.00	

For solid Floor Tube prices multiply above list by 3.

For split Floor Tube prices multiply above list by 6.

For split Standard Tube prices multiply above list by 10.

For Headless Tube prices (above 8 inches long) multiply above list by 4.

For Headless Tube prices (8 inches or under in length) use Regular List.

For Glazed Tube prices add 50% to Net Prices.

Number of Standard Tubes Packed Per Barrel

Length Inches	INSIDE DIAMETER TUBE, INCHES									
	5/16	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	
1/2	15000	12500	10000							
1	11000	7500	6000	4500	3700	2000				
1 1/2	9000	6000	4200	3200	2500	1500	725	450		
2	6500	5000	3400	2500	1800	1100	625	400	280	
2 1/2	5500	3750	2800	2000	1500	900	525	350	250	
3	4500	3000	2000	1500	1100	750	425	300	225	
4	3000	2200	1600	1200	900	600	300	250	200	
5	2500	1700	1250	1000	800	500	285	240	200	
6	2350	1600	1050	1000	650	400	275	225	175	
8	2000	1400	1000	850	675	400	225	190	150	
10	1850	1300	900	800	550	300	180	150	140	
12	1500	1000	750	650	500	275	150	125	120	
14	1100	850	600	500	300	225	120	100	90	
16	1000	650	500	450	275	175	90	75	60	
18	900	500	350	200	190	100	75	60	50	
20	750	500	300	200	150	100	75	60	50	
22	600	500	300	200	150	100	75	60	50	
24	600	450	300	200	150	100	75	60	50	

Gross Weight Pounds Per Barrel Standard Tubes

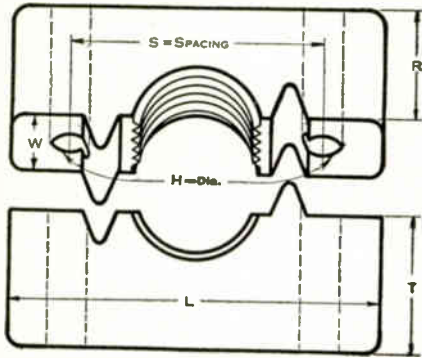
Length Inches	INSIDE DIAMETER TUBE, INCHES									
	5/16	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	
1/2	360	370	370							
1	370	380	375	380	330	350				
1 1/2	350	300	345	375	320	360	420	420		
2	310	355	315	355	310	345	350	350	400	
2 1/2	310	310	315	325	295	330	320	325	380	
3	280	315	235	265	280	315	310	315	370	
4	240	265	245	350	255	240	230	225	240	
5	235	255	245	340	265	265	250	235	255	
6	285	285	250	240	235	235	260	245	270	
8	355	345	390	350	370	395	275	290	295	
10	350	355	360	355	385	400	290	280	255	
12	335	315	345	340	335	330	265	285	280	
14	310	395	320	335	305	315	270	295	290	
16	315	300	335	275	385	315	245	250	250	
18	320	305	300	285	240	250	235	225	290	
20	315	320	325	300	255	285	260	255	310	
22	325	330	320	300	305	315	295	290	335	
24	340	330	305	325	335	380	310	305	360	

All tubes larger than 1 3/4x24 inches are packed 50 tubes per barrel.

For larger size tubes ask for Thomas Standard Porcelain catalog.

Standard B & D 1-Wire Cleats

White Glaze



Light Cap and Light Base

No.	Wire Size	DIMENSIONS, INCHES						No. in Bbl.	Wt. Lb. per Bbl.
		H	L	S	W	R	T		
110	14 to 6	1/4	1 7/8	1 1/8	7/8	5/8	5/8	2000	430
111	6 to 2	5/16	2 1/4	1 3/8	1	3/4	3/4	1600	475
112	2 to 0	5/16	2 5/8	1 11/16	1 1/8	7/8	7/8	1250	455
113	0 to 000	3/8	3	1 15/16	1 1/4	1	1	700	440
114	{ 000 to 200000 CM }	3/8	3 3/8	2 1/4	1 3/8	1 1/8	1 1/8	500	430

Light Cap and Heavy Base

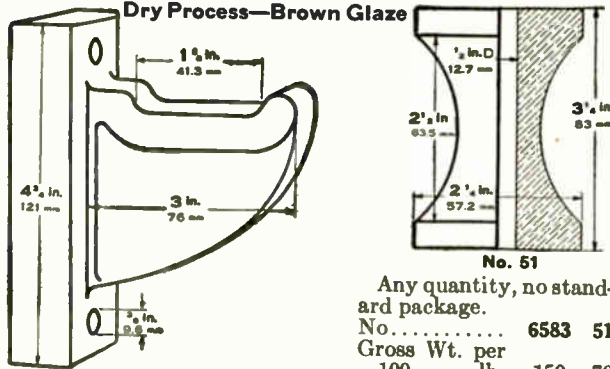
115	14 to 6	1/4	1 7/8	1 1/8	7/8	5/8	1 1/8	1600	410
116	6 to 2	5/16	2 1/4	1 3/8	1	3/4	1 3/16	1250	455
117	2 to 0	5/16	2 5/8	1 11/16	1 1/8	7/8	1 1/4	1000	450
118	0 to 000	3/8	3	1 15/16	1 1/4	1	1 5/16	650	450
119	{ 000 to 200000 CM }	3/8	3 3/8	2 1/4	1 3/8	1 1/8	1 3/8	450	445

Heavy Cap and Heavy Base

120	14 to 6	1/4	1 7/8	1 1/8	7/8	1 1/8	1 1/8	1400	435
121	6 to 2	5/16	2 1/4	1 3/8	1	1 3/16	1 3/16	1050	420
122	2 to 0	5/16	2 5/8	1 11/16	1 1/8	1 1/4	1 1/4	800	415
123	0 to 000	3/8	3	1 15/16	1 1/4	1 1/2	1 1/2	600	465
124	{ 000 to 200000 CM }	3/8	3 3/8	2 1/4	1 3/8	1 3/8	1 3/8	400	460
125	No. 10 Duplex	3/8	3 3/8	2 1/4	1 3/8	1 3/8	1 3/8	400	480
126	{ 200000 to 500000 CM }	7/16	4 1/4	2 15/16	1 5/8	1 9/16	1 9/16	250	475
127	{ 500000 to 1000000 CM }	3/16	4 3/4	3 1/4	1 13/16	1 3/4	1 3/4	200	515
128	{ 800000 to 1250000 CM }	3/16	5 3/8	3 13/16	2	2	2	140	525
129	{ 1000000 to 2000000 CM }	3/16	6	4 3/8	2 1/4	2 1/4	2 1/4	100	505

Porcelain Crane Insulators

Dry Process—Brown Glaze



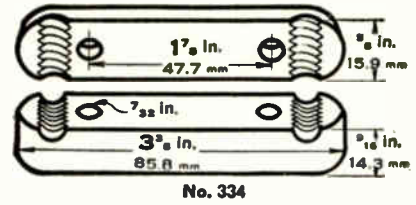
No. 51

Any quantity, no standard package.
 No. 6583 51
 Gross Wt. per 100 lb. 150 70
 Prices upon application.

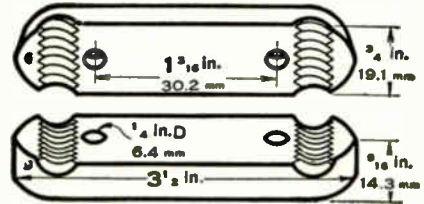
No. 6583

2 and 3-Wire Cleats

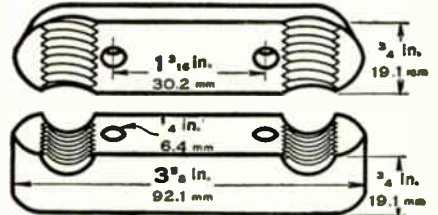
Standard



No. 334



No. 335



No. 350

Any of the sizes listed below can be furnished for either 2 or 3 wires; 2-wire cleats will always be furnished unless 3-wire are specified.

Wire Size No.	Unglazed No.	White Glazed No.	No. in Bbl.	Wt. Lb. per 1000
12-14	334-UG	334-G	1850	200
9-10	335-UG	335-G	1500	288
2-6	350-UG	350-G	1250	333

Same as Standard, but furnished with 1-inch base. For construction in damp places, etc.

Mill Type

12-14	334 1/2-UG	334 1/2-G	1400	350
8-10	335 1/2-UG	335 1/2-G	1100	540
2-6	350 1/2-UG	350 1/2-G	850	453



Nail Assembled Split Knobs



Consists of cap, base, 10d nail and nail head assembled. Has two grooves and will take wire sizes 12 to 14.

No.	5 1/2 Split
Diameter.....inches	1 3/16
Height.....inches	1 3/4
Standard Package.....	2900
Shipping Weight per 1000.....pounds	146

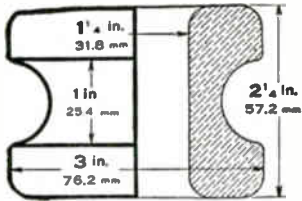
Screw Assembled Split Knobs

Consists of base, cap and 3-inch screw assembled. No. 5 1/2 Split and Detroit have 2 grooves, and take wire sizes 12 to 14. Nos. 9419 and 9420, 4 grooves, take wire sizes 8 to 10 and 4 to 6 respectively.

No.	5 1/2 Split	Detroit	9419	9420
Diameter.....inches	1 3/16	1 1/4	1 1/2	1 15/16
Height.....inches	1 3/4	1 3/4	1 7/8	2 1/8
Standard Package.....	2900	3000	1500	875
Ship. Wt. per 1000.....pounds	146	150	276	490

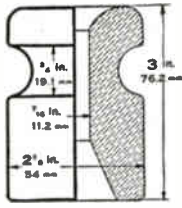
Porcelain Insulators

No. 0



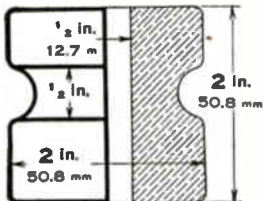
No.	Per 1000	No. in Barrel	Packed Wt., Lb. per Bbl.
0	....	350	350

No. 1



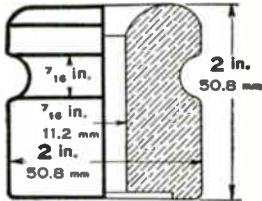
No.	Per 1000	No. in Barrel	Packed Wt., Lb. per Bbl.
1	....	600	420

No. 2



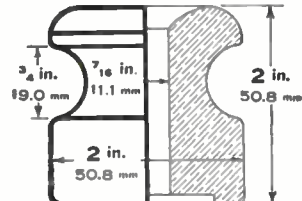
No.	Per 1000	No. in Barrel	Packed Wt., Lb. per Bbl.
2	....	850	420

No. 3



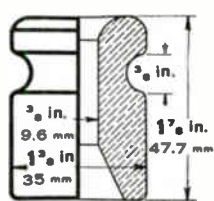
No.	Per 1000	No. in Barrel	Packed Wt., Lb. per Bbl.
3	....	900	435

No. 3 1/2



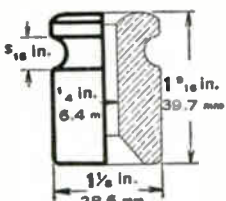
No.	Per 1000	No. in Barrel	Packed Wt., Lb. per Bbl.
3 1/2	....	900	400

No. 4 1/2



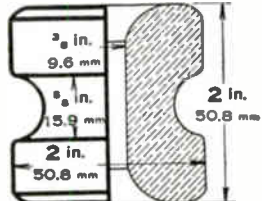
No.	Per 1000	No. in Barrel	Packed Wt., Lb. per Bbl.
4 1/2	....	2000	400

No. 5 1/2



No.	Per 1000	No. in Barrel	Packed Wt., Lb. per Bbl.
5 1/2	....	3500	410

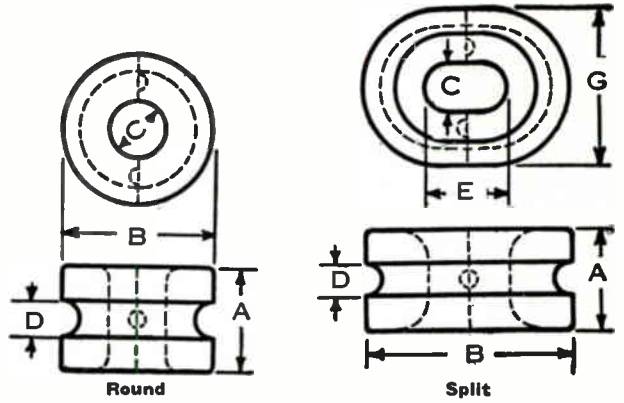
No. 20



No.	Per 1000	No. in Barrel	Packed Wt., Lb. per Bbl.
20	....	1000	440

Forest Service Porcelain Tree Insulators

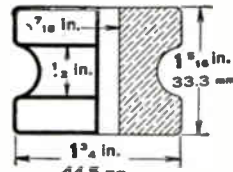
Brown or White Glaze



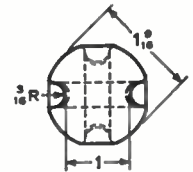
No.	Round		Split		
	6147	6572	6539	6651	6844
Type.....	Split	Solid	Split	Split	Solid
Dimension A.....in.	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
Dimension B.....in.	2	2 1/4	2 1/4	3	3
Dimension C.....in.	9/16	9/16	9/16	3/4	3/4
Dimension D.....in.	1/2	1/2	1/2	1/2	1/2
Dimension E.....in.	....	....	1 3/16	1 1/4	1 1/4
Dimension G.....in.	....	....	2 1/4	2 1/4	2 1/4
No. per Barrel.....	1250	1000	1000	750	750
Ship. Wt. per 1000...lb.	340	405	440	565	565

Electric Fence Insulators

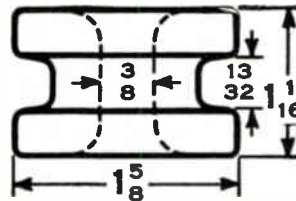
Wet Process—Brown Glaze



No. 15 Knob



No. 500 Strain



No. 7138 Knob

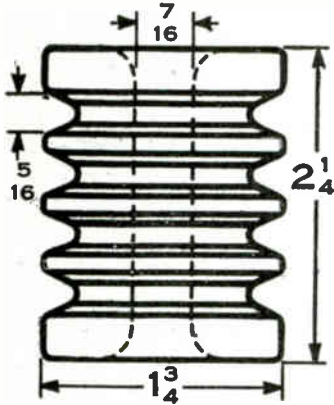
No.	15	7138	500
Quantity in Barrel.....	2000	2500	1500
Weight per Barrel.....pounds	415	375	345

Nos. 5 1/2 and 20 insulators are also used for electric fence insulators.

Porcelain Telephone Knobs

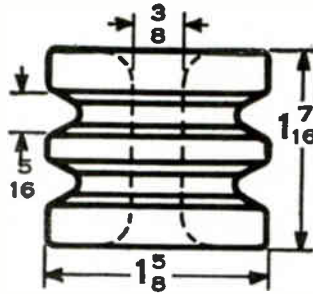
Dry Process Porcelain

No. 6062



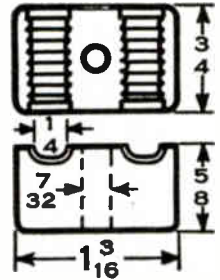
No. 6062
 No. in Barrel 1000
 Ship. Wt. per 1000 lb. 375

No. 6061



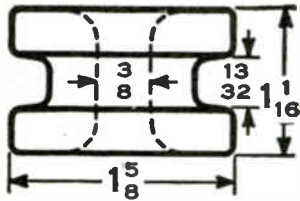
No. 6061
 No. in Barrel 2000
 Ship. Wt. per 1000 lb. 220

No. 7137



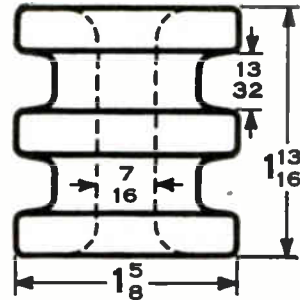
No. 7137
 No. in Barrel 5000
 Ship. Wt. per 1000 lb. 92

No. 7138



No. 7138
 No. in Barrel 2500
 Ship. Wt. per 1000 lb. 150

No. 7139

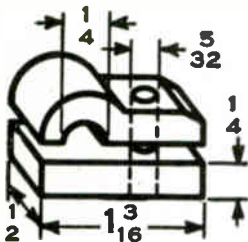


No. 7139
 No. in Barrel 1500
 Ship. Wt. per 1000 lb. 240

Porcelain Telephone Cleats

Drop Process Porcelain

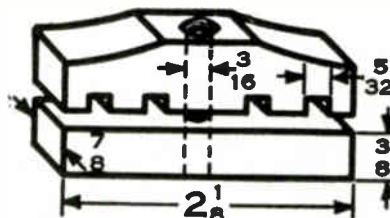
No. 333, Top
 No. 333 1/2, Base



No. 333
 No. in Barrel 21,500
 Ship. Wt. per 1000 lb. 21

No. 333 1/2
 No. in Barrel 22,000
 Ship. Wt. per 1000 lb. 21

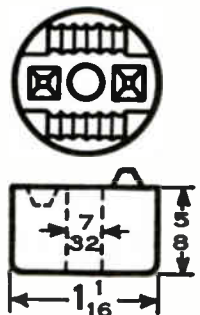
No. 314, Top
 No. 315, Base



No. 314
 No. in Barrel 3000
 Ship. Wt. per 1000 lb. 115

No. 315
 No. in Barrel 3000
 Ship. Wt. per 1000 lb. 130

No. 6250



No. 6250
 No. in Barrel 5000
 Ship. Wt. per 1000 lb. 92

Rhodes Telephone Wiring Nails



Designed for paired or triple conductor telephone wires.

Made under standard specifications to withstand driving, withdrawing, bending, and immersion tests.

Heads are made of tough fibre board and will not easily come off;

brads are specially selected and the finish is both waterproof and di-electric.

Furnished in 4 lengths of pins (measured under the head), 1/2, 5/8, 3/4, and 7/8 inch and each size is furnished in 3 colors.

	Dark Brown	Green	White
Packed in 1000's.....	per 1000 \$1.25	\$1.25	\$1.45
Packed in 100's.....	per 1000 1.45	1.45	1.65

For packing in 50's, add 10 cents per 1000 to above prices.

Rhodes Washer Telephone Wiring Nails



Head is steel drawn over a specially prepared tough fibre in such a way that washer is formed below steel. Insulation is assured. Finish is waterproof and di-electric.

Furnished in 1/2 and 7/8-inch sizes in white, ivory or any standard color.

Per 1000..... \$1.50

Rhodestaples

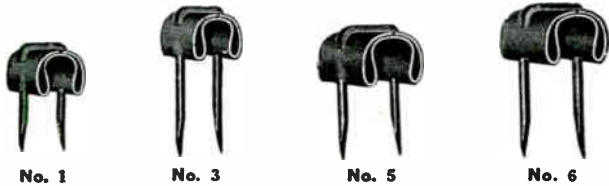


For all types of inside wiring. Fiber top. Constructed with two separate pins joined together with specially prepared and hardened waterproof fiber.

Regularly supplied in neutral gray and dark brown. Packed 100 to box; 10 boxes to carton.

No.	1	2	3	4
Per 1000.....	\$2.00	2.20	2.40	2.80
Size..... in.	1/2 or 5/8	5/8 or 3/4	3/4	7/8

Blake Insulated Staples



Illustrations Are Actual Size

Blake Insulated Staples are packed in various ways to meet the demands of electricians, dealers, radio stores, etc.

No. C-40 staples are furnished in white, buff, green, maroon and brown.

No. R-100 packed 100 in a box; No. D-50 packed 50 in a box; No. C-40 packed 40 in a box.

Display carton of 1000 staples (25 boxes of 40) is supplied either with staples in solid colors or with assortment consisting of 5 boxes of each color.

Size No.	No. R-100 per Carton of 1000	No. D-50 per Carton of 1000	No. C-40 (Colored) per Carton of 1000	APPROX. SHIP. Wt. Lbs.	
				Case of 10000	Case of 25000
1	\$2.60	\$2.80	....	16	41
3	2.60	2.80	....	21	51
5	2.60	2.80	3.00	23	55
6	2.80	....	....	25	60
7	2.80	....	....	27	67

No. 18 Milonite Perfection Insulated Nails



Recommended for installing two-conductor or three-conductor twisted insulated wire.

They are easy to handle and install and prevent short circuiting.

Furnished in light oak, dark oak, dark green olive green, black and white.

Made with shank 1/2, 5/8 and 3/4 inch long.

Price, No 18, All Lengths.....per 1000

Universal Insulator Supports

Supports are malleable iron clamp fitted with cup-pointed casehardened steel set screws (cadmium-plated, electro-

galvanized or sherardized) for securing porcelain and glass insulators, knobs or brackets to exposed steel framework in all classes of structures.



Nos. 500, 501, 502 and 503



Nos. 505 and 506

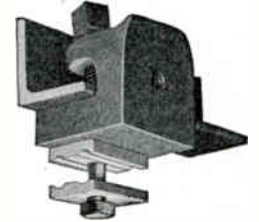
Cat. No.	Per 100	Size Inches	*STANDARD TAPPING Inches	TAPPING Threads per Inch	Std. Pkg.	Wt., Lbs. per 100
500	\$20.00	1	1/4	20	100	20
501	34.00	1 1/2	5/16	18	100	47
502	46.00	2	3/8	16	100	86
503	68.00	2 1/2	1/2	13	100	166
†505	44.00	1 1/2 Special	3/8	24	100	84
†506	56.00	2 Special	3/8	16	100	117

*Tapped as specified without extra charge.

†Carried in stock untapped; specify tapping when ordering. Prices include leather washers but no machine screws.



No. 502 Support with No. 3 1/2 Insulator



No. 502 Support Used with Clamp for Carrying Rome-X, Rubber-Covered Wires, Etc.



No. 501 Support with No. 33 Sectional Insulator



No. 500 Support with Two No. 5 1/2 Split Insulators



No. 501 Support Used with K. & M. Rings

Machine Screws

For Attaching Standard Insulators to Universal Supports

Diameter Inches	Description	Threads		Per 100
		Length Inches	per Inch	
3/16	Flat Head Machine Screws.....	2 1/4	24	\$4.50
1/4	Flat Head Machine Screws.....	2	20	4.50
1/4	Flat Head Machine Screws.....	2 1/2	20	4.50
5/16	Flat Head Machine Screws.....	2 1/4	18	4.50
5/16	Flat Head Machine Screws.....	2 1/2	18	4.50
5/16	Flat Head Machine Screws.....	2 3/4	18	4.70
3/8	Round Head Machine Screws.....	2 1/4	16	5.50
3/8	Round Head Machine Screws.....	2 1/2	16	6.00
3/8	Flat Head Machine Screws.....	2 1/2	16	6.00
3/8	Flat Head Machine Screws.....	3 1/4	16	9.80
3/8	Machine Bolt.....	3	16	4.70
3/8	Machine Bolt.....	3 1/2	16	4.80
1/2	Machine Bolt.....	2	13	4.80
1/2	Machine Bolt.....	3 1/2	13	7.50
1/2	Machine Bolt.....	3 3/4	13	7.70
1/2	Machine Bolt.....	4	13	7.90

Other size machine screws can be furnished to order; prices upon application.

**National Rigid Steel Conduit
Enamelled Conduit**



Enamelled conduit is manufactured from mild drawn steel tubing. Before enameling, the tubing is thoroughly cleaned and freed from dirt, grease, scale, silicates and burrs. This process leaves clean surface for the application of the compound.

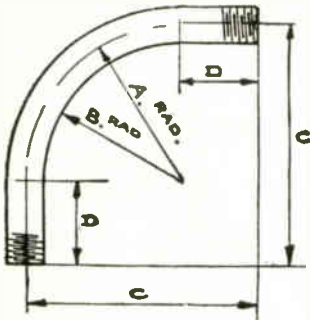
Sherarduct



Sherarduct rigid conduit is made of full weight mild spellerized steel tube and finished under the famous sherardizing process. In this process pure zinc is alloyed with the steel tube both inside and outside to form a rustproof finish which is so entirely a part of the pipe that it cannot be knocked or chipped off.

Standard Pipe Size Inches	Per 100 Feet	DIAMETER, INCHES		Threads per Inch	Weight Pounds per 100 Feet
		Inside	Outside		
1/2	\$12.38	.622	.840	14	85.2
3/4	15.92	.824	1.050	14	113.4
1	22.86	1.049	1.315	11 1/2	168.4
1 1/4	30.92	1.380	1.660	11 1/2	228.1
1 1/2	37.06	1.610	1.900	11 1/2	273.1
2	49.86	2.067	2.375	11 1/2	367.8
2 1/2	80.50	2.469	2.875	8	581.9
3	105.16	3.068	3.500	8	761.6
3 1/2	133.78	3.548	4.000	8	920.2
4	158.32	4.026	4.500	8	1088.9
4 1/2	176.00	4.506	5.000	8	1264.2
5	195.00	5.047	5.563	8	1481.0
6	250.00	6.065	6.625	8	1918.5

Conduit Elbows



Standard Pipe Size Inches	Per 100	ACTUAL DIAMETER INCHES		DIMENSIONS, INCHES				Weight Pounds per 100
		Inside	Outside	A	B	C	D	
1/2	\$30.18	.622	.840	4	3 3/16	6 3/4	2 3/4	82
3/4	39.62	.824	1.050	4 1/2	4	6 7/8	2 1/2	109
1	59.50	1.049	1.315	5 3/4	5 1/16	8 1/2	2 3/8	201
1 1/4	82.90	1.380	1.660	7 1/4	6 7/16	9 1/16	2 1/16	313
1 1/2	117.24	1.610	1.900	8 1/4	7 5/16	11 5/8	3 3/8	441
2	187.34	2.067	2.375	9 1/2	8 5/16	14 5/16	4 1/16	707
2 1/2	338.04	2.469	2.875	10 1/2	9 1/16	17	6 1/2	1411
3	715.54	3.068	3.500	11 3/4	10	17 1/4	5 1/2	1850
3 1/2	1332.44	3.548	4.000	13 3/4	11 3/4	22 1/16	8 1/16	2979
4	1541.38	4.026	4.500	16	13 3/4	23 1/16	7 1/16	3528
5	3720.00	5.047	5.563	24	21 1/4	32	8	6575
6	5060.00	6.065	6.625	30	26 1/16	36 3/4	6 3/4	9645

Couplings

Standard Pipe Size Inches	Per 100	Weight Pounds per 100	Standard Pipe Size Inches	Per 100	Weight Pounds per 100
3/4	17.66	20.9	3 1/2	156.74	424.1
1	23.06	34.3	4	195.06	474.1
1 1/4	32.56	53.5	4 1/2	290.14	550.0
1 1/2	40.32	74.3	5	307.28	700.0
2	54.10	120.8	6	462.24	750.0
2 1/2	77.76	172.	...	.....	.....

In ordering, specify finish desired.

Fretz-Moon Easy-Bending Steel Conduit

Ductile and easy-bending. Severe bends are easily made. The protective galvanized coating will not flake or scale off. This is due to the continuous process of manufacture of the pipe from specially made low carbon, open hearth steel, which eliminates any burnt spots or hard, brittle zones in the metal. Furthermore, the zinc or enameled coating is applied by continuous automatic controlled method which assures a uniform coating on the entire length of the conduit.

Enamelite Finish



Orange label. Finished inside and out with a heavy, baked on coating of wear resisting black enamel. This enamel, of special analysis, is exceedingly tough and flexible. It will not chip, crack or flake under the most severe installation requirements.

Hot Dipped Galvite Finish



Blue label. Offers maximum protection against rust and corrosion, the conduit that outlasts the building. Carefully hot galvanized as described above. Coated inside with special, baked on lacquer.

Conduit is furnished in 10-foot lengths, threaded both ends, with coupling screwed on one end.

Conduit is always designated by its nominal inside diameter. All weights and dimensions shown are nominal.

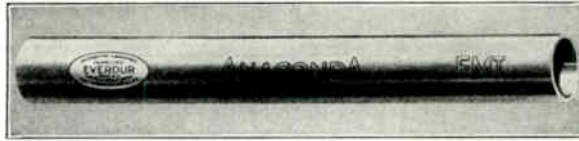
Conduit

Size In.	Per 100 Feet	DIAMETER, IN.		Thick-ness Inches	Threads per Inch	Weight Pounds per Ft.
		Exter-nal	Inter-nal			
1/4	\$12.38	.540	.364	.088	18	.425
3/8	12.38	.675	.493	.091	18	.568
1/2	12.38	.840	.622	.109	14	.852
3/4	15.92	1.050	.824	.113	14	1.134
1	22.86	1.315	1.049	.133	11 1/2	1.684
1 1/4	30.92	1.660	1.380	.140	11 1/2	2.281
1 1/2	37.06	1.900	1.610	.145	11 1/2	2.731
2	49.86	2.375	2.067	.154	11 1/2	3.678
2 1/2	80.50	2.875	2.469	.203	8	5.819
3	105.16	3.500	3.068	.216	8	7.616
3 1/2	133.78	4.000	3.548	.226	8	9.202
4	158.32	4.500	4.026	.237	8	10.889

Couplings

Size In.	Per 100	Weight Pounds per 100	Per 100	DIMENSIONS, INCHES			Weight Pounds per 100
				Radius	Tangent	Offset	
1/4	\$12.32	6.0	\$30.18	...	...	...	.42
3/8	12.32	9.5	30.18	...	...	...	.53
1/2	12.32	11.6	30.18	4	2 3/4	6 3/4	.75
3/4	17.66	20.9	39.62	4 1/2	2 3/4	7 1/4	1.20
1	23.06	34.3	59.50	5 3/4	2 3/4	8 1/2	2.00
1 1/4	32.56	53.5	82.90	7 1/4	3 1/4	10 1/2	3.00
1 1/2	40.32	74.3	117.24	8 1/4	3 1/4	11 1/2	4.27
2	54.10	120.8	187.34	9 1/2	4	13 1/2	7.00
2 1/2	77.76	172.0	338.04	10 1/2	4 1/4	14 3/4	13.00
3	116.50	249.8	715.54	13	4 1/4	17 1/4	17.00
3 1/2	156.74	424.1	1332.44	15	4 3/4	19 3/4	23.00
4	195.06	474.1	1541.38	16	5	21	27.00

Type A Everdur Silicon Bronze Electrical Conduit



Composed principally of copper, these alloys are non-magnetic. They provide great strength, excellent corrosion resistance, high fatigue limit and exceptional ductility.

In addition to strength and other excellent physical qualities, silicon copper bronze metals offer good resistance to a large number of corroding agents. The durability of these metals is attested by the records of equipment, such as smoke and soot washers and blowers; air conditioning and drainage fittings in battery and plating rooms; pumps, valves, process piping and vessels in many chemical plants which have been operated successfully for long periods under unusually corrosive conditions.

Seamless Rigid Conduit

Everdur Rigid Conduit is supplied in nominal sizes from 1/4 to 4 inches inclusive. Its physical properties are about equal to mild steel rigid conduit. As ordinarily supplied, the 10-foot lengths are threaded both ends with one Everdur coupling attached, but they may also be obtained unthreaded for use with threadless fittings.

Nom. Size In.	O.D. Inches	I.D. Inches	Wall Thickness Inches	Wt. Lb. per Foot
1/4	.540	.382	.079	.4339
3/8	.675	.503	.086	.6034
1/2	.840	.636	.102	.8968
3/4	1.050	.834	.108	1.212
1	1.315	1.075	.120	1.708
1 1/4	1.660	1.382	.139	2.519
1 1/2	1.900	1.614	.143	2.993
2	2.375	2.077	.149	3.951
2 1/2	2.875	2.519	.178	5.719
3	3.500	3.084	.208	8.157
3 1/2	4.000	3.548	.226	10.16
4	4.500	4.026	.237	12.04

Seamless EMT Conduit

Everdur Electrical Metallic Tubing is a thin-wall conduit made of Everdur Metal. Its physical properties are about equal to mild steel tubing of comparable wall thickness. It is available in sizes from 3/8 to 2 inches in diameter, in standard 10-foot lengths, for assembly with threadless fittings which facilitate installation and dismantling.

Listed under Factory Inspection and Label Service Procedure by the Underwriters' Laboratories, Inc.

Nom. Size, In.	O.D. Inches	I.D. Inches	Wall Thickness Inches	Wt. Lb. Per Foot
3/8	.577	.493	.042	.2677
1/2	.706	.622	.042	.3322
3/4	.922	.824	.049	.5096
1	1.165	1.049	.058	.7649
1 1/4	1.510	1.380	.065	1.119
1 1/2	1.740	1.610	.065	1.297
2	2.197	2.067	.065	1.651

Seamless Raceways

Special larger sizes are available in wall thicknesses comparable to Electrical Metallic Tubing. These run to 4-inch nominal size as listed below and are available in random lengths of 10 to 14 feet.

These tubes are not listed with Underwriters' Laboratories, Inc.

Nom. Size In.	O.D. Inches	I.D. Inches	Wall Thickness Inches	Approx. Wt. Lb. per Foot
2 1/2	2.605	2.469	.068	2.055
2 1/2	2.875	2.739	.068	2.274
3	3.210	3.068	.071	2.655
3	3.500	3.358	.071	2.900
3 1/2	3.696	3.548	.074	3.193
3 1/2	4.000	3.852	.074	3.461
4	4.182	4.026	.078	3.813

Seamless Couplings

For Rigid Conduit—With Tapered Threads

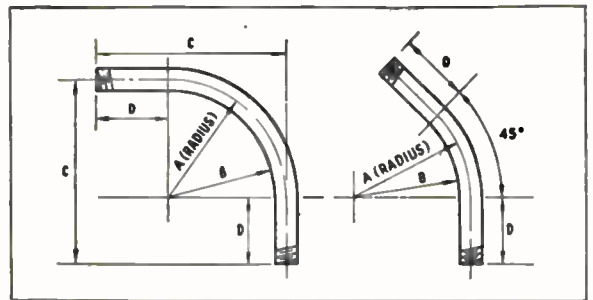
All couplings have tapered threads resulting in stronger and tighter joints which are essential for installations in hazardous locations.

Nom. Size In.	O.D. Inches	Outside Surface	Length Inches	Wt. Lb. per 100 Pieces
1/4	.70	Plain	1.09	7
3/8	.84	Plain	1.13	9
1/2	1.03	Plain	1.47	17
3/4	1.28	Plain	1.50	22
1	1.56	Plain	1.88	41
1 1/4	1.95	Knurled	1.94	63
1 1/2	2.22	Knurled	2.00	80
2	2.72	Knurled	2.06	110
2 1/2	3.28	Knurled	3.06	240
3	3.95	Knurled	3.18	335
*3 1/2	4.75	Casting	3.38	445
*4	5.25	Casting	3.44	515

*Cast Everdur couplings, outside diameters are approximate.

Seamless Rigid Conduit Elbows

Threaded Both Ends without Coupling



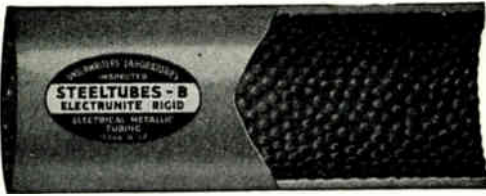
Nom. Size In.	APPROXIMATE DIMENSIONS, INCHES			
	A Radius	B	C Offset 90° Elbow	D TANGENT 90° Elbow 45° Elbow
1/2	4	3 3/16	6 3/4	2 3/4
3/4	4 1/2	4	7 1/2	3
1	5 3/4	5 1/16	8 1/2	2 3/4
1 1/4	7 1/4	6 7/16	10	2 3/4
1 1/2	8 1/4	7 5/16	11 1/4	3
2	9 1/2	8 3/16	13 7/8	4 3/8
2 1/2	10 1/2	9 1/16	15 1/4	4 3/4
3	13	11 1/4	19 3/4	6 3/4
3 1/2	15	13	22 7/8	7 7/8
4	16	13 3/4	23 1/8	7 1/8

Seamless EMT Conduit Elbows

Not Threaded

Nom. Size In.	APPROXIMATE DIMENSIONS, INCHES			
	A Radius	B	C Offset 90° Elbow	D TANGENT 90° Elbow 45° Elbow
1/2	4	3 3/16	6 3/4	2 3/4
3/4	4 1/2	4	7 1/2	3
1	5 3/4	5 1/16	8 1/2	2 3/4
1 1/4	7 1/4	6 7/16	10	2 3/4
1 1/2	8 1/4	7 5/16	11 1/4	3
2	9 1/2	8 3/16	13 7/8	4 3/8

**Electrunite Steeltubes
Thin Wall Conduit**



No threads to cut, ductile, bends easily, is light, tough and strong; resists corrosion.

Steeltubes takes up less space and consequently can be used in narrower quarters.

Hangers for 3/8-inch heavy conduit are the right size for 1/2-inch Steeltubes, hangers for 3/4-inch Steeltubes are the same as for 1/2-inch heavy conduit, etc.

Electrunite Steeltubes Conduit with the knurled inside finish showed by actual test a saving of 20 to 30 per cent in the effort required to pull cable through. The cable rides the tops of the tiny knobs instead of making contact the entire length.

The 1933 National Electrical Code approves Steeltubes for open and concealed work and buried in concrete (except cinder fill) in all sizes up to 2 inches inclusive, 600 V. No. 0 conductors.

Furnished in 10-foot lengths; galvanized finish only—inside finish is black enamel.

Size In.	I.D. In.	O.D. In.	Feet to Bundle	Approx. Wt. Lbs. per 1000 Ft. without Couplings	Size In.	Wt. Lbs. per 1000
3/8	.493	.577	100	254	...	...
1/2	.622	.706	100	321	...	...
3/4	.824	.922	50	488	...	...
1	1.049	1.163	50	711	...	...
1 1/4	1.380	1.508	50	985	1 1/4	150
1 1/2	1.610	1.738	50	1141	1 1/2	200
2	2.067	2.195	30	1470	2	275

**Electrician's Thin Wall Conduit
Utility Tools**



With two of these tools it is possible to tighten nuts on couplings, remove burrs from conduit, ream for a smooth edge, and tighten nut at outlet box. Will fit both 1/2 and 3/4-inch thin wall conduit fittings.

Drop forged from selected steel. Heat-treated and tempered. Heavily plated with polished heads.

Packed 12 in a display carton.

Weight per dozen, 5 pounds.

- No. 2000, For Appleton and Similar Type Fittings, Openings, 1 5/16 and 1 3/8 Inches. each \$2.00
- No. 2001, For T&B and Similar Type Fittings, Openings, 1x1 1/4 Inches. each 2.00

**T & B Capped Elbows
For Heavywall Conduit**



Eliminates the fishing of wires through a sharp bend. Provides a weatherproof entrance.

All openings are bushed to prevent abrasion of wires.

Approved by Underwriters' Laboratories.

No.	Per 100	Size In.	Unit Pkg.	Std. Pkg.	Wt. Lb. per 100
1480	\$65.00	1/2	10	50	50
1481	80.00	3/4	5	50	64
1482	140.00	1	5	25	132
1483	200.00	1 1/4	5	10	250
1484	300.00	1 1/2	2	5	320

**Special Large Radius Elbows
Black Enameled or Sherardized**

For Thick Wall Conduit

Size In.	EACH RADIUS, INCHES							
	12	15	18	24	30	36	42	48
1	\$1.80	\$2.15	\$2.65	\$3.05	\$3.45	\$4.00	\$4.55	\$5.05
1 1/4	2.00	2.35	2.95	3.35	3.85	4.55	5.05	5.75
1 1/2	2.40	2.80	3.45	4.00	4.65	5.35	6.00	6.80
2	3.40	4.00	4.95	5.75	6.55	7.60	8.55	9.60
2 1/2	4.15	4.90	5.90	6.90	8.00	9.25	10.40	11.75
3	Std.	7.50	9.15	10.65	12.25	14.40	16.00	18.15
3 1/2	....	Std.	15.10	17.80	20.50	24.00	26.70	30.20
4	....	....	16.60	19.50	22.50	26.30	32.25	36.50
4 1/2	....	....	Std.	27.30	31.40	36.80	40.90	46.30
5	....	....	....	Std.	35.40	41.60	46.20	52.35
6	....	....	....	....	Std.	43.45	48.30	54.65

- 90° elbows take above list.
- 60° elbows take above list, less 5 per cent.
- 45° elbows take above list, less 10 per cent.
- 30° elbows take above list, less 15 per cent.

Dimensions

Radius Inches	OFFSET		Across Straight End Inches	LENGTH UNBENT	
	Feet	Inches		Feet	Inches
12	1	9	9	3	0
15	2	0	9	3	6
18	2	4	10	4	0
24	2	11	11	4	11
30	3	5	11	5	9
36	3	11	11	6	6
42	4	6	12	7	6
48	5	0	12	8	5

Prices for special sizes, bends and lengths, quoted upon request.

T & B Erickson Conduit Couplings



Conduit Union does away with running threads, saving dies and labor. Permits opening of conduit at any desired point. Enables the start of circuit from 2 outlets and makes a good, strong connection at any point in the run. The pipe ends abut so that no space is left between the lengths of conduit, therefore, it is not necessary to draw the 2 ends of the conduit together. Vibration will not loosen a connection made with an Erickson coupling. The hexagon shoulder and ridges on the outside of the coupling make an easy grip for a pipe wrench.

Cat. No.	Per 100	Size Inches	Unit Pkg.	Std. Pkg.	Weight Pounds per 100
674	\$32.00	3/8 for 3/8-Inch Conduit	50	100	13
675	32.00	1/2 for 1/2-Inch Conduit	50	100	24
676	40.00	3/4 for 3/4-Inch Conduit	25	50	34
677	56.00	1 for 1-Inch Conduit	5	25	52
678	100.00	1 1/4 for 1 1/4-Inch Conduit	5	25	92
679	150.00	1 1/2 for 1 1/2-Inch Conduit	5	25	116
680	260.00	2 for 2-Inch Conduit	5	20	195
681	500.00	2 1/2 for 2 1/2-Inch Conduit	5	10	380
682	800.00	3 for 3-Inch Conduit	5	10	420
683	1200.00	3 1/2 for 3 1/2-Inch Conduit	2	5	520
684	1600.00	4 for 4-Inch Conduit	2	5	620
685	2000.00	4 1/2 for 4 1/2-Inch Conduit	1	2	850
686	2500.00	5 for 5-Inch Conduit	1	2	900

T & B Malleable Iron Fixture Extension Pieces



Cat. No.	Per 100	Size Inches	Unit Pkg.	Std. Pkg.	Weight Pounds per 100
1590	\$4.00	3/8x1	50	1000	70
1591	4.00	3/8x1 3/8	50	1000	85
1592	4.00	3/8x1 1/4	50	1000	65

National Conduit Bushings



Size In.	Per 100	Std. Pkg.	Wt., Lb. Std. Pkg.
1/4	\$1.78	1000	12
3/8	1.78	1000	13
1/2	1.28	2500	63
3/4	2.04	1000	37
1	3.58	500	38
1 1/4	6.02	200	20
1 1/2	6.32	100	12
2	9.28	50	9
2 1/2	15.60	30	10
3	25.06	25	13
3 1/2	46.10	25	16
4	66.52	25	23
4 1/2	117.90	10	10
5	143.46	10	15
6	279.62	10	20

Sherardized finish.

Packed in strong wooden cases.



T & B Malleable Conduit Bushings

Bushings are non-breakable and thoroughly rust-proof. Approved by Underwriters Laboratories. Packed in neat, strong boxes, each box marked to show contents.

No.	Size In.	Unit Pkg.	Std. Pkg.	Wt. Lbs. per 100	Price per 100	No.	Size In.	Unit Pkg.	Std. Pkg.	Wt. Lbs. per 100	Price per 100
121	3/8	100	1000	2	\$6.00	128	2 1/2	10	30	30	\$60.00
122	1/2	100	2500	2 1/2	6.00	129	3	5	25	40	90.00
123	3/4	100	1000	4	8.00	130	3 1/2	5	25	76	200.00
124	1	50	500	9	15.00	131	4	5	25	108	300.00
125	1 1/4	50	200	11	20.00	132	4 1/2	2	10	120	400.00
126	1 1/2	50	100	13	25.00	133	5	2	10	165	500.00
127	2	25	50	22	40.00	134	6	2	10	260	600.00

T & B Locknuts



Steel					
Cat. No.	Per 100	Size In.	Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100
140	\$2.50	3/8	100	1000	11 1/2
141	2.50	1/2	100	2500	11 1/2
142	3.50	3/4	100	1000	2 1/2
143	6.00	1	50	500	4
144	10.00	1 1/4	50	200	7
145	15.00	1 1/2	50	100	8
146	20.00	2	25	50	12

Nos. 140 to 145 are extra heavy steel and have 4 notches for driving. Nos. 146 to 153 are malleable iron and have 8 high ribs.

Malleable Iron					
Cat. No.	Per 100	Size In.	Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100
147	\$30.00	2 1/4	10	30	22
148	50.00	3	5	25	38
149	70.00	3 1/2	5	25	48
150	100.00	4	5	25	52
151	140.00	4 1/2	2	10	65
152	160.00	5	2	10	90
153	200.00	6	2	10	110

National Conduit Locknuts

For sizes 1/2 to 2 inches use Bondnuts.



Size In.	Per 100	Std. Pkg.	Wt., Lb. St. Pkg.	Size In.	Per 100	Std. Pkg.	Wt., Lb. Pkg. Std. Pkg.
1/4	\$1.04	1000	13	4	\$40.76	25	20
3/8	1.04	1000	9	4 1/2	80.80	10	10
2 1/2	14.66	30	8	5	97.98	10	13
3	21.90	25	10	6	175.98	10	20
3 1/2	33.72	25	14	...	...	...	...

National Bondnuts

Takes place of locknuts. Sharp beveled teeth dig into wall of box for metal-to-metal grounding; locks in permanent grip. Sherardized. Rustproof.



Size...in.	1/2	3/4	1	1 1/4	1 1/2	2
Per 100.....	\$.82	1.16	1.88	2.08	3.74	6.32
Carton.....	100	100	50	50	50	25
Std. Pkg....	2500	1000	500	200	100	50
Wt. Std. Pkg...lb..	33	21	22	13	9	14

National Malleable Iron Insulated Bushings



Designed to prevent disastrous grounds which frequently occur with uninsulated bushings. Insulating ring is an integral part of bushing and cannot loosen or fall out. Extremely tough, but not brittle, material and will stand intense strain in installation and use.

Made to N.E.C. standard.

Sherardized; minimum four-dip Preece test; rustproof.

No.....	860	867
Per 100.....	\$26.26	218.76
Size.....inches	1/2	3
Carton.....	10	1
Standard Package.....	50	5
Weight per Standard Package.....pounds	6	3 1/2

National Bushcaps

Sherardized Bushings—Tin Caps



A National Bushcap consists of a full strength, National Malleable Iron Bushing closed by a tin cap. The cap is pressed in tightly and will stay put. It can be easily removed when desired.

A National Bushcap placed on an open end, when conduit is installed, will keep it clean and clear until the wires are drawn in.

Size.....in.	1/2	3/4	1	1 1/4	1 1/2	2
Per 100.....	\$3.00	3.80	7.68	12.62	13.86	28.74
Standard Package....	2500	1000	500	200	100	50
Weight per Standard Package.....lbs.	68	38	39	25	17	11

Chase Nipples



Where a Chase Nipple and coupling is used a box can be removed without disturbing the conduit. Where two outlet boxes are to be used back to back, break out center knock-outs and use a Chase Nipple and a locknut to hold the boxes together. Plated with Taborite Superior galvanizing.

Cat. No.	Per 100	Size In.	Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100
840	\$5.00	1/4	50	100	2
841	5.00	3/8	50	100	3
842	5.00	1/2	50	100	4
843	8.00	3/4	50	100	7
844	15.00	1	25	50	14
845	18.00	1 1/4	10	25	22
846	20.00	1 1/2	10	25	30
847	30.00	2	5	10	58
848	50.00	2 1/2	5	10	76
849	80.00	3	2	5	104
850	250.00	3 1/2	2	5	130
851	325.00	4	2	5	150
852	500.00	4 1/2	2	5	180
853	750.00	5	2	5	210

T & B Female Reducers

Bushed



Reduce an outlet to the next smaller conduit size.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
1250	3/4 to 1/2	100	8	\$10.00
1251	1 to 3/4	50	12	20.00
1252	1 1/4 to 1	50	22	35.00
1253	1 1/2 to 1 1/4	50	29	50.00

T & B Insulating End Bushings

Used to provide a smoothly rounded insulated surface protecting wires against possible abrasion and shorts where wires emerge from conduit. Especially useful where conduit terminates in switch or junction boxes and also on conduit runs terminating behind switch boards, at motors, etc.

Formed from solid insulating material of the strongest and most durable type available, and are unaffected by normal heat, moisture and corrosive agents.

Deep Type—Threaded for 1/2 to 6-Inch Conduit



For ends of conduit at switchboards, motors, etc. Can be used with insulating inserts. Long threads and rugged design assure against breakage.

No.	Each	Size In.	Dimensions, Inches Depth	Dimensions, Inches Diameter	Std. Pkg.	Wt. Lb. Per 100
70D	\$.21	1/2	3/4	1 1/8	50	2
71D	.25	3/4	3/4	1 5/16	50	2 1/2
72D	.35	1	7/8	1 9/8	50	5 1/2
73D	.55	1 1/4	7/8	2	10	7 1/2
74D	.60	1 1/2	7/8	2 1/4	10	7 1/2
75D	.85	2	1 5/16	2 3/4	10	10
76D	1.65	2 1/2	1 1/4	3 1/4	5	20
77D	1.75	3	1 1/4	3 7/8	5	20
78D	2.20	3 1/2	1 1/4	4 3/8	5	25
79D	2.90	4	1 1/4	5	5	25
80D	4.50	4 1/2	1 1/4	5 1/2	1	50
81D	6.50	5	1 1/4	6	1	50
82D	9.50	6	1 1/4	7	1	60

Shallow Type—Threaded for 1/2 to 6-Inch Conduit



The cut down design will fit in limited spaces such as inside of junction and switch boxes. Where insulating inserts are required, deep type is recommended.

No.	Each	Size In.	Dimensions, Inches Depth	Dimensions, Inches Diameter	Std. Pkg.	Wt. Lb. Per 100
70S	\$.15	1/2	1/2	1 1/8	50	1 1/2
71S	.20	3/4	1/2	1 5/16	50	1 1/2
72S	.30	1	3/16	1 9/8	50	2 1/2
73S	.45	1 1/4	3/16	2	10	5
74S	.50	1 1/2	3/16	2 1/4	10	5
75S	.75	2	3/16	2 3/4	10	7 1/2
76S	1.50	2 1/2	3/4	3 1/4	5	15
77S	1.60	3	3/4	3 7/8	5	15
78S	1.85	3 1/2	3/4	4 3/8	5	20
79S	2.00	4	3/4	5	5	25
80S	3.10	4 1/2	3/4	5 1/2	1	30
81S	4.30	5	3/4	6	1	35
82S	7.00	6	3/4	7	1	40



Threadless Type—For 1/2 to 6-Inch Standard Heavywall Conduit

Can be used with insulating inserts.

No.	Each	Size In.	Dimensions, Inches Depth	Dimensions, Inches Diameter	Std. Pkg.	Wt. Lb. Per 100
70N	\$.36	1/2	3/4	1 1/8	50	2
71N	.40	3/4	3/4	1 5/16	50	2 1/2
72N	.50	1	7/8	1 9/8	50	5 1/2
73N	.70	1 1/4	7/8	2	10	7 1/2
74N	.75	1 1/2	7/8	2 1/4	10	7 1/2
75N	1.00	2	1 5/16	2 3/4	10	10
76N	1.85	2 1/2	1 1/4	3 1/4	5	20
77N	1.95	3	1 1/4	3 7/8	5	20
78N	2.40	3 1/2	1 1/4	4 3/8	5	25
79N	3.10	4	1 1/4	5	5	25
80N	4.70	4 1/2	1 1/4	5 1/2	1	50
81N	6.70	5	1 1/4	6	1	50
82N	9.70	6	1 1/4	7	1	60



Threadless Type—For Thinwall Conduit (E.M.T.)

Can be used with the insulating inserts.

No.	Each	Size In.	Dimensions, Inches Depth	Dimensions, Inches Diameter	Std. Pkg.	Wt. Lb. Per 100
83E	\$.36	3/8	3/4	1	50	2
70E	.36	1/2	3/4	1 1/8	50	2
71E	.40	3/4	3/4	1 5/16	50	2 1/2
72E	.50	1	7/8	1 9/8	50	5 1/2
73E	.70	1 1/4	7/8	2	10	7 1/2
74E	.75	1 1/2	7/8	2 1/4	10	7 1/2
75E	1.00	2	1 5/16	2 3/4	10	10

T & B Insulating End Bushings

Male Type—Without Locknut



Used to insulate wires entering outlet or switch box knockouts and auxiliary gutters.

No.	Each	Size In.	DIMENSIONS, INCHES			Std. Pkg.	Wt. Lb. Per 100
			Diam.	Depth Over All	Depth Thrd.		
83M	\$.25	3/8	1 1/8	3/4	7/16	100	1 1/2
70M	.25	1/2	1 1/8	3/4	7/16	100	1 1/2
71M	.30	3/4	1 5/16	3/4	7/16	100	2
72M	.40	1	1 5/8	7/8	9/16	100	3
73M	.70	1 1/4	2	7/8	9/16	50	6
74M	.75	1 1/2	2 1/4	7/8	9/16	50	7
75M	1.05	2	2 3/4	1 5/16	9/16	50	8
76M	1.85	2 1/2	3 1/4	1 1/4	3/4	20	20
77M	1.95	3	3 7/8	1 1/4	3/4	20	25
78M	2.40	3 1/2	4 3/8	1 1/4	3/4	10	30
79M	3.10	4	5	1 1/4	3/4	10	40
80M	4.70	4 1/2	5 1/2	1 1/4	3/4	5	50
81M	6.80	5	6	1 1/4	3/4	5	65
82M	9.75	6	7	1 1/4	3/4	5	90

Male Type—With Locknut



Used to insulate wires entering outlet or switch box knockouts and auxiliary gutters.

No.	Each	Size In.	DIMENSIONS, INCHES			Std. Pkg.	Wt. Lb. Per 100
			Diam.	Depth Over All	Depth Thrd.		
83L	\$.29	3/8	1 1/8	3/4	7/16	100	3
70L	.29	1/2	1 1/8	3/4	7/16	100	3
71L	.35	3/4	1 5/16	3/4	7/16	100	5
72L	.48	1	1 5/8	7/8	9/16	100	7
73L	.73	1 1/4	2	7/8	9/16	50	14
74L	.91	1 1/2	2 1/4	7/8	9/16	50	18
75L	1.34	2	2 3/4	1 5/16	9/16	50	26
76L	2.29	2 1/2	3 1/4	1 1/4	3/4	20	45
77L	2.80	3	3 7/8	1 1/4	3/4	20	60
78L	3.80	3 1/2	4 3/8	1 1/4	3/4	10	80
79L	4.65	4	5	1 1/4	3/4	10	100
80L	5.70	4 1/2	5 1/2	1 1/4	3/4	5	125
81L	7.90	5	6	1 1/4	3/4	5	160
82L	11.00	6	7	1 1/4	3/4	5	190

T & B Insulating Inserts



Blank

2-Hole

3-Hole

Blank is for use with deep type, threaded and threadless, insulating end bushings where it is desired to insulate each conductor.

Two-Hole and Three-Hole will pass the maximum size of conductors allowed in the conduit by the N.E.C.

Size Inches	Blank			2-Hole			3-Hole		
	No.	Each	Std. Pkg.	No.	Each	Diam. Holes In. Std. Pkg.	No.	Each	Diam. Holes In. Std. Pkg.
3/8	83P	\$.12	50	.....	.....	.....	.....	.....	.....
1/2	70P	.12	50	.....	.....	.....	.....	.....	.....
3/4	71P	.15	50	.....	.....	.....	.....	.....	.....
1	72P	.20	50	72B	\$.30	1 1/2 50	72T	\$.30	1 1/2 50
1 1/4	73P	.30	10	73B	.40	1 3/2 50	73T	.40	1 1/2 50
1 1/2	74P	.35	10	74B	.53	2 1/2 10	74T	.53	5/8 10
2	75P	.40	10	75B	.66	3 1/2 10	75T	.66	3/4 10
2 1/2	76P	.55	5	76B	1.00	1 5 76T	1.00	1 1/2 5	
3	77P	.65	5	77B	1.30	1 1/4 5	77T	1.30	1 1/8 5
3 1/2	78P	1.25	5	78B	1.90	1 1/2 5	78T	1.90	1 3/8 5
4	79P	1.75	5	79B	2.40	1 5/8 5	79T	2.40	1 1/2 5
4 1/2	80P	2.25	1	80B	2.90	1 7/8 1	80T	2.90	1 3/4 1
5	81P	2.50	1	81B	3.30	2 1/8 1	81T	3.30	2 1 1
6	82P	3.00	1	82B	3.90	2 1/4 1	82T	3.90	2 1/4 1

Federal Porcelain Spring Clamp Bushings

A special short shank bushing with spring clamp instead of ferrule. Carton, 100. Standard package, 500.

Shipping weight, standard package, 15 pounds.

No.....	C-1	C-2
Per 100.....	\$5.00	5.00
Inside Diameter.....inches	1 1/2	1 1/2
Outside Diameter.....inches	9/16	13/16
Length Under Head.....inches	3/8	3/8



No. C-2

Federal Porcelain Pipe Thread Bushings

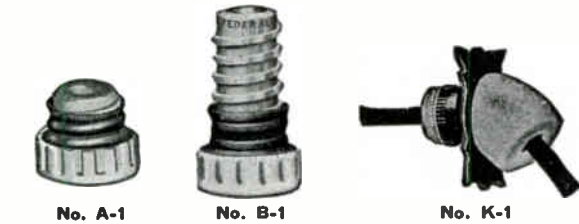
No.....	Plain			With Lock Nut		
	F-1	*F-1 1/2	F-2	F-1L	*F-1 1/2L	F-2L
Per 100 ..	\$3.35	3.95	3.95	4.40	5.00	5.00
Diam.						
Hole.in.	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
Carton...	100	50	50	100	50	50
Std. Pkg.	500	250	250	500	250	250



No. F-2L

*F-1 1/2 bushings have longer shank.

Federal Porcelain Clamp Bushings



No. A-1

No. B-1

No. K-1

Made of vitrified porcelain in one piece. Clamping rings are made of metal, threaded to fit threads on the porcelain. By reversing the clamp ring bushings can be used on thicker material. Bushings furnished in all colors.

Nos. K-1 and K-2 elbow bushings are of a special shape for outdoor work, preventing water from entering around wire; also prevents damage to wire or insulation by sudden bending at the bushing.

Cat. No.	Per 100	Conduit		Length Under Head In.	Approx. Max. Size R.C. Wire	Ship. Wt. Lbs. per 100
		K.O. Size In.	I.D. In.			
A-1	\$6.00	1 1/4	5/16	41/64	No. 10	500 15
A-1 1/2	7.25	1 1/2	5/16	13/16	No. 10	250 14
†A-1 1/2 LS	7.25	1 1/2	5/16	13/16	No. 10	250 16
A-2	7.25	1 1/2	15/32	9/16	No. 8	250 12
A-2 LS	8.25	1 1/2	27/64	13/16	No. 8	250 14
A-2 1/2	7.25	1 1/2	33/64	13/16	*No. 4	250 11
A-3	9.60	3/4	9/16	1	No. 3	250 22
A-4	12.80	1	3/4	15/16	No. 00	125 18
A-4L	12.80	1	7/8	15/16	No. 4/0	125 17
A-5	17.25	1 1/4	1 1/8	15/16	4500000 C.M.	125 25
A-6	31.00	2	1 5/8	1 1/16	1000000 C.M.	60 24
B-1	12.00	1 1/4	9/32	41/64	No. 10	250 11
K-1	18.00	1 1/4	9/32	41/64	No. 10	250 13
K-2	22.50	1 1/2	1 1/8	13/16	No. 8	150 15

*For 1/2-inch Neon sign cable. †L.S., Long shank. †Loom.

T & B Insuliners

Can be used in any raceway outlet. Overlapping ends automatically adjust Insuliner to normal variations in conduit diameters—either standard heavywall conduit or thin-wall conduit (E.M.T.). Smoothly rounded mouth covers bushing shoulder and long

skirt shields end of conduit. Approved by Underwriters' Laboratories.

No.	Per 100	Conduit Size, In.	Unit Pkg.	Std. Pkg.	Wt. Lb. per 100
422	\$15.00	1 1/2	25	50	3
423	17.00	3/4	25	50	6
424	19.00	1	25	50	7
425	24.00	1 1/4	20	40	13
426	27.00	1 1/2	20	40	14
427	33.00	2	15	30	20
428	55.00	2 1/2	15	30	35
429	70.00	3	5	25	50
430	100.00	3 1/2	5	25	60
431	125.00	4	5	25	75



T & B Couplings

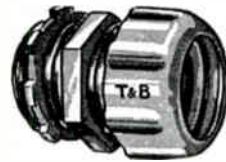
For Thinwall Conduit (E.M.T.)
With Slotted Steel Compression Rings and Watertight Brass Sealing Rings



No.	Per 100	Size In.	Carton	Std. Pkg.	Wt. Lb. per 100
5118	\$15.00	3/8	50	200	13
5120	12.00	1/2	50	200	13
5220	20.00	3/4	25	100	20
5320	30.00	1	25	50	28
5420	50.00	1 1/4	5	25	60
5520	70.00	1 1/2	2	10	100
5620	100.00	2	2	5	140

T & B Connectors

For Thinwall Conduit (E.M.T.)
With Slotted Steel Compression Rings and Watertight Brass Sealing Rings



No.	Per 100	Size In.	Carton	Std. Pkg.	Wt. Lb. per 100
5119	\$15.00	3/8	50	200	12
5121	10.00	1/2	50	200	12
5221	18.00	3/4	25	100	18
5321	30.00	1	25	50	26
5421	50.00	1 1/4	5	25	60
5521	70.00	1 1/2	2	10	100
5621	100.00	2	2	5	140

T & B Watertight Short Elbows

(90° Box Connectors)

For Thinwall Conduit (E.M.T.)



No.	Per 100	Size In.	Carton	Std. Pkg.	Wt. Lb. per 100
4230	\$36.00	1/2	25	50	21
4231	38.00	3/4	25	50	32
4232	50.00	1	5	25	52
*4233	150.00	1 1/4	2	10	100
*4234	175.00	1 1/2	2	10	180
*4235	300.00	2	2	10	320

*Furnished with ribbed malleable iron gland.

T & B Threaded Split Steel Adapters

Threaded Tubelets to Thinwall Conduit

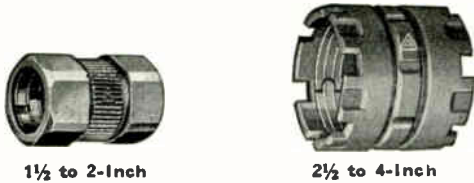


No.	Per 100	Size In.	Unit Pkg.	Std. Pkg.	Wt. Lb. per 100
1038	\$7.00	3/8	50	200	1 1/2
1050	7.00	1/2	50	200	2 1/2
1075	10.00	3/4	25	100	5
1090	15.00	1	25	50	6
1125	25.00	1 1/4	5	20	10
1150	35.00	1 1/2	2	10	15
1151	50.00	2	2	5	20

Appleton Conduit Fittings

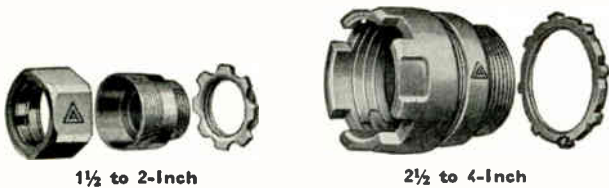
For Use with Standard Rigid Conduit (Heavy-Wall)

No-Thread Couplings



No.	Each	Size In.	Std. Pkg.	No.	Each	Size In.	Std. Pkg.
82N80	\$.23	1/2	100	82N96	\$2.00	2	5
82N81	.34	3/4	50	82N90	3.07	2 1/2	5
82N82	.45	1	25	82N91	4.90	3	5
82N83	.79	1 1/4	25	82N92	6.95	3 1/2	5
82N84	1.10	1 1/2	10	82N93	9.40	4	5

Type L Connectors



No.	Each	Size In.	Std. Pkg.	No.	Each	Size In.	Std. Pkg.
80N95	\$.14	1/2	100	80N90	\$1.75	2	5
80N96	.21	3/4	50	80N91	2.52	2 1/2	5
80N97	.48	1	25	80N92	3.30	3	5
80N98	.63	1 1/4	25	80N93	4.50	3 1/2	5
80N99	.78	1 1/2	10	80N94	6.10	4	5

Type CN Connectors



No.	Each	Size In.	Std. Pkg.	Pkg. Wt., Lbs.	No.	Each	Size In.	Std. Pkg.	Pkg. Wt., Lbs.
80N20	\$.14	1/2	100	17	80N22	\$.48	1	25	13
80N21	.21	3/4	50	15	80N23	.63	1 1/4	25	19

Reducers—Threaded



Use to reduce conduit fittings from larger to smaller sizes as shown.

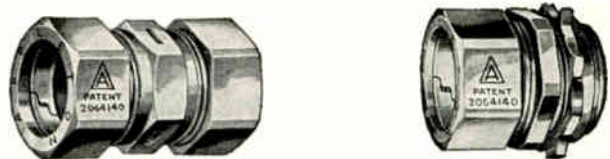
No.	Each	Size In.	Std. Pkg. Asst.	No.	Each	Size In.	Std. Pkg. Asst.
8200	\$.15	1/2-3/8	50	8229	\$2.00	3 1/2-1	10
8201	.15	3/4-1/2	50	8230	2.75	4-1	10
8202	.20	1-1/2	50	8234	.40	1 1/2-1 1/4	50
8203	.30	1 1/4-1/2	50	8235	.50	2-1 1/4	25
8204	.40	1 1/2-1/2	50	8236	1.00	2 1/2-1 1/4	25
8205	.50	2-1/2	25	8237	1.35	3-1 1/4	25
8206	1.00	2 1/2-1/2	25	8238	2.00	3 1/2-1 1/4	10
8207	1.35	3-1/2	25	8239	2.75	4-1 1/4	10
8208	2.00	3 1/2-1/2	10	8243	.50	2-1 1/2	25
8209	2.75	4-1/2	10	8244	1.00	2 1/2-1 1/2	25
8213	.20	1-3/4	50	8245	1.35	3-1 1/2	25
8214	.30	1 1/4-3/4	50	8246	2.00	3 1/2-1 1/2	10
8215	.40	1 1/2-3/4	50	8247	2.75	4-1 1/2	10
8216	.50	2-3/4	25	8251	1.00	2 1/2-2	25
8217	1.00	2 1/2-3/4	25	8252	1.35	3-2	25
8218	1.35	3-3/4	25	8253	2.00	3 1/2-2	10
8219	2.00	3 1/2-3/4	10	8254	2.75	4-2	10
8220	2.75	4-3/4	10	8258	1.35	3-2 1/2	25
8224	.30	1 1/4-1	50	8259	2.00	3 1/2-2 1/2	10
8225	.40	1 1/2-1	50	8260	2.75	4-2 1/2	10
8226	.50	2-1	25	8264	2.00	3 1/2-3	10
8227	1.00	2 1/2-1	25	8265	2.75	4-3	10
8228	1.35	3-1	25	8269	2.75	4-3 1/2	10

Appleton Conduit Fittings

For Electrical Metallic Tubing—Cadmium Finish
Schedule TW

Gland Ring Type Couplings and Connectors

Approved Watertight—PATENT 2064140



Coupling

Connector

Gland ring type coupling and connector are furnished with a round split curved ring and tightening nut. The ring drops into position and the nut tightens the ring securely to the electrical metallic tubing, making a rigid connection which is absolutely watertight.

Connector is similar to coupling except that one end is threaded and equipped with a locknut for use in connecting to boxes.

Coupling No.	Connector No.	Per 100	Size In.	Std. Pkg.	Car-ton	Wt. Lb. Std. Pkg.
95T038	*96T038	\$12.00	3/8	200	50	12
95T050	96T050	12.00	1/2	200	50	13
95T075	96T075	17.00	3/4	100	25	15
95T100	96T100	25.00	1	50	25	20
95T125	96T125	50.00	1 1/4	25	5	50
95T150	96T150	70.00	1 1/2	10	2	80
95T200	96T200	100.00	2	5	1	140

Brass Ring Type Couplings and Connectors

Approved Watertight



Coupling

Connector

Brass ring type coupling and connector are furnished with a round steel wire ring and flat brass ring, which also makes the connection absolutely watertight. Both types of couplings in 1/2 to 2-inch sizes have hexagonal nuts and the center portion is also hexagonal so that it can be held rigidly with wrench when connecting lengths of electrical metallic tubing.

Connector is similar to coupling except that one end is threaded and equipped with a locknut for use in connecting to boxes.

Coupling No.	Connector No.	Per 100	Size In.	Std. Pkg.	Car-ton	Wt. Lb. Std. Pkg.
95T038-B	*96T038-B	\$12.00	3/8	200	50	10
95T050-B	96T050-B	12.00	1/2	200	50	11
95T075-B	96T075-B	17.00	3/4	100	25	13
95T100-B	96T100-B	25.00	1	50	25	20
95T125-B	96T125-B	50.00	1 1/4	25	5	50
95T150-B	96T150-B	70.00	1 1/2	10	2	60
95T200-B	96T200-B	100.00	2	5	1	100

*Designed to take 3/8-inch electrical metallic tubing, and the other end is threaded and furnished with locknut to fit in regular 1/2-inch knock out.

Adapters

(Threadless Thin-Wall Conduit)

Any Appleton Threaded Unilets or similar fittings made by other manufacturers will take electrical metallic tubing with the use of this adapter screwed into the hub of any 3/8 to 2-inch threaded type fittings, and grips the conduit securely. This adapter practically makes a no-thread fitting out of any threaded conduit fitting.

No.	Per 100	Size In.	Std. Pkg.	Car-ton	Wt. Lb. per 100
80T59	\$4.00	3/8	200	50	1 1/2
80T60	4.00	1/2	200	50	2 1/2
80T61	6.00	3/4	100	25	5
80T62	10.00	1	50	25	6
80T63	20.00	1 1/4	20	10	10
80T64	25.00	1 1/2	10	5	15
80T65	35.00	2	5	1	20

T & B Entrance Caps

For Use with Service Entrance Cable

Approved by Underwriters' Laboratories.



No. 5550

No.	Description	Unit Pkg.	Std. Pkg.	Wt. Lb. per 100	Per 100
5549	For Service Entrance Cable from 2W12 through 2W6.....	5	50	15	\$40.00
5550	For Service Entrance Cable from 2 or 3W12 through 2 or 3W8...	5	50	20	50.00
5551	For Service Entrance Cable from 2 or 3W6 through 2 or 3W4 and 2W2.....	5	50	25	75.00
5535	3-Hole Insulator.....	2	5	125	100.00
5536	3-Hole Insulator.....	2	5	175	125.00
5537	5-Hole Insulator.....	5	50	65	175.00

T & B Grounding Bushings

For use with or without jumper wire. Wedge, when screwed down, bites into the box, insuring a perfect ground between conduit and box.

Approved by Underwriters' Laboratories.



No.	Per 100	Size In.	Unit Pkg.	Std. Pkg.	Wt. Lb. per 100
3860	\$20.00	1/2	50	100	8
3861	22.00	3/4	50	100	9
3862	35.00	1	25	50	12
3863	40.00	1 1/4	25	50	15
3864	50.00	1 1/2	25	50	30
3865	70.00	2	10	25	35
3866	100.00	2 1/2	5	10	40
3867	150.00	3	5	10	45
3868	200.00	3 1/2	1	5	50
3869	300.00	4	1	5	55

No. 2110 T & B Watertight Wall Plates

Makes a watertight job where service entrance cable enters the building. For 2W8 through 3W4.

Malleable iron, hot dip galvanized. Furnished with soft rubber gasket and three galvanized wood screws.

No.	Per 100	Unit Pkg.	Std. Pkg.	Wt. Lb. per 100
2110	\$40.00	10	100	....



T & B Conduit Insulets

Base made of malleable iron galvanized. Insulator has three wire holes.

No.	Per 100	Size In.	Unit Pkg.	Std. Pkg.	Wt. Lb. per 100
1610	\$20.00	1/2	25	100	15
1611	30.00	3/4	25	100	19
1612	40.00	1	5	50	38



No. 1655 T & B Cable End Insulets

This is a cable insulet making use of the tite-bite grip to hold either armored cable or non-metallic sheathed cable. Suitable for 1, 2, or 3 wires. Holds the following sizes: 2-14, 3-14, 2-12, 3-12, 2-10, and 3/8-inch flexible conduit.

No.	Per 100	Size In.	Car-ton	Std. Pkg.	Wt. Lb. per 100
1655	\$20.00	3/8	25	100	18



T & B Slip-In Fixture Studs

Can be installed from interior of box without removal of parts. Occupies minimum space in box, thus allowing more room for wires.

No small nuts and bolts to lose or fuss with.

To install this stud, back off locknut a few turns, slip base of stud into knockout

from inside of box, allow prongs to drop into fixture stud holes and tighten down the locknut.

No.	Type	Size In.	Car-ton	Std. Pkg.	Wt. Lb. per 100	Per 100
1601	Hollow Stem.....	3/8	100	500	7	\$5.00
1600	Solid Stem for Concrete Work ..	3/8	100	500	8	5.00
1602	3/8" Male by 1/8" Female....	..	100	500	8	5.00



Hickey Fixture Studs

Made of malleable iron with galvanized finish.

All four prongs have extra long slots to allow adjustment.

Cat. No.	Size Stud Inches	Std. Pkg.	Wt. Lb. Std. Pkg.	Price per 100
16	3/8	1000	8	\$5.00
17	1/2	....	13	6.50
Stove Bolts and Nuts.....	1000	1		.50



T & B Grounding Wedges

For binding service conduit, service enclosures or the grounded wire. Can be used either inside or outside the box. Will lock the conduit system together, electrically and mechanically, without jumper wires. Underwriters approved.

Cat. No.	Size In.	Unit Pkg.	Std. Pkg.	Wt. Lbs. per 100	Price per 100
3650	1/2	50	100	2 1/2	\$12.00
3651	3/4	50	100	5 1/2	14.00
3652	1	25	50	6 1/2	17.00
3653	1 1/4	25	50	8	19.00
3654	1 1/2	25	50	10	22.00
3655	2	10	25	12	32.00
3656	2 1/2	5	10	20	66.00
3657	3	5	10	23	80.00
3658	3 1/2	2	5	30	144.00
3659	4	2	5	40	160.00
3660	4 1/2	2	3	100	240.00
3661	5	2	2	100	300.00
3662	6	2	2	100	360.00



T & B Adjustable Ground Clamps

Designed to take three sizes of ground wire, Nos. 8 and 6 armored and No. 4 bare to 1/2, 3/4, and 1-inch waterpipe, as well as ground rods from 1/2 inch up.

When using 1-inch waterpipe, clamp ground wire with top hook (one on the end of jaw). When using 1/2-inch waterpipe, use lower hook. For 3/4-inch pipe, use either hook.

There is nothing to loosen, nothing to take apart. Wrap fitting around waterpipe, insert ground wire, tighten bolt and job is done. Ground wire locks jaws together and bolt clamps them tightly on waterpipe. Small screw grounds armor of No. 6 and 8 wire.

Made of tough malleable iron and protected from corrosion by Tabolite superior galvanizing. Approved by Underwriters.

No.	Description	Unit Pkg.	Std. Pkg.	Wt. Lb. per 100	Per 100
3841	For Nos. 8 or 6 Armored Ground Wire or No. 4 Bare Copper Ground Wire to 1/2, 3/4, or 1-In. Waterpipe with Clamp Grounding Armor of No. 8 or No. 6 Wire	5	25	38	\$40.00
3843	Same as No. 3841 with Adapter for Ground Rods from 1/2-In. up.	5	25	48	40.00

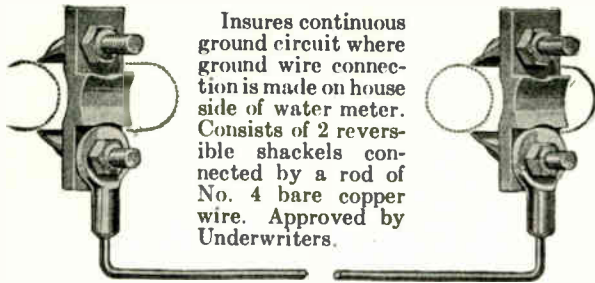
Solderless Ground Fittings

To be used in cases where plain bare copper wire or insulated building wire is used as the grounding conductor.

No.	Description	Unit Pkg.	Std. Pkg.	Wt. Lb. per 100	Per 100
3840	For No. 4 B. & S. Bare or Insulated Copper Wire to 1/2, 3/4, or 1-In. Waterpipe.....	5	25	38	\$35.00
3842	Same as No. 3840 with Adapter for Ground Rods from 1/2-In. Up....	5	25	48	35.00

Nos. 3840 and 3842 may also be used with No. 8 or No. 6 bare or insulated copper wire.

T & B Meter Shunts



Insures continuous ground circuit where ground wire connection is made on house side of water meter. Consists of 2 reversible shackels connected by a rod of No. 4 bare copper wire. Approved by Underwriters.

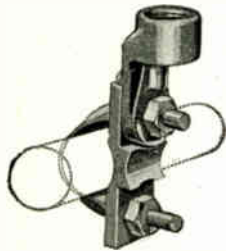
Cat. No.	Each	For Water Pipe, Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100
3812	\$1.25	1/2, 3/4 and 1	25	25	112
3813	1.50	1 1/4, 1 1/2 and 2	20	20	172
3814	2.00	2 1/2, 3 and 3 1/2	10	10	350
3815	2.50	4, 4 1/2 and 5	5	5	400

T & B Ground Fittings

Protective Type

Approved by Underwriters

For Rigid Conduit to 1/2, 3/4 and 1-Inch Water Pipe



Cat. No.	Each	Size Conduit Inches	Unit Pkg.	Std. Pkg.	Weight Pounds per 100
3800	\$.70	1/2	25	100	50
3801	1.25	3/4	25	25	57
3802	1.75	1	10	10	65

For Rigid Conduit to 1/4, 1 1/2 and 2-Inch Water Pipe

3680	\$.90	1/2	10	50	170
3681	1.60	3/4	5	20	172
3682	2.50	1	2	10	175

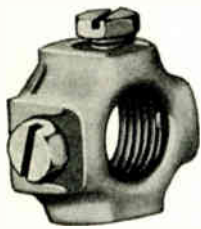
For No. 8 Single Armored Cable to 1/2, 3/4 and 1-Inch Water Pipe

3810	\$.70	...	25	100	48
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Nos. 3800, 3801 and 3802

T & B Grounding Bushings

For use with jumper wire.



No.	Per 100	Size In.	Unit Pkg.	Std. Pkg.	Wt. Lb. per 100
3850	\$7.50	1/2	50	100	8
3851	9.00	3/4	50	100	9
3852	15.00	1	25	50	12
3853	18.00	1 1/4	25	50	15
3854	24.00	1 1/2	25	50	30
3855	35.00	2	10	25	35
3856	.....	2 1/2	5	10	40
3857	.....	3	5	10	45
3858	.....	3 1/2	1	5	50
3859	.....	4	1	5	55

Sherman Ground Fittings

For Bare Copper Wire



No. GF3

No. GF3 with lug is designed expressly for No. 4 bare copper wire; will take to No. 10 B. & S.

No. GF14 is same as No. GF3 except that no soldering lug is provided.

Heavy malleable iron, rust-proofed.

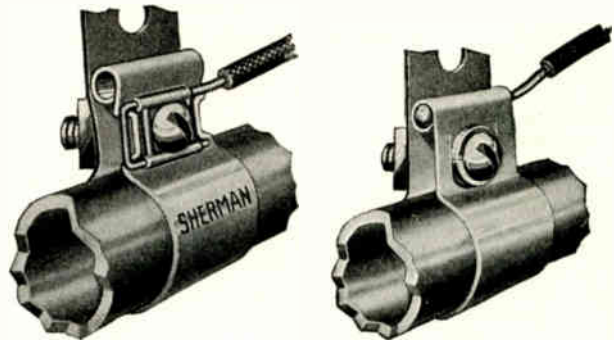
Approved by Underwriters' Laboratories.

Slotted clamp allows easy installation. Reversible clamp for pipe or rod.

No.	GF3	GF14	GF9	GF10	GF11
Pipe Size.....in.	1/2-1	1/2-1	1 1/4, 1 1/2, 2	2 1/2, 3	3 1/2, 4
Carton Quantity....	5	5	5	5	5
Standard Package....	25	25	10	10	10
Wt. per 1000.....lb.	400	385	520	1125	1500

Prices upon application.

Sherman Copper Ground Clamps



Solderless Type

For general grounding or bonding of electrical conductors. Heavy copper strap is easy to apply.

Solderless No.	1SL	2SL	3SL	4SL
Solder No.	1	2	3	4
Pipe Size.....inches	3/8-1	3/8-2	3/8-3	3/8-4
Carton Quantity.....	100	100	50	25
Standard Package.....	1000	1000	500	250
Weight per 1000.....pounds	85	130	190	240

Prices upon application.

Solder Type

National New York Ground Clamps



Tinned copper strap for both types furnished in coils if desired.

Specify type and size. For B, also specify wire size.

Type A

For use on signalling systems, telephone and telegraph circuits.

Furnished in sizes 1, 2, and 3 inches.

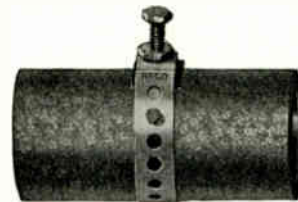


Type B

For heavy circuits, no soldering required. Post drilled for any two sizes, either No. 4, 6, 8, 10, 12, or 14 B&S wire gage.

Furnished in sizes 1, 2, 3 and 4 inches.

No. 1 Reliable Station Ground Clamps



For telephone, radio and signal circuit station grounds.

For 3/8 to 1 1/4 inch pipe. Tinned copper strips, round edge with close fitting threads.

No. 1.....each

No. 3830 T & B Ground Fittings

If a conduit connection is not required, it is economical to use this fitting, which consists of U-bolt, adapter bar and soldering lug assembly without conduit hub. Solder lug takes No. 4 wire.

For 1/2, 3/4 and 1-Inch Water Pipe

Cat. No.	Each	Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100
3830	\$.50	5	10	40

Galvanized Conduit Straps



*Armored cable.

Cat. No.	Per Lb.	Size Inches	No. to Cat. No.	Cat. No.	Per Lb.	Size In.	No. to Lb.
208	\$.25	*	68	214	\$.25	1 1/2	11
209	.25	3/8	50	215	.25	2	7
210	.25	1/2	45	216	.25	2 1/2	5
211	.25	3/4	30	230	.25	3	4
212	.25	1	17	231	.25	3 1/2	2
213	.25	1 1/4	13	...	...	...	...

T & B One-Hole Malleable Iron Pipe Straps For Heavywall Conduit

No.	Per 100	Size In.	Screw Size, In.	Hole Size, In.	Std. Pkg.	Wt., Lb. per 100
1275	\$4.00	3/8	1/4	1/4	100	4
1276	5.00	1/2	5/16	1/4	100	6
1277	6.00	3/4	3/8	1/4	100	9
1278	8.00	1	5/16	1/4	100	13
1279	14.00	1 1/4	3/8	1/4	50	20
1280	20.00	1 1/2	7/16	1/4	50	32
1281	40.00	2	1/2	1/4	25	68
1282	60.00	2 1/2	11/16	1/4	25	104
1283	80.00	3	1 1/16	1/4	25	148
1284	120.00	3 1/2	1 1/16	1/4	10	200
1285	180.00	4	1 1/16	1/4	10	260
1286	275.00	4 1/2	1 1/16	1/4	5	360
1287	350.00	5	1 1/16	1/4	5	460



T & B Malleable Pipe Straps For Thinwall Conduit



Cat. No.	Per 100	Size Inches	Std. Pkg.	Wt., Lbs. Per 100
4175	\$4.00	3/8	100	4
4176	5.00	1/2	100	5
4177	6.00	3/4	100	6
4178	8.00	1	100	9
4179	4.00	1 1/4	50	18
4180	30.00	1 1/2	50	26
4181	40.00	2	25	48

Di-Stampt Conduit Clamps

Pressed Steel—Hot Galvanized

Hot dipped galvanized by the Diamond process. The hollow or arched section of this clamp gives maximum strength with minimum weight.

Conduit Size In.	Per 100	No. Wood Screws	Std. Pkg.	Wt. Lbs. per 100
1/4	\$1.17	10	100	3
3/8	1.17	10	100	3
1/2	1.45	10	100	5
3/4	1.87	14	100	8
1	2.91	14	100	9
1 1/4	4.85	18	50	20
1 1/2	7.76	18	50	36



Diamond Two-Hole Conduit and Cable Straps



This strap is Diamond Galvanized and is designed to withstand heavy strains and vibration. Because of its great strength, fewer straps need be used in conduit or cable runs.

No.	Per 100	Cable Conduit Size or Normal Conduit I.D. In.	Steel Used In.	No.	Per 100	Conduit I.D. In.	Cable Size or Normal Conduit I.D. In.	Steel Used In.
4-0	\$3.00	1/8	7/16	2	\$7.40	3/4	1 1/8	3/4 x .080
2-0	5.30	1/4	3/8	3A	8.70	1	1 1/4	7/8 x 1/8
0	5.50	3/8	1 1/16	3	12.50	1 1/2	1 7/8	7/8 x 1/8
1	6.40	1/2	3/4	3B	12.50	1 1/4	1 5/8	7/8 x 1/8
1A	6.60	1/2	7/8	4A	13.00	1 3/4	1 7/8	7/8 x 1/8
2A	7.20	1	1 1/16	4	13.00	1 1/2	1 7/8	7/8 x 1/8

Diamond One-Hole Malleable Clamps



Hot galvanized. Annealed twice before galvanizing to assure ductility. Will not crack in installation.

Has but one screw hole and cuts in half the expense of screws or expansion bolts and the labor of installing as compared to the two-hole strap.

Conduit or Pipe, Size, Normal I.D. Inches	Per 100	Diam. Screw Hole In.	Expansion Shield or Screw Anchor Size, In.	Std. Pkg.	Wt. Lb. per 100
1/4	\$1.43	3/16	3/16x1	100	3 1/2
3/8	1.43	3/16	3/16x1	100	4
1/2	1.66	1/4	3/16x1	100	6
3/4	2.20	5/16	1/4x1	100	9
1	2.75	5/16	1/4x1	100	15
1 1/4	4.68	3/8	5/16x1	50	24
1 1/2	6.51	7/16	3/8x2	50	38
2	14.51	9/16	1/2x2	25	64
2 1/2	26.02	5/8	1/2x2	25	115
3	35.68	5/8	1/2x3 1/2	25	150
3 1/2	53.35	1 1/16	5/8x3 1/2	10	250
4	78.03	1 1/16	5/8x3 1/2	10	325

In ordering, designate inside diameter of conduit or outside diameter of lead cable.

Diamond 1-Hole Steel Clamps



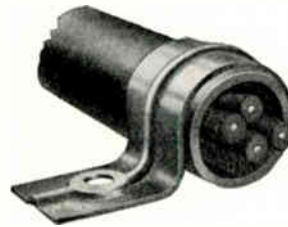
Makes a very efficient fastening where lighter construction is to be used, and where it will not be subjected to severe strains.

Sizes for thin wall conduit.

Made of cold rolled mild steel annealed and Diamond galvanized after forming.

No.	Per 100	Cable Size, In.	Reg. Conduit or Pipe, In.	Screw Size, In.	Wt. Lbs. per 100
O.G.	\$1.00	3/16	...	3/16	1.0
O.G.	1.30	1/4	...	3/16	1.0
O.G.	1.30	3/16	...	3/16	1.0
5/0	1.60	3/8	...	3/16	1.0
4/0	1.65	1/2	1/8	3/16	1.1
3/0	1.75	1/2	...	3/16	1.2
2/0	1.80	5/8	1/4	3/16	1.3
0	4.40	1 1/16	3/8	3/16	4.0
1	5.10	3/4	1/2	3/16	4.5
1A	5.30	7/8	...	3/16	5.0
2A	5.80	1	3/4	3/16	7.0
2	6.00	1 1/8	...	3/16	7.5
3A	7.00	1 1/4	1	3/16	15.0
3	10.00	1 1/2	...	3/16	16.0
3B	10.00	1 5/8	1 1/4	3/16	17.0
4A	10.50	1 3/4	...	3/16	19.0
4	10.50	1 7/8	1 1/2	3/16	20.0

Minerallac Jiffy Clips



Made in cadmium plated steel and Everdur, for hanging pipe, conduit, and BX cable; also for mounting coils, etc., in radios and vending machines. Only one screw or bolt is required to hold the clip and the article which it is supporting firmly in place.

No. or Size	Steel per 100	Everdur per 100	CONDUIT, In. Rigid	Thin Wall	O.D. CONDUIT, In. Rigid	Thin Wall	No. in Std. Pkg.	APPROX. Wt., Lb. —Strp. Pkg.— Steel Everdur
250	\$7.70	\$2.60	...	...	.250	...	500	6 1/4 6 1/2
375	.90	2.80	...	...	.375	...	500	6 3/8 6 3/4
1/8"	1.00	3.00	3/8	...	.405	...	500	6 1/2 7
1/4"	1.10	3.50	1/4	...	.540	...	500	7 1/2 8 1/4
3/8"	1.30	5.50	3/8	1/2	.675	.706	100	3 3/4
1/2"	1.40	7.00	1/2	...	.840	...	100	4 4 1/4
5/8"	1.75	8.00	...	3/4	...	.922	100	4 1/4 4 1/2
3/4"	2.00	9.00	3/4	...	1.050	...	100	4 1/2 5
1"	3.00	15.00	1	...	1.315	...	100	8 1/4 9
1 1/4"	4.00	20.00	1 1/4	...	1.660	...	100	12 1/4 13 1/2

T & B 3/8-Inch Cable Clips

No. 90 For Armored Cable



The pitch of the clip legs is counter clockwise to the spiral of cable and holds the flat top of clip from following the convolutions and cannot enter between them. Dent in top of clip settles between rounds of cable convolutions. Cable cannot slip or pull out.

Packed in unit package, 100, 500, or bulk; 10,000 in standard package. Weight per 1000, 14 pounds. per 100 \$.40

No. 91 For Non-Metallic Sheathed Cable

This clip is the same as the No. 90 except that it has no dent in the top. The legs are also shorter because the clip does not have to be driven into the wood as far as the No. 90.

Packed in unit package, 100, 500, or bulk; 10,000 in standard package. Weight per 1000, 11 pounds. No. 91. per 100 \$.35

T & B Cable Straps

For Use with Service Entrance Cable



No. 1341



No. 1344 or 1345

Malleable Iron			Aluminum			Unit Pkg.	Std. Pkg.
No.	Per 100	Wt. Lb. per 100	No.	Per 100	Wt. Lb. per 100		
1341	\$2.50	3	1391	\$5.00	2	50	100
1344	4.00	4 1/2	1394	6.00	2	50	100
1345	5.00	6	1395	7.00	3	50	100

T & B Adjustable Conduit Hangers



Type A

Hanger will fit any flange from 2 3/4 to 12 inches. It is adjustable for varying plaster lines and will support any number of conduits from 1 to 8, which may run at any angle with the beams and close against the beam, or far enough below to permit a second line of conduits to be run above. Additional

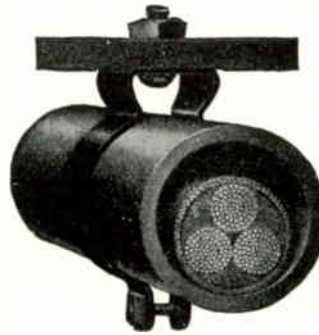
runs of conduit can be added without interfering with lines already in position. It is not necessary to loosen clamp to meet any condition which may arise. Clamps of stamped steel.

Cat. No.	Per 100	Description	Std. Pkg.	Wt., Lbs. per 100
700	\$50.00	Type A Clamp (Incl. Bolts) Fits Flange from 2 3/4 to 7 7/8 in.	100	33
701	70.00	Type B Clamp (Incl. Bolts) Fits Flange from 7 to 12 In.	100	62
703	8.00	Special Bolts.	100	6

Complete with Support	Std. Pkg.	Type A		Type B			
		Cat. No.	Per 100	Wt., Lbs. per 100	Cat. No.	Per 100	Wt., Lbs. per 100
1- 1/2"	100	710	\$50.00	45	760	\$70.00	74
1- 3/4"	100	711	60.00	46	761	80.00	75
1-1"	50	712	70.00	48	762	90.00	77
1-1 1/4"	50	713	75.00	51	763	100.00	80
1-1 1/2"	25	714	80.00	52	764	110.00	81
1-2"	25	715	90.00	56	765	115.00	85
1-2 1/2"	25	716	100.00	59	766	130.00	88
1-3"	25	717	110.00	63	767	140.00	92
2- 1/2"	100	718	60.00	58	768	80.00	87
2- 3/4"	100	719	70.00	65	769	90.00	94
2-1"	25	730	80.00	73	780	90.00	102
2-1 1/4"	25	731	85.00	85	781	100.00	114
2-1 1/2"	25	732	90.00	95	782	110.00	124

Minerallac Cable and Conduit Hangers

Approved by the National Board of Underwriters



Made of cadmium-plated steel or Everdur metal and is much stronger than cast iron hangers for the same purpose.

It is easily and quickly put in place, so open wiring, conduit and cable may be run with greater rapidity and be more compactly arranged than by the use of other hangers.

For voltages above 550 volts the hanger should be used with insulated bushings.

No.	*Steel		Everdur		Standard Package
	Per 100	Approx. Wt., Lb. Std. Pkg.	Per 100	Approx. Wt., Lb. Std. Pkg.	
0	\$3.45	5	\$9.00	5 1/4	100
1	3.80	6 1/2	11.00	7 1/4	100
2	5.00	8	15.80	8 3/4	100
2 1/2	5.25	8 3/4	16.50	9 1/2	100
3	5.45	10	17.75	11	100
4	6.75	16	25.25	17 3/4	100
5	7.25	11 3/4	37.00	12 1/2	50
6	8.10	13 1/4	45.00	14 3/4	50

No.	CONDUIT, INCHES		O.D. CONDUIT, IN.		OPENING, IN.	
	Rigid	Thin Wall	Rigid	Thin Wall	Min.	Max.
0	3/8-1/2	1/2	.675-.840	.706	5/8	27/32
1	3/4	3/4	1.050	.922	1 1/16	1 1/16
2	1	1	1.315	1.165	1 1/16	1 11/32
2 1/2	1 1/4	1 1/4	1.660	1.510	1 1/2	1 1/2
3	1 1/2	1 1/2	1.900	1.740	1 11/16	1 11/16
4	1 3/4	1 3/4	2.375	2.225	2 1/32	2 1/32
5	2	2	2.875	2.725	2 1/8	2 1/8
6	2 1/2	2 1/2	3.500	3.350	3	3

*For cadmium-plated.

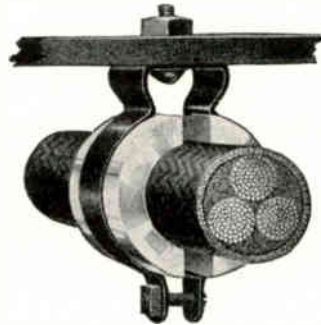
Stove Bolts

Price of hanger does not include the stove bolts. Recommended size of stove bolt is given below.

No. of Hanger	0	1-3	4-6
Size Bolt	inches	3/16x3/4	1/4x3/4

Prices upon application.

Minerallac Porcelain Bushings



Hanger with Bushing

This bushing is designed for high voltage work, properly designed to get the necessary dielectric and mechanical strength.

For use with the Minerallac Hanger of the same catalog number.

Packed 100 in a standard package.

No.	Bushings Only Per 100	OPENING, INCHES		Approx. Wt., Lb. Std. Pkg.
		Min.	Max.	
1	\$6.50	5/16	1/2	8
2	7.00	5/8	27/32	9 1/2
3	10.00	3/8	1 1/16	15
4	11.25	1 1/8	1 1/2	22
5	14.00	1 1/2	1 19/32	49
6	15.25	1 13/16	2 1/8	60

R & S Cable Supports

Standard Conduit Type

A compact, strong and easily installed device for supporting cables in conduit risers.

Support consists of a threaded collar, not much larger in diameter than the outlet bushing which it replaces at the end of the conduit inside of the pull box. It has a set of inserts for one or more cables as required and individual tapered cable grips. They are suitable alike for lead, paper or braid-covered cables.

In installing, the collar is screwed on to end of riser, in lieu of a bushing, the cables are then pulled, the inserts dropped into socket of collar and the split, tapered grip bushings placed over the individual cables, which are now allowed to pull the grips into place by their

own weight. A perceptible slack of cable should be provided between supports to allow for expansion and contraction.

Made of galvanized iron, with hard fiber cable grips.

When ordering, be sure to state exact outside diameter of cable over insulation. Size of conductor is not sufficient information.



No.	Each	Size Conduit Inches	No. of Cables	DIMENSIONS INCHES		*Max. Cable Inches	Approx. Wt. Lb.
				A	B		
1801	\$1.80	1	1	1 11/16	1 5/8	7/8	1/2
1802	1.80	1	2	1 11/16	1 5/8	3/8	1/2
1803	1.80	1	3	1 11/16	1 5/8	3/8	1/2
1804	1.80	1	4	1 11/16	1 5/8	5/16	1/2
1811	1.80	1 1/4	1	2 1/4	1 7/8	1	3/4
1812	1.80	1 1/4	2	2 1/4	1 7/8	1 1/2	1 1/4
1813	1.80	1 1/4	3	2 1/4	1 7/8	1 1/2	1 1/4
1814	1.80	1 1/4	4	2 1/4	1 7/8	1 1/2	1 1/4
1821	2.20	1 1/2	1	2 3/8	1 7/8	1 1/4	1
1822	2.20	1 1/2	2	2 3/8	1 7/8	1 1/2	1 3/4
1823	2.20	1 1/2	3	2 3/8	1 7/8	1 1/2	1 3/4
1824	2.20	1 1/2	4	2 3/8	1 7/8	3/8	1 3/4
1831	3.25	2	1	2 7/8	2 1/4	1 3/4	2
1832	3.25	2	2	3 3/16	2 1/4	2 1/2	3 3/4
1833	3.25	2	3	3 3/16	2 1/4	2 1/2	3 3/4
1834	3.25	2	4	3 3/16	2 1/4	9/16	4
1841	3.65	2 1/2	1	3 7/16	3 3/16	2	2 1/4
1842	3.65	2 1/2	2	3 3/4	2 3/4	7/8	4
1843	3.65	2 1/2	3	3 3/4	2 3/4	2 1/2	4
1844	3.65	2 1/2	4	3 3/4	2 3/4	2 1/2	4 1/4
1851	4.80	3	1	4 1/4	3 3/4	2 3/4	4 1/4
1852	4.80	3	2	4 9/16	3	1 1/16	6
1853	4.80	3	3	4 9/16	3	1	6
1854	4.80	3	4	4 9/16	3	15/16	6
1862	6.50	3 1/2	2	5 1/16	3 7/16	1 7/8	8 1/2
1863	6.50	3 1/2	3	5 1/16	3 7/16	1 3/16	8 3/4
1864	6.50	3 1/2	4	5 1/16	3 7/16	1 1/2	9
1872	8.10	4	2	5 5/8	3 3/4	1 1/2	9
1873	8.10	4	3	5 5/8	3 3/4	1 5/8	9 1/2
1874	8.10	4	4	5 5/8	3 3/4	1 3/4	9 1/2
1876	12.00	4 1/2	2	6 3/8	3 13/16	1 3/4	13 1/2
1877	12.00	4 1/2	3	6 3/8	3 13/16	1 1/2	13 1/2
1878	12.00	4 1/2	4	6 3/8	3 13/16	1 1/2	13 1/2
1887	15.00	5	2	7 1/4	4 1/8	1 7/8	22
1888	15.00	5	3	7 1/4	4 1/8	1 5/8	22
1889	15.00	5	4	7 1/4	4 1/8	1 1/2	22
1897	45.00	6	2	8 1/4	4 1/2	2 1/4	31
1898	45.00	6	3	8 1/4	4 1/2	2	31
1899	45.00	6	4	8 1/4	4 1/2	1 11/16	31

*Maximum diameter of cable over insulation.

Special Tile Duct Type

Made on special order only. Used to support risers run through tile duct. Can be furnished in any number of gangs. Prices and full information upon application.

Split Type

Where installations are already in use, and the necessity of a support for the cables occurs, it is possible to utilize this type of support without the necessity of disconnecting and pulling out the cable risers. This split type can be installed around the cable and the necessary inserts and bushings as used on the conduit type inserted. The range of sizes is the same as on the conduit type.

Prices and full information upon application.

Ideal Fish Tape Reels and Pullers



Three tools in one: a reel, a puller and a tape. Tape is pulled through the conduit and reeled in one operation; reel automatically locks tape in place. By keeping the tape reeled up, it is prevented from spreading all over the job, avoiding breakage and the possibility of tape contacting live parts.

No.	Each	O.D. Inches	Length Feet	Tape Size Inches	Ship Wt. Lb.	Max. Cap. Ft.	For 50 Ft. of Tape, Add
00 Handy	\$1.87	7	50	1/8x.045 (3/64)	1 1/2	50	...
0 Junior	3.12	8 1/2	50	1/8x.060 (1/16)	3	50	...
1 Standard	6.25	12	100	1/8x.060 (1/16)	6	250	\$.94
2 Standard	6.88	12	100	3/16x.060 (1/16)	7	150	1.19
3 Standard	7.50	12	100	1/4x.060 (1/16)	9	100	...
4 Standard	6.25	12	100	1/8x.030 (1/32)	5	400	.75
5 Standard	6.25	12	100	3/16x.030 (1/32)	6	300	.94
6 Standard	6.25	12	100	1/4x.030 (1/32)	6	250	.94

Ideal Fish Tapes

Ideal Fish Tape is made of the highest grade of tempered spring steel wire—no curling. Tape is flexible and easy to use on long runs of conduit having several bends.

All sizes are available in any length, multiples of 50 feet.

Packed in individual cartons.



No.	Per 100 Ft.	Tape Size Inches
11-T	\$1.46	1/8x.030 (1/32)
12-T	2.13	3/16x.030 (1/32)
13-T	2.13	1/4x.030 (1/32)
14-T	2.13	1/8x.060 (1/16)
15-T	2.66	3/16x.060 (1/16)
16-T	3.25	1/4x.060 (1/16)

Tempered Steel Fish Tapes



Regularly furnished a ny assortment of lengths, from 100 to 500 feet, put up in coils. If wire is desired in continuous lengths of 2000 feet or over it will be furnished on reels when specified.

Cat. No.	Size Inches	Weight per 1000 Feet Pounds	Price per 100 Feet
1000	1/8x.060	24	\$3.00
1001	3/16x.060	35	4.00
1002	1/4x.060	46	5.00
1003	1/8x.030	13	2.50
1004	3/16x.030	19	3.00
1005	1/4x.030	25	3.50

T & B Hickeys

For Thinwall Conduit (E.M.T.)



Makes bends of any desired radius. To insure against kinking tubing, not more than 10° should be pulled at a time. Radius of bend depends on how much hickey is allowed to slip back on tubing between pulls.

No.	Each	Size, In.	Std. Pkg.	Wt., Lb.
4185	\$2.50	1/2	1	2
4186	3.00	3/4	1	3.5
4187	5.00	1	1	5

T & B Lakin Conduit Hickeys



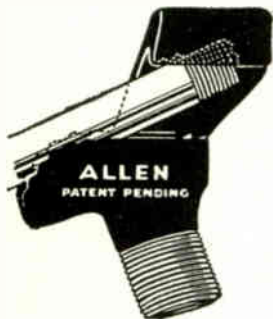
The shank has a bushed hole into which the end of the conduit enters when a short bend is made at its end or a bend is to be worked down.

The bushed opening in the shank fits snugly over the end of the conduit and protects the threads.

This hickey will not slip on the conduit while a bend is being made. It enables a workman to make bends having different curvatures. It will not kink the pipe when making the shortest practical bends. Made of malleable iron. Japanned finish. No. 336 can be used to bend 1/2-inch pipe.

Cat. No.	Each	Size Pipe Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100
335	\$1.75	1/2	1	10	190
336	2.25	3/4	1	10	220
337	3.25	1	1	2	520

Allen Improved Pipe Benders

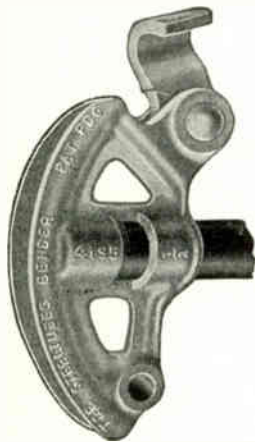


This bender is made of high test steel. Has tempered case hardened teeth which grip in all positions. Has solid jaws, no adjustments; 2-in-1 design with V receiving groove to prevent any contact on inner part of curve, thus preventing mashing, crushing or deforming the pipe. It will bend anything tubular or solid that can be bent cold.

In 2 sizes: Combination of 1/4 to 3/4 inch inclusive, combination of 3/4 to 1 1/4 inclusive. Side opening. Individually boxed.

No. 1 packed 10 boxes in standard package, No. 2 packed 5 in a standard package.
 Price, No. 1, Sizes 1/4 to 3/4 Inch.....each \$6.20
 Price, No. 2, Sizes 3/4 to 1 1/4 Inches.....each 9.00

Benders For Thinwall Conduit



This bender will also bend standard conduit; 1/2-inch bender will bend 1/2 and 3/8-inch tubing or 3/8-inch conduit; 3/4-inch will bend 3/4-inch tubing or 1/2-inch conduit; 1-inch will bend 1-inch tubing or 3/4-inch conduit.

Cat. No.	Each	Size Inches	Std. Pkg.	Car. ton	Std. Pkg.	Wt. Lbs.
4195	\$2.50	1/2, 3/8	10	2	25	
4196	3.90	3/4	10	1	42	
4197	5.95	1	2	1	14	
*4192	62.50	1/2, 3/4, 1	1	1	68	

*No. 4192 is a combination bench bender for 1/2, 3/4 and 1-inch thinwall conduit.

Steeltubes Hickeys



An excellent tool for stubbing-up in concrete work and for making short or close bends.

Makes bends of any desired radius. To insure against kinking, the tube should be inched through, not more than 10 degrees being pulled at a time.

Standard package, 1.

No.	2195	2196	2197	2198	2199	2200
Each	\$1.50	1.88	3.75	5.00	6.00	7.20
Size	1/2	3/4	1	1 1/4	1 1/2	2
Size Pipe Handle to Use	3/4	1	1	1 1/4	1 1/4	1 1/2
Weight Each	1 3/4	2 3/4	4	10	12 1/2	15

Greenlee Improved Hydraulic Benders For Rigid Conduit and Pipe



Readily portable. Does bending with conduit in horizontal position, doing away with interference with the floor. Almost no limit to degree of bend that can be made.

No. 770 will develop a piston pressure of 50000 pounds, and will bend conduit, 1/4, 1/2, 2, 2 1/2 and 3-inch; standard pipe up to 3-inch; extra strong pipe up to 2 1/2-inch; double extra strong pipe up to 2-inch and solid bars up to 2 1/2-inch.

No. 775 will develop a piston pressure of 80000 pounds and will bend conduit 2 1/2, 3, 3 1/2, 4 and 4 1/2-inch; standard pipe up to 4 1/2-inch; extra strong pipe up to 4-inch; double extra strong pipe up to 3-inch and solid bars up to 3 1/2-inch. Also valuable for straightening pipe and solid bars.

Has safety valve which blows at 50000 pounds piston pressure on No. 770 and 80000 pounds on No. 775.

No.	770	775
Each	\$170.00	235.00
Weight without Shoes	118	200
Weight Set of Shoes with Box	48	130

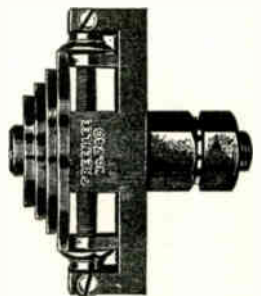
No. 740 Greenlee Knockout Cutters

The Greenlee Knockout Cutter will enlarge holes in metal up to 1/8-inch thick in 1 1/2 minutes or less per hole. Enlarging is done by cutting, the power being applied by screw action. Cutters are mounted in the body of the tool and are always rigid.

One complete cutter comes packed in a leather case and includes four metal discs for cutting 1 1/8, 2 3/8, 2 7/8, and 3 1/2-inch holes to fit 1 1/2, 2, 2 1/2, and 3-inch conduit.

All parts are made from high grade tool steel, carefully heat treated and ground for size and clearance.

Weight, 4 pounds 8 ounces.
 No. 740.....each \$15.00



Greenlee Knockout Punches



The Greenlee Knockout punch will enlarge holes in metal boxes up to 10 gauge in one minute per hole, doing away with drilling, reaming, and filing. Cutting is done by a 2-point punch, driven by screw action through the metal into a die of proper size.

The No. 735 consists of four punches to cut 7/8, 1 1/8, 1 1/2, and 1 3/4-inch holes to fit 1/2, 3/4, 1, and 1 1/4-inch conduit. The No. 737 consists of two punches to cut 1 1/8 and 2 3/8-inch holes to fit 1 1/2 and 2-inch conduit.

Packed in a leather case. Weight No. 735, complete in case, 2 pounds 12 ounces; No. 737, 4 pounds 4 ounces.

No. 735.....	each \$10.00
No. 737.....	each 10.00

Nye Conduit Solid Dies



Square

Skip-tooth dies made especially for threading conduit pipe.

Produces the proper thread adopted and standardized by the Conduit Manufacturers Association.



Round

Square Dies

Die block, 2½x2½ inches.

½, ¾ and 1-Inch Size..... each \$3.00

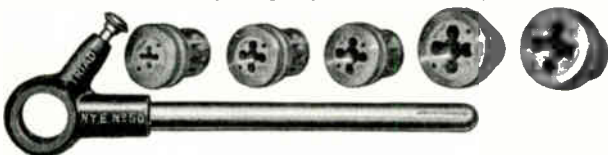
Round Dies

For Triad stocks.

½ and ¾-Inch Size..... each \$3.86
1 and 1¼-Inch Size..... each 4.20

Nye Triad Ratchet Die Stocks

No. 50 Capacity, ½ to ¾-Inch Pipe
No. 60 Capacity, ½ to 1¼-Inch Pipe

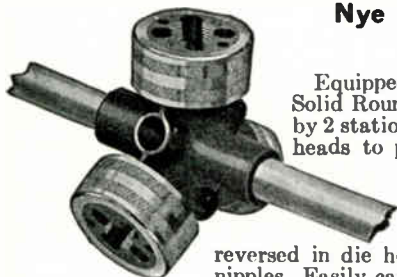


Stocks are made of malleable iron; die heads of steel; and solid round dies of finest grade of tool steel, held in place by two stationary pins built in die heads.

Description	No. 50			No. 60		
	Size In.	Dies Each	Wt. Lb.	Size In.	Dies Each	Wt. Lb.
Triad Stock with Dies.....	½-¾	\$24.70	10¾	½-1¼	\$24.20	16¾
Triad Stock with Dies.....	¾-¾	17.00	8½	¾-1¼	29.16	18¾
Triad Stock with Dies.....				1-1¼	39.06	22¾
Triad Dies Only.....	½-¾	3.30	¾	½-¾	3.30	¾
*Triad Dies Only.....	½-¾	3.86	¾	½-¾	3.86	¾
*Triad Dies Only.....				1	4.20	¾
*Triad Dies Only.....				1¼	4.20	1½
Triad Ratchet with Hdle.....		3.86	4½		5.60	6½
Triad Ratchet Only.....		3.30	1½		4.70	1¾
Triad Ratchet Handle.....		.56	1½		.92	2½
Triad Die Heads Complete.....	½-¾	4.00	1¾	½-1	5.04	2½
Triad Die Heads Complete.....	½-¾	4.68	1¾	1¼	5.04	3½
Handy Carrying Rack.....	½-¾	1.00	1¼	¾-1¼	1.80	4

*Can be furnished, if specified, for threading conduit.

Nye Triad 3-Way Stocks



Equipped with Nye Triad Solid Round Dies, held in place by 2 stationary pins built in die heads to prevent turning; locked in by threaded die head cap, easily removed. Dies may be reversed in die holder to thread close nipples. Easily carried in kit. Weight, 6 pounds.

Size Dies..... inches ¾ to ¾ ½ to 1
Complete with Dies..... each \$12.00 13.52

Extra Dies

Size..... inch ¾ ½ to ¾ 1
Each..... \$3.30 3.86 4.20

Nye Pipe Threading Oil

An excellent coolant and good penetrant, suitable for hand and power operated tools. Plus Federal Tax.

	Dark	Clear
1-Pint Can..... per can	\$.62	\$.66
1-Gallon Can..... per gallon	2.20	2.40
5-Gallon Can..... per gallon	2.00	2.20
30-Gallon Drum..... per gallon	1.82	2.02
50-55-Gallon Drum..... per gallon	1.62	1.82



Nye Triplex Solid Die Stocks



A light weight, sturdy one-piece combination 3-way stock, made of malleable iron.

Has large openings in body, which allows amply for oiling and for chip clearance.

Die changed by loosening screws so that plate may be tilted enough to permit die to slide out.

Stock has permanently fixed steel guides.

Shipping weight complete with dies, 11 pounds.

Complete with No. 1 Skip Tooth Dies, ¾, ½ and ¼-Inch..... each \$15.00
Complete with No. 1 Skip Tooth Dies, ½, ¾ and 1-Inch..... each 15.00
Extra Dies, 2½x2½-Inch Block Size..... each 3.00

Nye Receding Die Stocks

Capacity, 1 to 2-Inch Pipe



No. 1

Set consists of stock handles, guides and set of 1 to 2-inch dies. Stock of malleable iron; dies of finest grade tool steel.

Handles plated. Adjustable guides machined inside and out and have pipe size marked on them. Has adaptor to hold 2½x2½-inch dies, furnished as an extra.

Made in Briggs (American) and Whitworth (English) standards, right hand. American Standard furnished unless otherwise specified.

No. 1

	each	\$24.00	25¼	Ship. Wt., Lb.
No. 1, Complete Set, 1 to 2-In. Dies.....	each	\$24.00	25¼	
Complete Set Right-Hand Dies.....	each	10.00	1½	
1-Inch Right-Hand Dies.....	per set	2.50	¾	
1¼-Inch Right-Hand Dies.....	per set	2.50	¾	
1½-Inch Right-Hand Dies.....	per set	2.50	*5½	
2-Inch Right-Hand Dies.....	per set	2.50	¾	

No. 1A



No. 1 A

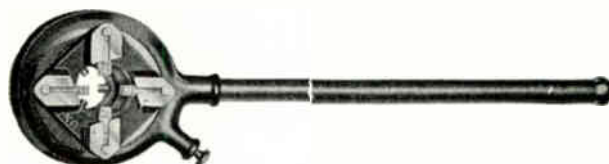
Similar to No. 1, but is equipped with a ratchet. Can be used as an ordinary stock with 2 handles when desired.

Ratchet feature makes tool desirable for threading pipe where space is limited.

No. 1A, Complete Set, 1 to 2-In. Dies.....	each	\$30.00	30	
Complete Set Right-Hand Dies.....	each	10.00	1½	
1-Inch Right Hand Dies.....	per set	2.50	¾	
1¼-Inch Right-Hand Dies.....	per set	2.50	¾	
1½-Inch Right-Hand Dies.....	per set	2.50	*5½	
2-Inch Right-Hand Dies.....	per set	2.50	¾	

*Ounces.

No. 1R Nye Ratchet Receding Die Stocks

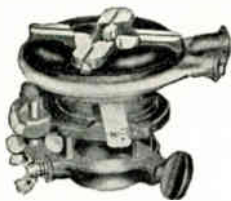


A light, one-man stock. Long handle is equipped with safety knob giving ample leverage for threading with a minimum of effort.

No. 1R, Complete with Bushings and 1, 1¼, 1½ and 2-Inch Dies; Shipping Weight, 21½ Pounds... each \$20.00
1, 1¼, 1½-Inch Chasers, 4 Segments to a Set of Each Size..... per set 2.50
2-Inch Chasers, 4 Segments to a Set..... per set 2.50

Beaver Cam-Type Fully-Adjustable Pipe Threaders

Threads 1 to 2 Inch—1 Set of Dies



This medium-weight cam-type tool, using one set of dies to thread 1 to 2-inch pipe, inclusive, is fully-adjustable to cut as much over or under size as desired. Available with a choice of two different centering devices.

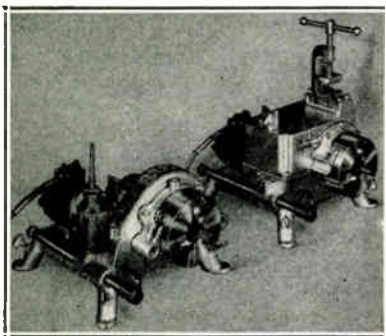
Straight-line pull; ratchet drive ring on die head in same plane as dies; easier cutting and less wear. Dies on top for easy oiling and chip clearance. Twin recession posts insure smooth die recession and proper thread taper.

Cuts uniform threads, close nipples, including 2-inch. Air-furnace malleable iron. Vanadium alloy steel dies. Standard pipe handle. Painted black enamel with orange trim.

Packed in individual fibreboard boxes.

Description	No.	Each	Ratchet (1-Handle)	
			Shp.	Wt. Lb.
With Grooved Bolt and Washer.....	12-R	\$13.50	24	
With Universal Chuck.....	13-R	15.00	26 $\frac{3}{4}$	
Extra Dies, Size, 1, 1 $\frac{1}{4}$, 1 $\frac{1}{2}$ or 2-Inch Standard, Shp. Wt., $\frac{1}{2}$ Lb.....		per set		\$1.50
Brass or Cast Iron Pipe Dies, Shp. Wt., $\frac{1}{2}$ pound.....		per set		2.00
Extra Grip Screws, Shp. Wt., $\frac{1}{8}$ pound.....		each		.10

Model C Beaver Power Units



Model C is a sturdy power unit for bench use which makes machines of hand tools. Model C-2 is recommended if a pipe vise is required. Where a pipe vise is unnecessary, Model C-1 will be more convenient to use because the pipe vise on Model C-2 prevents complete rotation of the chuck wrench.

A Cushman all-steel universal geared chuck holds pipe from $\frac{1}{8}$ to 2 inches and bolts $\frac{1}{4}$ inch and larger. Machine is equipped with an automatic safety chuck wrench ejector, chuck wrench holder, and a safety latch. Gears are fully enclosed; the main driving gear revolves through an oil bath. Chuck is opened and closed by turning a chuck wrench, and chuck remains stationary—this relieves the gears of severe strain. Model C also has an outboard pipe support and anti-friction bearings.

Black & Decker universal motor, $\frac{1}{2}$ hp. nominal rating (actual developed power, 1.59 hp.). Motor will operate on either a.c. or d.c. current, 25 to 60 cycles. Choice of 110 or 220-volt motor; specify when ordering.

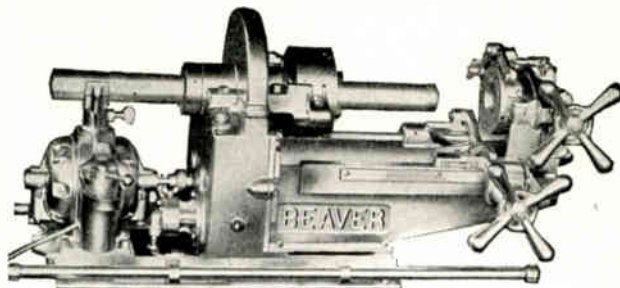
Base, 18x18 inches; height, 12 $\frac{1}{2}$ inches. Base dimensions, mounted on legs, 42x46 inches.

Model C-1 Left, No Provision for Vise; Net Weight 140 Pounds; Shipping Weight, 167 Pounds...each **\$125.00**
 Model C-2 Right, without Vise; Net Weight, 166 Pounds; Shipping Weight, 193 Pounds...each **127.50**

Accessories

Galvanized Legs, Front Feet, Rear Spikes...per set **\$5.50**
 Pipe Vise, $\frac{1}{8}$ to 2-Inch...each **3.50**
 Pipe Bender, $\frac{1}{8}$ to $\frac{3}{4}$ -Inch...each **1.50**

Beaver Pipe and Bolt Machines
 Capacity, $\frac{1}{8}$ to 2 In. Pipe; $\frac{1}{4}$ to 2 In. Bolts
 2 $\frac{1}{2}$ to 12 In. with Shaft and Geared Tools



Model A.—Heavy-duty deluxe machine. Weight, 415 pounds,

Model B.—A highly efficient, lighter-weight, lower-priced machine combining same features and using same accessory equipment. Approximate weight, 280 pounds.

Furnished with either wheel and roller cutoff ($\frac{1}{8}$ to 2 inches), or knife cutoff ($\frac{1}{4}$ to 2 inches). Wheel cutter will cut off $\frac{3}{8}$ to 1 inch bolts. Knife cutter will not cut off bolts.

The automatic-feed knife cutoff, interchangeable with the wheel cutter by removing one set screw, is preferable for cutting soft electric conduit and is necessary for beveling pipe for welding and for grooving pipe for Victaulic joints.

The wheel cutter is simple, fast, and foolproof. A single cutting wheel often gives months of service.

Right hand operation; all controls in front; 50% more open working space than similar machines. Standard all-steel 3-jaw universal scroll chuck, automatic chuck wrench ejector. Rack and pinion feed. Outboard pipe support which stops the whip of long lengths of pipe. Die heads are adjustable for cutting standard, oversize, or undersize threads and are of the solid ring type without hinge to become fouled with chips. Reversible oil pump easily accessible. Has 8-fluted alloy tool-steel cone reamer. Interchangeable die segments. Sliding handle bars for easy portability. Steel iron housings.

Complete, less cutting and threading equipment which is to be specified as desired. Choice of 110 or 220-volt universal motor. Special motors; prices upon application.

Model A, with 1 Gallon Beaver Threading Oil...each **\$265.00**
Model B, with 1 Gallon Beaver Threading Oil...each **205.00**

Pipe Cutting Equipment

Wheel and Roller Cutoff Unit (Pipe & Bolts)...each **\$15.00**
 Automatic Knife Cutoff Unit (Pipe Only)...each **25.00**

Pipe Threading Equipment

3 Self-Contained Adjustable Die Heads and Dies to Thread $\frac{1}{2}$ to 2-Inch Pipe without Changing Dies...**\$60.00**
 4 Self-Contained Die Heads as Above to Thread $\frac{1}{4}$ to 2-Inch Pipe...**80.00**
 5 Self-Contained Die Heads as Above to Thread $\frac{1}{8}$ to 2-Inch Pipe...**100.00**
 1 Universal Adj. Opening Die Head and Dies to Thread $\frac{1}{2}$ to 2-Inch Pipe by Changing Dies...**29.50**
 Same as Above with Dies to Thread $\frac{1}{4}$ to 2-Inch Pipe...**33.50**
 Same as Above with Dies to Thread $\frac{1}{8}$ to 2-Inch Pipe...**37.50**
 Solid Non-Adjustable Die Heads with Dies, $\frac{1}{8}$ to 2-Inch...each **5.00**

Quick-Release Type Nipple Chuck

With $\frac{1}{2}$ to 2-Inch Adapters...each **\$20.00**
 With $\frac{1}{8}$ to 2-Inch Adapters...each **24.50**
 Adapters, Any Size, $\frac{1}{8}$ to 2-Inch...each **1.50**

Bolt Threading Equipment

Quick-Opening Fully-Adj. Die Head for All Sizes of Bolt Dies $\frac{1}{4}$ to 2-Inch...each **\$16.00**
 Bolt Dies, USS, RH, Segmental Type for Above Die Head:
 Sizes $\frac{1}{4}$ to 1-In. by 16ths; Specify Sizes...per set **\$4.00**
 Sizes $\frac{1}{8}$ to 2-In. by 8ths; Specify Sizes...per set **6.00**

Portable Stands

Enclosed Stand, with 17-inch Steel Wheels:
 For Model A...each **\$22.50**
 For Model B...each **25.00**
 Rubber-Tired Wheels, Extra...**5.00**

Drive Shaft

For Operating Geared Tools 2 $\frac{1}{2}$ to 12 Inches...each **\$20.00**

Nye Self-Locking Pipe Vises



Will hold iron or brass pipe or plated tubing, also short nipples without danger of marring.

The jaws have one piece in upper and one piece in lower, assuring perfect contact with pipe for full length of jaws, thus eliminating any possibility of bending the smaller sizes of pipe, a trouble frequently experienced with the type jaws having two sections to the lower portion.

No.	Each	Capacity Inches	No.	Each	Capacity Inches
700	\$3.60	1/8 to 1 1/2	72	\$7.50	1/2 to 3 1/2
70	4.25	1/8 to 2	73	11.00	1/2 to 4 1/2
71	5.00	1/8 to 2 1/2	..	.....	.....

Nye Chain Vises



A handy and dependable, one-piece malleable iron vise.

For use by the plumber, steamfitter and electrician.

Has long full-grip jaws and clamping handle located above the base.

No. 61 has the added feature of a pipe rest and bender.

No.	Each	Capacity Inches	No.	Each	Capacity Inches
61	\$7.00	1/8-2 1/2	52	15.00	1/4-4
53	27.00	1/4-6			
Shipping Weight.....		pounds	8 1/2	15	23

Nye Champion Combination Vises and Stands



This portable folding combination vise and 3-legged stand is made of malleable iron. Designed for those who require light weight equipment.

Base of the vise is cast integral with the stand, thus cutting down weight.

Vise capacity, 1/8 to 2 1/2 inches. Has long full-grip jaws, pipe rest and bender.

Extra heavy chain furnished for locking legs when folded. Weight, 42 pounds.

Complete, with Legs.....each \$16.00

Beaver Threading Oil For Hand Tools and Threading Machines



A sulphur-base threading oil (high in heat-absorbing properties) that both cools and lubricates. Improper oil causes overheating, chipped dies and bad threads.

Size Can	gals.	1	5	15	30	55
Each.....		\$1.10	5.50	15.00	30.00	55.00
Ship. Wt....	lbs.	9	41	128	255	500

Saunders Type Pipe Cutters



Has one wheel and two rollers.

For use only where cutter can be revolved entirely around pipe.

No.	1S	2S	3S	4S	5S	
Complete.....	each	\$3.00	\$4.50	\$7.50	\$15.00	\$22.50
Wheels.....	each	.50	.60	1.10	1.10	1.10
Rollers.....	per doz.	2.88	3.84	6.00	6.00	7.20
Pins.....	per doz.	1.20	1.20	1.80	1.80	1.80
Blocks and Wheels...	each	1.25	1.75	2.75	3.50	4.00
Cuts Pipe.....	inches	1/8-1	1-2	2-3	2 1/2-4	4-6
Weight.....	pounds	3	6 1/4	11 3/4	15	23

Beaver Square-End Pipe Cutters

No. 1, 1/8 to 1 Inch

No. 5, 1/2 to 2 Inch



For cutting, grooving or beveling pipe.

This pipe cutter cuts like a lathe tool, each turn removing a thin shaving until the pipe is severed. Leaves no burr to be reamed or filed, or to reduce the capacity of the pipe, and threading dies start easily and with less wear.

No.	1	5	
Complete.....	each	\$13.50	\$15.00
Extra Cutting Knives.....	per set	.80	1.00
Grooving or Beveling Knives.....	per set	.....	2.00
Shipping Weight.....	pounds	8 1/2	14

Nye Tube Cutters with Rollers



No. 20

Used by plumbers, refrigerator repair men, and automobile mechanics for cutting copper, brass, and lead tubing.

Roller reduces friction to the extent that tubing is not marred or torn during cutting operation. Wheel with finely ground edge leaves a slight burr, easily removed by reamer.

No. 30 is equipped with burr scraper instead of reamer.

No.	10	20	30	
Each.....	\$2.00	2.50	4.00	
O.D.....	inches	3/16-3/4	1/2-1 3/8	1 to 2 1/8
Extra Wheels, All Cutters.....	each	\$4.00		

Nye Spiral Fluted Bit Brace Reamers



This reamer is made with a tapered shank to fit any standard bit brace. Spiral flutes give a shearing action, assuring operator of a clean and satisfactory job.

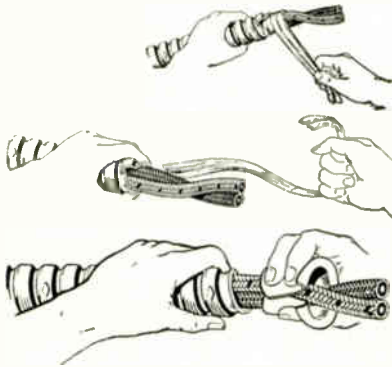
Made of high grade tool steel, drop forged.

No.	Each	Capacity Inches	Shipping Weight Pounds
42	\$1.25	1/8 to 1	5/16
42 1/2	1.50	1/8 to 1 1/4	3/8
44	3.00	1/4 to 2	1 3/8

National A.B.C. Armored Bushed Cable



National A.B.C. Cable with Anti-Short bushing has a moisture-proofed wrapping of Kraft over conductors. Stripping conductors for terminals, Kraft unwinds quickly without use of sharp tools next to conductors, can be broken off by hand, and allows space inside steel for Anti-Short bushing.

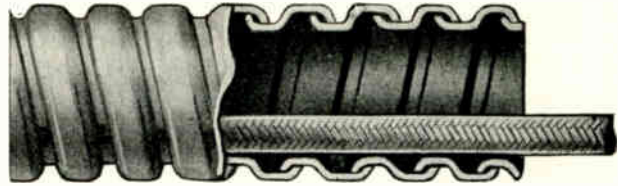


Kraft armor strips with a pull—no possible injury to conductors—reduces labor.

Kraft armor unwinds below steel, providing space for Anti-Short bushing.

Anti-Short Bushing lays over conductors from the side—a squeeze inserts it inside steel.

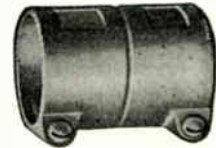
National Flexsteel Flexible Steel Conduit



The steel armor of Flexsteel (E.+S.+S.) flexible metallic conduit is of bondhook construction which enables it to be flexed more readily than other types of this material.

Size In.	Per 1000 Feet	Ft. per Std. Coil	Approx. Wt. Lb. per 1000 Ft.	Size In.	Per 1000 Feet	Ft. per Std. Coil	Approx. Wt. Lb. per 1000 Ft.
5/16	\$51.00	250	150	1 1/4	\$300.00	50	1250
3/8	63.00	250	255	1 1/2	380.00	25	1620
1/2	89.00	100	470	2	488.00	25	2125
3/4	113.00	50	575	2 1/2	575.00	25	2630
1	239.00	50	1020	3	770.00	25	3130

National Conduit Couplings Tangent Set Screw Type



For flexible steel conduit. Sherardized finish. Packed 100 in standard package.

No.	2182	2184
Per 100.....	\$31.62	\$39.88
Open I.D. inches	1 1/2	6 1/4
Closed I.D. inches	7/16	1 3/16
For Conduit inches	5/16	1 1/2
No. in Carton.....	25	10
Weight per Std. Pkg..... pounds	7	24

Solid Wires			
Duplex Conductors			
Size B. & S. Gage	Per 1000 Feet	Feet per Coil	Approx. No. of Bushings per 1000 Feet
*14	\$50.00	250	35
*12	66.00	250	35
10	109.00	250	35
8	160.00	150	20
Triplex Conductors			
*14	\$67.00	250	35
12	87.00	250	35
10	138.00	250	35
8	206.00	150	20
Four Conductors			
14	\$122.00	250	35
12	164.00	250	35
10	200.00	150	20
Single Conductor			
14	\$72.00	250	35
12	78.00	250	35
10	84.00	250	35
8	80.00	250	35
6	100.00	250	35

Stranded Wires			
Duplex Conductors			
Size B. & S. Gage	Per 1000 Feet	Feet per Coil	Approx. No. of Bushings per 1000 Feet
8	\$180.00	150	20
6	259.00	100	16
4	404.00	100	16
2	436.00	100	16
Triplex Conductors			
8	\$222.00	150	20
6	292.00	100	16
4	536.00	100	16
2	564.00	100	16
Four Conductors			
8	\$292.00	100	16
6	396.00	100	16
4	600.00	100	16
Single Conductor			
10	\$90.00	250	35
8	98.00	250	35
6	135.00	250	35
4	212.00	250	35
2	248.00	250	35
1	278.00	100	16

*Can be furnished in coil lengths 100, 50, 25, and 15 feet.

National A.B.C. Armored Lampcord Plain

Twisted Conductors			
Size B. & S. Gage	Per 1000 Feet	Feet per Coil	Approx. No. of Bushings per 1000 Feet
18	\$75.00	250	16
16	86.00	250	16
14	112.00	250	16

National Armored Leaded Cable

Solid Wires			
Duplex Conductors			
Size B. & S. Gage	Per 1000 Feet	Feet per Coil	Approx. No. of Bushings per 1000 Feet
14	\$119.00	150	..
12	144.00	150	..
10	180.00	100	..
Triplex Conductors			
14	\$164.00	150	..
12	197.00	150	..
10	232.00	100	..

National Armored Leaded Cable

Stranded Wires			
Duplex Conductors			
Size B. & S. Gage	Per 1000 Feet	Feet per Coil	Approx. No. of Bushings per 1000 Feet
8	\$250.00	100	..
6	342.00	100	..
Triplex Conductors			
8	\$356.00	100	..
6	480.00	100	..
4	652.00	100	..
Four Conductors			
14	\$275.00	150	..

No. 2190 National Rigid Conduit to Flexible Conduit Connectors



Tangent Screw Type
For 1/2-inch conduit. Sherardized finish. Open I.D., 1 1/8 inch; closed I.D., 5/8 inch.
Packed 50 in std. pkg.; 10 in carton.
Weight per standard package, 11 pounds.
No. 2190.....per 100 \$25.42

No. 2193-S National Rigid Conduit to Flexible Conduit Connectors



Squeeze Type
For 1 1/4-inch conduit. Sherardized finish. Open I.D., 1 3/4 inches; closed I.D., 1 1/2 inches.
Packed 25 in std. pkg.; 5 in carton.
Weight per standard package, 15 lb.
No. 2193-S.....per 100 \$60.50



National Peepole 90° Angle Box Connectors

For Armored Cable and Flexible Conduit

Open back is separate from the cable clamp proper. Peepholes are patented. Sherardized finish. Furnished with bondnuts.

No.	Per 100	I.D. Open	In. Closed	Wire Throat In.	Knock-out In.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
2210-EZ	\$18.24	4 1/4	1 1/2	1 5/8	1 1/2	20	100	18
Holds 14-2, 14-3, 12-2, 4-1 armored cable; 6-1 armored lead cable; 14-2, 14-3 plain lamp cord; 3/8-inch flexible conduit.								
2210X-EZ	\$18.24	1 1/8	3 5/8	1 7/8	1 1/2	20	100	20
Holds 14-4, 12-3, 10-2, 10-3 armored cable; 14-2, 14-3, 4-1 armored lead cable.								
2213X-EZ	\$25.46	7/8	1 1/8	3 3/4	1 1/2	20	100	23
Holds 12-4, 10-4, 8-2 armored cable; 14-4, 12-3, 10-2, 10-3 armored lead cable.								
2211-EZ	\$25.46	1 5/8	4 7/8	4 1/4	1 1/2	20	100	24
Holds 8-3 armored cable; 12-4, 10-2, 10-4, 8-2 armored lead cable; 1/2-inch flexible conduit.								
2214-EZ	\$43.14	1 3/8	1 3/8	2 7/8	3/4	10	50	16
Holds 6-3, 6-4, 4-3 armored cable; 8-4, 6-2, 6-3 armored lead cable; 3/4-inch flexible conduit.								
2216-EZ	\$65.36	1 1/2	1 3/4	1	1	..	20	12
Holds 2-3 armored cable; 4-4 armored lead cable; 1-inch flexible conduit.								
2218-EZ	\$74.80	1 3/4	1 1/8	1 1/2	1 1/4	..	10	12
Holds 1 1/4-inch flexible conduit.								
2234-EZ	\$108.70	2 1/4	1 3/4	1 1/2	1 1/2	10	10	17
Holds 1 1/2-inch flexible conduit.								
2236-EZ	\$158.96	2 3/4	2 1/4	2	2	5	5	15
Holds 2-inch flexible conduit.								
2238-EZ	\$440.00	3 1/8	2 3/4	2 1/2	2 1/2	5	5	23
Holds 2 1/2-inch flexible conduit.								
2240-EZ	\$585.74	3 1/8	3 1/4	3	3	5	5	34
Holds 3-inch flexible conduit.								

No. 2208-EZ National Peepole 45° Angle Box Connectors

Open Back Type



An open back connector at 45° angle allowing for easy fishing with separate cable clamps.

Fits 14-2, 14-3, 12-2, and 4-1 armored cable; 6-1 armored lead cable; 14-2 and 14-3 plain lampcord; and 3/8-inch flexible conduit.

With Peepoles and Bondnuts. Hinged strap fitting.

Sherardized finish.

Open I.D., 4 1/4 inch; closed I.D., 1/2 inch; wire throat, 1 5/8 inch; K.O. size, 1/2 inch.

Packed 100 in standard package; 20 in carton.

Weight per standard package, 14 pounds.

No. 2208-EZ.....per 100 \$18.20

No. 163 National Peepole Box Connectors

Pitcher Lip Type



Fits 14-2, 14-3, 14-4, 12-2, 12-3, 10-2, and 4-1 armored cable; 6-1 armored lead cable; 14-2 and 14-3 plain lampcord; and 3/8-inch flexible conduit.

With Peepole. No locknut; a simple angle lip inserted in knockout. By tightening screw, strong, firm box connection is formed; perfect ground. Firm holding clamp for cable.

Sherardized finish.

Made from best grade cold rolled open hearth steel.

Open I.D., 4 3/4 inch; closed I.D., 1 1/2 inch; wire throat, 1/2 inch; K.O. size, 1/2 inch.

Weight per standard package, 48 pounds.

No. 163.....per 100 \$3.60

National Peepole Box Connectors EZ Hinged Strap Type



With Peepole and Bondnut. Sherardized finish.

No. 2163-EZ fits 14-2, 14-3, 12-2, 12-3, 10-2, and 4-1 armored cable; 6-1 armored lead cable; 14-2 and 14-3 plain lampcord; and 3/8-inch flexible conduit. It also fits 14-2, 14-3, 12-2, 12-3, and 10-2 loom wire; 14-2 and 12-2 Ovalflex; and 6-1 and 4-1 bare armored ground wire.

No. 2164-EZ fits 14-4, 12-3, 10-2, and 10-3 armored cable; 14-2, 14-3, and 4-1 armored lead cable.

No.	Per 100	Open I.D. inches	Closed I.D. inches	Wire Throat inches	K.O. Size inches	Wt. per Std. Pkg. pounds
2163-EZ	\$6.00	4 1/4	1 1/2	1 5/8	1 1/2	80
2164-EZ	6.00	1 1/8	3 5/8	1 7/8	1 1/2	65

National Peepole Box Connectors EZ Hinged Strap Type



EZ Strap is wide, strong and clamps cable more securely and strongly without contortion of cable. This point is particularly advantageous in use with flexible steel conduit.

Peepole is patented. Sherardized finish.

Furnished with bondnuts.

No.	Per 100	Open I.D. In.	Closed I.D. In.	Wire Throat In.	K.O. In.	Std. Pkg.	Car-ton	Std. Pkg.
2165-EZ	\$10.54	3/4	2 3/4	1 1/2	1 1/2	100	50	13
Fits 12-4 and 10-3 armored cable; 14-2, 14-3, 12-2, and 4-1 armored lead cable.								
2166-EZ	\$10.54	1 5/8	4 7/8	4 1/4	1 1/2	100	25	15
Fits 12-4, 10-3, 10-4, and 8-2 armored lead cable; and 1/2-inch flexible conduit.								
2166X-EZ	\$15.22	1 1/4	5 1/4	4 7/8	3/4	100	25	19
Fits 8-3, 8-4, 6-2, and 6-3 armored cable; 10-4, 8-2, and 8-3 armored lead cable.								
2167-EZ	\$15.22	1 1/8	1 7/8	2 7/8	3/4	100	25	20
Fits 6-3, 6-4, 4-2, and 4-3 armored cable; 8-4, 6-2, and 6-3 armored lead cable; and 3/4-inch flexible conduit.								
2169-EZ	\$24.56	1 1/2	1 3/8	1	1	25	5	10
Fits one-inch flexible conduit.								

No. 2175-EZ National Peepole Box Connectors

Duplex Type



Fits 14-2, 14-3, 12-2, and 4-1 armored cable; and 3/8-inch flexible conduit. For use in taking two armored cables into one 1/2-inch knockout; simply tightening two screws holds the cables firmly and securely in place.

With Peepole and Bondnut; hinged strap fitting.

Sherardized finish.

Open I.D., 4 1/4 inch; closed I.D., 1/2 inch; wire throat, 1 1/2 inch; K.O. size, 1/2 inch.

Packed 100 in a standard package; 20 in carton.

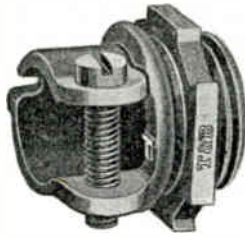
Weight per standard package, 17 pounds.

No. 2175-EZ.....per 100 \$13.00



T & B Squeeze Connectors

Malleable Iron—Galvanized
For Flexible Steel Conduit and Armored Conductors



Locknuts are furnished with connectors without charge. Nos. 250 and 252 have 3/8-inch (pipe size) threaded ends to fit standard sockets.

Nos. 250 and 250A hold 14D solid s.s., 12D solid s.s., 10D solid s.s., 8D solid s.s., 14D solid d.s., 8D solid d.s., 16E s.s., 18E s.s., 16E d.s. and 18E d.s. conductors.

Approved by Underwriters Laboratories.

No.	Per 100	Size In.	Size K.O. In.	Open I.D. In.	Closed I.D. In.	Throat Bushed Diam. In.	Unit Pkg.	Std. Pkg.	Wt. per 100 Lb.
250	\$11.00	1/4	3/8	15/32	3/8	5/16	100	100	4
*250A	12.50	1/4	1/2	15/32	11/32	3/8	50	100	6

Nos. 252 and 252A hold 3/16-inch s.s. and d.s. conduit.

252	\$11.00	5/16	3/8	17/32	1/16	3/8	100	100	4
*252A	12.50	5/16	1/2	17/32	1/16	3/8	50	100	6

*Have No. 400 adapter to fit standard 1/2-inch knockout.

No. 253V holds 14W2 s.s., 12W2 s.s., 14W3 s.s., 14W2 d.s., 12W2 d.s., 14W3 d.s., 6D solid s.s., 14E s.s., 14W2 L., 18EM s.s., 16EM d.s., 18EM d.s., 14E d.s.; 3/8-inch s.s., and d.s. conduit.

†253V	\$7.50	3/8	1/2	19/32	1/2	1/16	50	1000	8
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†Open-mouth visible type, for bushed cables.

Nos. 248 and 248V hold 10W2 s.s., 12W3 s.s., 10W3 s.s., 12W3 d.s.

248V	\$7.50	3/8L	1/2	21/32	3/16	1/2	50	1000	8
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Nos. 260 and 260V hold 8W2 s.s., 8W3 s.s., 10W2 d.s., 8W2 d.s., 10W3 d.s.

260V	\$9.00	3/8A	1/2	13/16	11/16	3/16	50	100	12
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Nos. 254 and 254V hold 8W3 d.s., 1/2-inch s.s. and d.s. conduit.

254V	\$9.00	1/2	1/2	15/16	13/16	19/32	50	100	13
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Nos. 278 and 278V hold armored conductors 6W2 s.s., 6W3 s.s.; 6W2 d.s.

278V	\$15.00	3/4S	3/4	1	7/8	3/4	25	100	20
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Nos. 255 and 255V hold 4W2 s.s., 4W2 d.s., 6W3 d.s., 3/4-inch s.s. and d.s. conduit.

255V	\$15.00	3/4	3/4	13/32	15/16	3/4	25	100	21
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Nos. 256 and 256V hold 1-inch s.s. conduit.

256V	\$25.00	1	1	13/8	1 1/4	1	25	25	25
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Nos. 261 and 261V hold 1-inch d.s. conduit.

261V	\$25.00	1	1	17/32	1 3/8	1	25	25	30
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No. 264 holds 4W3 s.s., 2W2 s.s., 4W3 d.s., 2W2 d.s., 6W2L, 6W3L, 4W2L, 4W3L.

264	\$25.00	1S	1	1 1/4	1 3/32	1	25	25	26
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No. 257 holds 1 1/4-inch s.s. conduit.

257	\$35.00	1 1/4	1 1/4	1 1/2	1 1/2	1 5/16	10	10	40
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No. 262 holds 1 1/4-inch d.s. conduit.

262	\$35.00	1 1/4	1 1/4	1 13/16	1 5/8	1 5/16	10	10	45
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No. 258 holds 1 1/2-inch s.s. conduit.

258	\$50.00	1 1/2	1 1/2	1 7/8	1 11/16	1 1/2	10	10	65
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No. 263 holds 1 1/2-inch d.s. conduit.

263	\$50.00	1 1/2	1 1/2	2 1/32	1 13/16	1 1/2	10	10	70
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No. 259 holds 2-inch s.s. and d.s. conduit.

259	\$75.00	2	2	2 1/2	2 3/16	2	10	10	90
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No. 249 holds 2 1/2-inch s.s. conduit.

249	\$100.00	2 1/2	2 1/2	3	2 13/16	2 3/8	5	5	148
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No. 277 holds 3-inch s.s. conduit.

277	\$125.00	3	3	3 3/16	3 3/16	3	5	5	180
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T & B 45° and 90° Squeeze Connectors

Malleable Iron—Galvanized
For Flexible Steel Conduit and Armored Conductors



Removable cap eliminates fishing wires and enables one to make a quick and sure connection.

Locknuts are furnished.

Nos. 265V and 266V hold 14W2 s.s., 12W2 s.s., 14W3 s.s., 12W3 s.s., 14W2 d.s., 12W2 d.s., 14W3 d.s., 6D solid s.s., 14E s.s., 14W2L, 18EM s.s., 16EM d.s., 18EM d.s., 14E d.s.; 3/8-inch s.s. conduit, 3/8-inch d.s. conduit.

No.	Per 100	Size In.	Size K.O. In.	Open I.D. In.	Closed I.D. In.	Throat Bushed Diam. In.	Unit Pkg.	Std. Pkg.	Wt. per 100 Lb.
265V	\$16.00	3/8-45°	1/2	5/8	1/2	3/16	50	100	14
266V	16.00	3/8-90°	1/2	5/8	1/2	3/16	50	100	16

Nos. 280 and 281V hold 12W3 d.s., 10W2 s.s., 10W3 s.s.

281V	\$16.00	3/8L-45°	1/2	11/16	17/32	3/16	50	100	14
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280	16.00	3/8-90° Large	1/2	11/16	17/32	3/16	50	100	14
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No. 272V holds 8W2 s.s., 8W3 s.s., 10W2 d.s., 8W2 d.s., 10W3 d.s.

272V	\$20.00	3/8A-90°	1/2	13/16	11/16	3/16	50	100	15
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Nos. 267V and 268V hold 8W3 d.s., 1/2-inch s.s. and d.s. conduit.

267V	\$20.00	1/2-45°	1/2	15/16	13/16	3/16	25	100	22
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268V	20.00	1/2-90°	1/2	15/16	13/16	3/16	25	100	22
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No. 279V holds 6W2 s.s., 6W3 s.s., 6W2 d.s.

279V	\$40.00	3/4S-90°	3/4	1	7/8	3/4	25	50	25
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Nos. 269V and 270V hold 4W2 s.s., 4W3 s.s., 4W2 d.s., 6W3 d.s.; 3/4-inch s.s. and d.s. conduit.

269V	\$40.00	3/4-45°	3/4	1 1/8	1	23/32	25	50	22
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270V	40.00	3/4-90°	3/4	1 1/8	1	23/32	25	50	28
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No. 273V holds 2W2 s.s., 2W2 d.s., 4W3 d.s.; 1-inch s.s.

273V	\$60.00	1-90°	1	1 13/32	1	...	25	50	...
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No. 274 holds 1 1/4-inch s.s. conduit.

274	\$75.00	1 1/4-90°	1 1/4	1 21/32	1 3/8	1 1/4	..	10	100
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No. 275 holds 1 1/2 inch s.s. conduit.

275	\$100.00	1 1/2-90°	1 1/2	1 7/8	1 7/8	1 1/2	..	10	165
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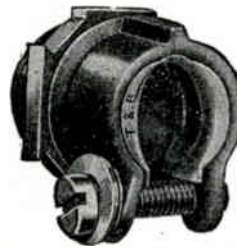
No. 276 holds 2-inch s.s. and d.s. conduit.

276	\$150.00	2-90°	2	2 1/2	2 1/4	2	..	5	250
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T & B Squeeze Type Connectors

For Non-Metallic Sheathed Cable and Flexible Tubing

Each connector has an insert so held in place that it cannot be displaced; can be removed without taking out and replacing screw. Has threaded ends, with locknuts. Malleable iron connector, insert steel galvanized.



Cat. No.	Knock-out In.	MADE TO HOLD			Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
		With Insert	Insert Removed	Insert				
2005	1/2	14W2, 12W2	14W3, 12W3	50	100	8	\$8.50	
2006	1/2	10W2	10W3	50	100	13	10.00	
2007	3/4	10W2	10W3	25	100	15	16.00	
2008	3/4	8W2	8W3	25	100	13	16.00	
2009	1	6W2	6W3	..	50	20	30.00	

No. 3100 T & B Tite-Bite Box Connectors

Has corrugated grip and holds non-metallic sheathed cable without cutting the fabric of the cable sheath.

Holds 14W2, 14W3, 12W2, 12W3.

No.	Per 100	Size In.	Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100
3100	\$7.50	3/8	100	1000	9



No. 3101 T & B Tite-Bite Box Connectors

For Armored and Non-Metallic Sheathed Cable

Will grip any size or type of cable that will go into it. Will also take armored cable 2 or 3 No. 14, 2 No. 12, 1 No. 8, 1 No. 6, or 1 No. 4 and 3/8 or 1/2-inch flexible conduit.

No.	Per 100	Size In.	Open I.D. In.	Closed I.D. In.	Throat Bushed Diam. In.	Unit Pkg.	Std. Pkg.	Wt. per 100 Lb.
3101	\$7.50	3/8	.656	.188	1/2	500	1000	9

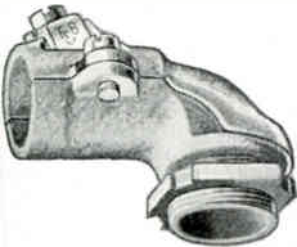


T & B Straight Tite-Bite Connectors



V after number denotes visible type for bushed cable.
 No. 300V holds 14-2, 14-3, 12-2, 12-3, 10-2, 4-1, 6-1; d.s., 4-1, 6-1, 12-2, 12-3, 14-2, 14-3, s.s. lead 8-1, 14-2, 14-3; flexible conduit s.s. $\frac{3}{8}$ inch; lamp cords 14-2, 16-2, 16-3, 18-3, lamp cords reinforced s.s. 16-2, 18-2; d.s. 14-2, 16-2, 18-2, and other special sizes.
 Approved by Underwriters.

No.	Per 100	Size In.	Size K.O. In.	Open I.D. In.	Closed I.D. In.	Throat Bushed In.	Unit Pkg.	Std. Pkg.	Wt. Lb. per 100
300V	\$7.50	$\frac{3}{8}$	$\frac{1}{2}$	.656	.437	$\frac{1}{2}$	100	1000	8.5
No. 301V holds 10-3, 8-2, 8-3; lead 14-2, 14-3, 12-2, 12-3, 10-2, 10-3; and others.									
301V	\$9.00	$\frac{3}{8}$	$\frac{1}{2}$	.781	.625	$\frac{1}{32}$	50	100	16
No. 302V holds 10-4, 8-2; lead 8-2; flexible conduit $\frac{1}{2}$ inch, s.s.									
302V	\$9.00	$\frac{1}{2}$	$\frac{1}{2}$	.937	.750	$\frac{1}{32}$	50	100	16
No. 302V8 holds 10-4, 8-2, 8-3; lead 8-2; flexible conduit $\frac{1}{2}$ inch, s.s.									
302V8		$\frac{1}{2}$	$\frac{1}{2}$	.937	.750	$\frac{1}{32}$	50	100	14
No. 304V holds 8-3, 6-2, 6-3, 4-2, 4-3; lead 6-2, 6-3; flexible conduit $\frac{3}{4}$ inch.									
304V	\$15.00	$\frac{3}{4}$	$\frac{3}{4}$	1.093	.906	$\frac{9}{64}$	25	100	26
No. 305V holds 8-3, 6-2, 6-3, 4-2, 4-3; lead 6-2, 6-3.									
305V		1	1	1.063	.875	$\frac{7}{8}$	10		17
No. 306V holds 4-4, 2-2; lead 4-2, 4-3, flexible conduit 1 in.									
306V	\$25.00	1	1	1.468	1.250	1	10		36
No. 308 holds flexible conduit $1\frac{1}{4}$ inch.									
308	\$35.00	$1\frac{1}{4}$	$1\frac{1}{4}$	1.750	1.562	$1\frac{1}{4}$	5		60
No. 310 holds flexible conduit $1\frac{1}{2}$ inch.									
310	\$50.00	$1\frac{1}{2}$	$1\frac{1}{2}$	2.031	1.812	$1\frac{1}{2}$	5		90
No. 312 holds flexible conduit 2 inch.									
312	\$75.00	2	2	2.500	2.250	2	5		130
No. 314 holds flexible conduit $2\frac{1}{2}$ inch.									
314	\$125.00	$2\frac{1}{2}$	$2\frac{1}{2}$	3.000	2.812	$2\frac{1}{2}$	2		220
No. 316 holds flexible conduit 3 inch.									
316	\$150.00	3	3	3.562	3.312	3	2		260



T & B 90° Angle Tite-Bite Connectors

Nos. 320V and 321V hold 14-2, 14-3, 12-2, 12-3, 10-2, 4-1, 6-1; lead 8-1, 14-2, 14-3; flexible conduit $\frac{3}{8}$ inch; lamp cords 14-2, 16-2, 16-3, 18-3; lamp cords reinforced s.s. 16-2, 18-2; and other special sizes.
 Approved by Underwriters.

No.	Per 100	Size In.	Size K.O. In.	Open I.D. In.	Closed I.D. In.	Throat Bushed In.	Unit Pkg.	Std. Pkg.	Wt. Lb. per 100
320V	\$16.00	$\frac{3}{8}$ -45°	$\frac{1}{2}$	.656	.437	$\frac{1}{2}$	50	100	18
321V	16.00	$\frac{3}{8}$	$\frac{1}{2}$	.656	.437	$\frac{1}{2}$	50	100	18
No. 322V holds 10-3, 8-2, 8-3; lead 14-2, 14-3, 12-2, 12-3, 10-2, 10-3; and others.									
322V	\$20.00	$\frac{3}{8}$ A	$\frac{1}{2}$	.781	.625	$\frac{1}{32}$	50	100	27
No. 323V holds 10-4, 8-2; lead 8-2; flexible conduit $\frac{1}{2}$ inch.									
323V	\$20.00	$\frac{1}{2}$	$\frac{1}{2}$	.937	.750	$\frac{1}{32}$	25	100	29
No. 323V8 holds 10-4, 8-2, 8-3; lead 8-2; flexible conduit $\frac{1}{2}$ inch, s.s.									
323V8		$\frac{1}{2}$	$\frac{1}{2}$	.937	.750	$\frac{1}{32}$	25	100	26
No. 325V holds 8-3, 6-2, 6-3, 4-2, 4-3; lead 6-2, 6-3; flexible conduit $\frac{3}{4}$ inch.									
325V	\$40.00	$\frac{3}{4}$	$\frac{3}{4}$	1.093	.906	$\frac{9}{64}$	25	50	34
No. 326 $\frac{1}{2}$ V holds 8-3, 6-2, 6-3, 4-2, 4-3; lead 6-2, 6-3.									
326 $\frac{1}{2}$V		1	1	1.063	.875	$\frac{7}{8}$	10		60
No. 326V holds 4-4, 2-2; lead 4-2, 4-3; flexible conduit 1 inch.									
326V	\$60.00	1	1	1.468	1.250	1	10		60
No. 327 holds flexible conduit $1\frac{1}{4}$ inch.									
327	\$75.00	$1\frac{1}{4}$	$1\frac{1}{4}$	1.750	1.562	$1\frac{1}{4}$	5		110
No. 328 holds $1\frac{1}{2}$ -inch flexible conduit.									
328	\$100.00	$1\frac{1}{2}$	$1\frac{1}{2}$	2.031	1.812	$1\frac{1}{2}$	5		165
No. 329 holds 2-inch flexible conduit.									
329	\$150.00	2	2	2.500	2.250	2	2		250
No. 330 holds flexible conduit $2\frac{1}{2}$ inches.									
330	\$375.00	$2\frac{1}{2}$	$2\frac{1}{2}$	3.000	2.812	$2\frac{1}{2}$	2		500
No. 331 holds flexible conduit 3 inches.									
331	\$500.00	3	3	3.560	3.312	3	2		650

T & B Squeeze Combination Couplings



Malleable Iron—Galvanized

For connecting flexible and rigid metallic conduits, also for connecting flexible metallic conduit to outlet boxes by means of Chase nipple. One-piece malleable iron, galvanized. Cannot pull apart.

Cat. No.	Per 100	Size In.	Made to Hold	Unit Pkg.	Std. Pkg.	Wt. Lb. per 100
230	\$15.00	$\frac{1}{2}$	$\frac{1}{2}$ " S.S. and D.S. Conduit 6W2 S.S.; 8W3 and 6W2 D.S.	10	100	18
231	20.00	$\frac{3}{4}$	$\frac{3}{4}$ " S.S. and D.S. Conduit; 4W2, 6W3 and 4W3 S.S.; 4W2 and 6W3 D.S.	10	100	25
232	25.00	1	1" S.S. Conduit; 2W2 S.S. and D.S.	10	50	35
233	35.00	$1\frac{1}{4}$	$1\frac{1}{4}$ " S.S. Conduit	10	50	40
234	50.00	$1\frac{1}{2}$	$1\frac{1}{2}$ " S.S. Conduit	50	50	76
235	75.00	2	2" S.S. and D.S. Conduit	50	50	92
236	75.00	$2\frac{1}{2}$	$2\frac{1}{2}$ " S.S. and D.S. Conduit	5	25	180
237	100.00	3	3" S.S. Conduit	1	5	240

No. A1SV T & B Slip-In Connectors



A visible type connector for machine and appliance installations as well as house wiring.

Made to hold 14W2, 14W3, 12W2, 14C and 14P cord; and $\frac{1}{16}$ -inch flexible conduit.

No.	Per 100	Size In.	Open In.	Closed I.D. In.	Throat Bushed In.	Unit Pkg.	Std. Pkg.	Wt. Lb. per 100	
A1SV	\$7.50	$\frac{3}{8}$	$\frac{1}{2}$.600	.380	$\frac{1}{16}$	50	1000	5

No. 239V T & B $\frac{3}{8}$ -Inch Wedge Type Duplex Box Connectors



Fits in a standard $\frac{1}{2}$ -inch knockout and takes Nos. 14W2, 14W3, and 12W2.

Packed 100 in standard package.

Weight per 100, 15 pounds.

No. 239V.....per 100 \$10.00

T & B Inclined Set Screw Connectors



Open-mouth, visible type, for bushed cables.

The screw is on the right-hand side, making it easy to tighten.

No. 240V is made to hold Nos. 14W2, 14W3, 12W2, 12W3, 10W2, 10W3, $\frac{3}{8}$ -inch flexible conduit.

No. 241V is made to hold Nos. 8W2, 8W3, 10W2L, 8W2L, 10W3L, $\frac{1}{2}$ -inch flexible conduit.

No.	Per 100	Size In.	K.O. In.	Open I.D. In.	Closed I.D. In.	Throat Bushed In.	Unit Pkg.	Std. Pkg.	Wt. Lb. per 100
240V	\$7.50	$\frac{3}{8}$	$\frac{1}{2}$	.594	.500	$\frac{1}{16}$	500	1000	6
241V	9.00	$\frac{1}{2}$	$\frac{1}{2}$	.920	.750	$\frac{1}{32}$	50	100	15

T & B 2020 Type Connectors

For 14W2, 14W3, 12W2, 12W3, 10W2, and 10W3 non-metallic sheathed cable, also $\frac{1}{32}$, $\frac{1}{4}$, and $\frac{3}{8}$ -inch flexible fibre tubing.

Can be installed outside or inside box. Simply snap connector into knockout, insert cable or tubing and tighten down screw. Has no rough edges or projections to cut into fibre armor. At same time they protect armor from rough edges of knockout opening. Present long rounded bearing surfaces to armor, doing away with possibility of injury to cable. Present nicely rounded shoulders to conductors as they are bent up to the outlet.



Cat. No.	Per 100	Size Inches	Knockout Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100
2020	\$7.50	$\frac{3}{8}$	$\frac{1}{2}$	1000		$3\frac{1}{2}$

T & B Watertight Connectors
For Use with Service Entrance Cable



Approved by Underwriters' Laboratories.

3/4-Inch Thread Size

Will Fit Round Cable

SIZE CABLE, IN. Largest	Smallest	Unit Pkg.	Std. Pkg.	Malleable Iron			Aluminum		
				No.	Per 100	Wt. Lb. per 100	No.	Per 100	Wt. Lb. per 100
.360	.320	10	100	2201	\$50.00	19	2251	\$75.00	15
.405	.355	10	100	2202	50.00	19	2252	75.00	15
.455	.400	10	100	2203	50.00	19	2253	75.00	15
.505	.450	10	100	2204	50.00	19	2254	75.00	15
.560	.500	10	100	2205	50.00	19	2255	75.00	15
.625	.555	10	100	2206	50.00	19	2256	75.00	15
.685	.620	10	100	2207	50.00	19	2257	75.00	15
.750	.680	10	100	2208	50.00	19	2258	75.00	15

Will Fit Oval Cable

.420x.560	.380x.520	10	100	2211	\$50.00	19	2261	\$75.00	15
.470x.620	.420x.560	10	100	2212	50.00	19	2262	75.00	15
.470x.680	.420x.620	10	100	2213	50.00	19	2263	75.00	15
.530x.730	.470x.680	10	100	2214	50.00	19	2264	75.00	15
.580x.800	.530x.730	10	100	2215	50.00	19	2265	75.00	15

1-Inch Thread Size

Will Fit Round Cable

.360	.320	10	100	2301	\$65.00	20	2351	\$90.00	16
.405	.355	10	100	2302	65.00	20	2352	90.00	16
.455	.400	10	100	2303	65.00	20	2353	90.00	16
.505	.450	10	100	2304	65.00	20	2354	90.00	16
.560	.500	10	100	2305	65.00	20	2355	90.00	16
.625	.555	10	100	2306	65.00	20	2356	90.00	16
.685	.620	10	100	2307	65.00	20	2357	90.00	16
.750	.680	10	100	2308	65.00	20	2358	90.00	16
.815	.745	10	100	2320	65.00	20	2370	90.00	16
.875	.810	10	100	2321	65.00	20	2371	90.00	16
.935	.870	10	100	2322	65.00	20	2372	90.00	16

Will Fit Oval Cable

.420x.560	.380x.520	10	100	2311	\$65.00	20	2361	\$90.00	16
.470x.620	.420x.560	10	100	2312	65.00	20	2362	90.00	16
.470x.680	.420x.620	10	100	2313	65.00	20	2363	90.00	16
.530x.730	.470x.680	10	100	2314	65.00	20	2364	90.00	16
.580x.800	.530x.730	10	100	2315	65.00	20	2365	90.00	16
.580x.860	.530x.800	10	100	2325	65.00	20	2375	90.00	16
.630x.910	.570x.850	10	100	2326	65.00	20	2376	90.00	16
.670x.970	.620x.900	10	100	2327	65.00	20	2377	90.00	16

1 1/4-Inch Thread Size

Will Fit Round Cable

1.065	.985	5	50	2340	\$100.00	27	2390	\$125.00	17
1.170	1.080	5	50	2341	100.00	27	2391	125.00	17

Will Fit Oval Cable

.700x1.090	.640x1.010	5	50	2342	\$100.00	27	2392	\$125.00	17
.750x1.150	.690x1.070	5	50	2343	100.00	27	2393	125.00	17

For 2 Round Cables

No.	Per 100	No. of Holes	Diam. Each Hole In.	Centers Apart In.	Size Cable In.	Unit Pkg.	Std. Pkg.	Wt. Lb. per 100
3205NN	\$65.00	2	.470	1 1/8	1	10	100	27
3208M	100.00	2	.580	1 1/4	1 1/4	5	50	27

T & B Squeeze Type Non-Watertight Connectors

For Use with Service Entrance Cable



This connector has an insert so held in place that it cannot accidentally be displaced, but it can readily be removed without taking out the screw when connector is to be used with round wire.

No.	Per 100	Size In.	Unit Pkg.	Std. Pkg.	Wt. Lb. per 100
2005	\$10.00	1/2	500	1000	8
2006	20.00	1/2	50	100	13
2007	25.00	3/4	25	50	15
2008	25.00	3/4	25	50	15
2009	40.00	1	10	20	20
3920	100.00	1 1/4	10	10	60

National Ovalflex A.B.C. Flat Armored Bushed Cable



2-Conductor

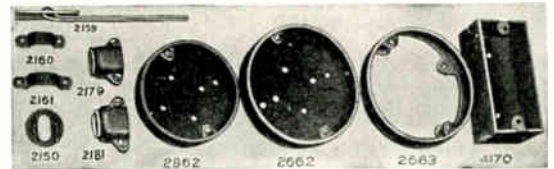
A safely bushed and insulated flat armored cable for under-plaster installations and alterations. Its neat appearance recommends it for exposed surface wiring. Easy bending, edgewise or flatwise, makes it suitable for fitting snugly into corners and around machinery.

Anti-short dependable bushes cut end of steel armor, preventing damage to wires.

Regularly made with solid conductors and N.E.C. insulation, but can be furnished with stranded conductors or special insulation.

Size B. & S. Gage.....	14/2	12/2	10/2	14/3	12/3
Per 1000 Feet.....	\$80.00	115.63	158.80	120.38	156.29
Feet per Coil.....	250	250	125	125	125
Wt. per 1000 Feet. lb.	272	296	345	344	376

Ovalflex Fittings



No.	Description	Per 100
2176A	Set Screw Connector for 14-2 and 12-2 Ovalflex to 1/2-Inch Threaded Fittings or Boxes with 1/2-Inch K. O.'s.....	\$11.52
2180	Same as 2176A but Squeeze Type for 14-3 and 12-3 Ovalflex.....	16.00
2163EZ	For 14/2 and 12/2 Ovalflex.....	7.40
2154	Set Screw Connector for 14-2, 12-2 and 10-2 Ovalflex to Boxes Having 5/8-Inch and 3/4-Inch K. O.'s and Cable Clamps.....	11.52
412	Connector for 14-2, 12-2 and 10-2 Ovalflex to Metal Molding Devices.....	23.04
413	Same as 412 but for 14-3 and 12-3 Ovalflex.....	27.60
2155	90° Box Connector; Takes 14-2 and 12-2 Ovalflex into 1/2-Inch Conduit K. O.'s.....	24.00
2156	Same as 2155 but for 14-3, 12-3 and 10-2.....	24.00
2157	1-Screw Folding Strap for 14-2, 12-2 and 10-2.....	.93
2159	Toggle Fastener with Wire Loop.....	2.00
2160	Strap Fastener for 14-2 and 12-2 Ovalflex.....	.80
2161	Strap Fastener for 14-3 and 12-3 Ovalflex.....	.80
2662	Outlet Box, 4x3/4 Inches Outside, 6 Oval K. O.'s in Side; 5 1/2-Inch Conduit K. O.'s in Bottom.....	14.00
2665	Same as 2662 but with 3/8-Inch Fixture Stud.....	19.20
2663	Extension or Plaster Ring, 4x3/4 Inches Outside with 6 Oval K.O.'s for Connecting Ovalflex to Boxes Buried in Walls and Ceilings.....	15.00
2862	Outlet Box, 3 1/4 x 3/4 Inches Outside, 4 Oval K.O.'s in Side; One 1/2-Inch Conduit K.O. in Bottom.....	13.00
2865	Same as 2862, but with 3/8-Inch Fixture Stud.....	18.20
*4170S1	Sectional Switch Box, 4x1 1/2 x 1 1/2 Inches Deep; 1 Oval K.O. in Each End; 2 Oval K.O.'s in One Side; 1 1/2-Inch and 1 3/8 K.O. on Opposite Side; 1/2-Inch K.O. in Bottom. Sherardized. Takes Connectors 2179 and 2181.....	30.60
*4172S1	Spacer (Box Less Sides) for Forming Gangs.....	27.00
2179	Special Box Connector to Take 14-2, 12-2 and 10-2 Ovalflex into Oval K.O.'s.....	6.70
2181	Same as 2179, but for 14-3 and 12-3 Ovalflex.....	6.30
2150	Adapter Bushing for Use with Connectors 2179 and 2181 in 1/2-Inch Conduit K.O.'s.....	1.10

*Can be equipped with the usual supporting ears but because of the length of box, 4 inches, an ordinary switch plate will not cover the ears (sherardized).

Flextube Non-Metallic Flexible Conduit Loom



Made from an especially prepared stiff fiber cord interwoven with a tough yarn. The result is a seamless tube with a smooth, hard, canvas-like roller-bearing interior which affords the best obtainable fishing surface. This interwoven insulating tubing is then treated with a superior moisture and flame resisting compound, is further protected by a strong, tough braiding which is also compounded.

Regularly inspected and labeled by the Underwriters' Laboratories.

Trade Size I.D. Inches	Per Foot	Size Coil Feet	Weight Pounds per 1000 Feet	Trade Size I.D. Inches	Per Foot	Size Coil Feet	Weight Pounds per 1000 Feet
7/32	\$.03	250	33	1 1/4	\$.26	...	338
1/4	.04	250	35	1 1/2	.36	...	440
3/8	.06	250	55	1 3/4	.41	...	425
1/2	.08	200	73	2	.45	...	460
5/8	.10	200	99	2 1/4	.47	...	700
3/4	.12	150	145	2 1/2	.58	...	740
1	.21	100	182	...	...	...	...

National Canvas-Back Loom Wire Non-Metallic Sheathed Cable



Size Cable	Per 1000 Ft. Without Ground Wire	Approx. Ft. per Coil	Approx. Lb. per 1000 Ft. Without Ground Wire
14/2	\$42.40	250	104
12/2	70.10	200	125
10/2	96.80	200	155
8/2	176.40	125	240
14/3	81.60	200	165
12/3	111.00	200	200
10/3	133.40	200	250
8/3	217.00	125	400
6/3	314.80	125	576

Fittings for Loom Wire



No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
9000	\$2.25	Clip for Open Wiring 14/2 and 12/2	50	500	8 1/2
9011	.50	Strap for Concealed Wiring 14/2 and 12/2	50	1000	7
9012	.50	Strap for Concealed Wiring 14/3 and 12/3	50	1000	7 3/4



No.	Per 100	With Shim Holds	With-out Shim Holds	For K.O. In.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
9052-S	\$15.00	10/2	10/3	1 1/2	50	100	12 1/2
9054-S	18.00	8/2	8/3	3/4	25	100	17 1/2
9056-S	29.00	6/2	6/3	1	25	100	29 1/2

For 14/2, 12/2, 14/3, 12/3 Loom Wire.
Packed 1000 in standard package.
Weight per 1000, 87 1/2 pounds.

No. 9050-EZ No. 9050-EZ per 100 \$6.50

National 3-Wire Ovalduct



Ovalduct is a flat raceway for extension work on the walls and ceilings of fireproof buildings. It is a rigid tube formed from sheet steel.

Ovalduct is installed without channelling the underlying concrete, tile, or brick. It can be laid in a shallow groove in the plaster, and fastened to the ceiling or wall with straps and wire toggles provided for the purpose, or with short tie wires which are fished through small holes drilled in tile on each side of duct. It is shallow enough that plaster of ordinary thickness will completely cover it.

The Ovalduct line includes elbows, couplings, and boxes to take care of any wiring situation, and connectors which permit this raceway to be installed in conjunction with any other type of raceway or wiring system. All fittings are especially designed for the purpose and are easily installed. Approved by the Underwriters' Laboratories.

Nominal outside over all dimensions are 1 3/8 inch high, 1 1/2 inch wide and 10 feet long.

Standard package, 100 feet.

Weight per 100 feet, 35 pounds.

Per 1000 Feet..... \$20.00

Fittings for 3-Wire Ovalduct

No. 2133 Squeeze Type Couplings



For Ovalduct and elbows. Length, 1 1/4 inches.

No.	Per 100	No. in Ctn.	Std. Pkg.	Wt. Lb. Std. Pkg.
2133	\$15.26	50	100	7

No. 2143 Pitcher Lip Box Connectors



Takes Ovalduct to oval K.O.'s.

No.	Per 100	No. in Ctn.	Std. Pkg.	Wt. Lb. Std. Pkg.
2143	\$6.30	25	100	5

No. 2662 Outlet Boxes



Outside dimensions, 4x3 1/4 inches; 6 oval K.O.'s in side; five 1/2-inch conduit K.O.'s in bottom.

2662	\$14.00	5	50	25
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No. 2137 90° Internal Elbows



Set screw for securing Ovalduct on each end.

Radius, 2 3/8 inch. Offset back to end, 2 1/8 inches.

2137	\$53.50	25	100	17
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No. 2134 90° Internal Elbows



Fits No. 2133 coupling and Nos. 2156, 401, and 2181 connectors.

Radius, 1 1/4 inches. Offset, back to end, approximately 2 1/2 inches.

2134	\$28.52	25	100	15
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No. 2180 Box Connectors



With 1/2-inch Bondnut. Will take Ovalduct into conduit or 1/2-inch K.O.'s.

2180	\$16.00	10	100	14
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No. 2159 Wire Toggle Fasteners

2159	\$2.00	25	500	13
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No. 2161 Strap Fasteners



2161	\$.80	50	1000	9
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No. 4170-S1 Sectional Switch Boxes

Sherardized. Size, 4x2x 1 1/2 inches; 1 oval K.O. each end; 2 oval K.O.'s 1 side; one 1/2-inch and one 3/8-inch K.O. on opposite side.

4170-S1	\$30.60	1	50	32
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No. 111 National La-In Xtensionduct Molding



A simple method of circuit extension in place of cords. Finished in neutral brown mahogany to match oak, birch, walnut or mahogany woodwork.

For extension wiring from existing convenience outlet. Takes two No. 14 wires. Furnished in 5-foot lengths.

Listed and approved by Underwriters' Laboratories, Inc. Packed 100 in unit package; 1000 in standard package. No. 111, Weight per 100 Feet, 16 Pounds.per 100 feet. \$8.50

National La-In Xtensionduct Fittings

Sherardized finish.



No. 100 Low Potential Fiber Bushing



No. 113 Adapter



No. 136 Flat Elbow



No. 137 External Elbow Cap



No. 138 Internal Elbow Cap



No. 139 Box Extension Adapter



No. 141 Box Extension Device



No. 144 Coupling



No. 351M Streamlined Single Pole Toggle Switch

No.	Per 100	Description	Unit Pkg.	Std. Pkg.	Wt. Lb.
100	\$2.80	For covering bell wire where Xtensionduct is used without fittings.....	10	100	1
113	6.00	Xtensionduct to No. 333 Molding Fittings.....	10	100	3
136	14.10	For use at left or right 90° bends. Supplied with base. Complete.	5	50	2
137	8.00	For use at outside corners; 90°.	5	50	1½
138	8.00	For use at inside corners; 90°.	5	50	1½
139	47.50	Accommodates extensions from outlets requiring other than standard convenience receptacles. May be used with any standard wiring device including P & S Despard Line.....	5	20	5
141	70.00	Accommodates extensions from existing outlets. Includes plate and T-slot receptacle...	5	20	10
144	1.30	For connecting base; capping may overlap joint.....	10	100	1
351M	87.50	Consists of toggle switch and steel housing for surface mounting. Four double twist-outs.....	1	20	8

No. 333 National La-In Molding



Consists of two pieces, base and capping, so formed as to snap together—the capping snapping over the base. Wires are laid-in, not fished. The shape of base has been improved to hold wires in place and to allow the capping to be snapped on more easily and securely.

Provided with non-corrosive Sherardized finish, a process in which finely divided zinc is driven into the pores of the metal, effecting an alloy which is not only rust-proof but which cannot be knocked off. It can be painted to match walls or ceilings, or grained to match woodwork, taking oil or water paints equally well.

For 2 to 4 wires; 1 inch wide, ¼ inch high, and 8½ feet long. Capacity, 4 No. 12 or No. 14 wires or 3 No. 8 or No. 10 wires.

Packed 12 pieces 8½ feet long in corrugated containers; 100 feet in unit package; 1000 feet in standard package.

Weight per standard package, 410 pounds. No. 333..... per 100 feet \$11.20

National La-In Molding Fittings

Fastenings



No. 323 Joint Cap



No. 344-X Coupling



No. 345 Single Strap



Nos. 419-A and 419-B Toggle Bolts



No. 434 Single Strap with Base, Base Plate Type



No. 324 Rawl Drive

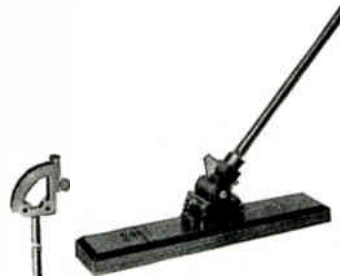


No. 420-B Spring Head Toggle

Sherardized base and cap.

No.	Per 100	Size Inches	Unit Pkg.	Std. Pkg.	Wt. Lb. Std. Pkg.
323	\$1.30	.....	50	500	4
324	7.70	.....	100	100	2
344-X	1.70	.....	50	500	11
345	1.20	.....	50	500	7
419-A	8.80	1/8"x4	50	50	11
419-B	9.20	3/16"x4	50	50	25
420-B	8.00	5/32"x3	100	100	1¾
434	4.00	.....	50	500	11

Tools



No. 322 Bending Tool

No. 422-X Molding Shear



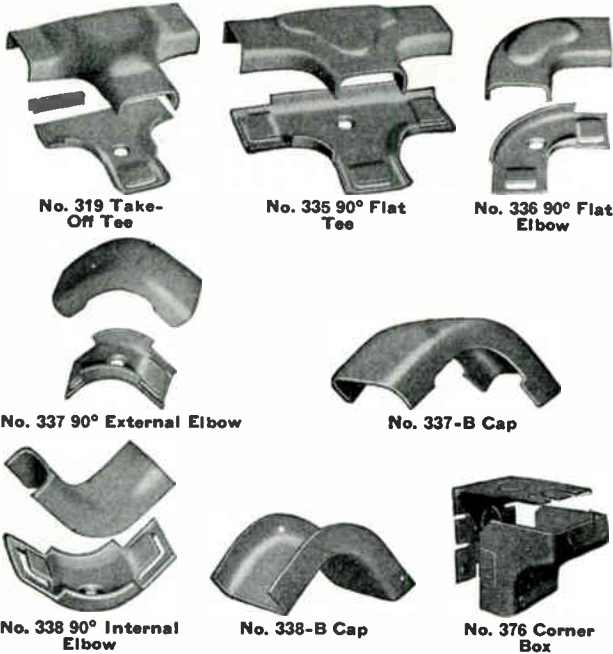
No. 423 Miter Gage

Sherardized base and cap.

Packed 1 in unit package; 1 in standard package.			
No.	322	422-X	423
Each.....	\$4.00	15.00	1.2
Weight per Std. Pkg.....	lb. 2	11	2

National La-In Molding Fittings

For No. 333 Lay-In Molding Bends and Branches



No. 319 Take-Off Tee

No. 335 90° Flat Tee

No. 336 90° Flat Elbow



No. 337 90° External Elbow



No. 337-B Cap



No. 338 90° Internal Elbow



No. 338-B Cap



No. 376 Corner Box

Sherardized base and cap.

No.	Per 100	Description	Unit Pkg.	Std. Pkg.	Wt. Lb. Std. Pkg.
319	\$27.50	For branch molding runs. Tee base slips under molding base. Capacity, up to 2 No. 10 or No. 14 splices.....	5	100	15
335	27.50	Push-fit base. Capacity, up to 4 No. 12 splices.....	5	100	15
336	19.40	Push-fit base.....	5	100	11
337	20.00	Push-fit base.....	5	100	8
337-B	12.20	For Nos. 337 or B-337 external elbow.....	30	60	3
338	20.00	Push-fit base.....	5	100	9
338-B	15.00	For Nos. 338 or B-338 internal elbow.....	30	60	3
376	45.90	Double twistout on each side and one at each end. K.O. for 1/2-in. conduit in each arm of base.....	5	50	21

No. 352 Utility Boxes



352	\$40.00	Utility box with combination 1/2-in. conduit K. O. and drop-cord eyelet. Four twistouts for molding or Xtensionduct	5	20	7
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Blank Covers



No. 339-X



No. 365-X

May be used for drop-cords, fixtures, or as junctions. Sherardized base and cap.

339-X	\$11.70	2 1/2-in. blank cover with combination 1/2-in. conduit K.O. and drop-cord eyelet. For use with Nos. 342 or 343 boxes.....	5	100	8
365-X	17.00	4-in. blank cover with combination 1/2-in. conduit K.O. and drop-cord eyelet. For use with Nos. 362, 365, 365-A, 366, and 367.....	5	100	10

National La-In Molding Fittings

For No. 333 Lay-In Molding

Device Boxes



Sherardized base and cap.

No.	Per 100	Description	Unit Pkg.	Std. Pkg.	Wt. Lb. Std. Pkg.
342	\$41.20	3-in. 10-ampere device box; 1-in. deep, 1/2-in. conduit K.O. in bottom. Two No. 6-32x1/8-in. screws furnished for mounting sockets, switches, or other devices. Four double twistouts.....	5	50	16
343	40.00	2 1/2-in. 5-ampere device box; 5/8-in. deep, 1/2-in. conduit K.O. in bottom. Two No. 6-32x1/8-in. screws furnished for mounting sockets, switches, or other devices. Four double twistouts.....	5	20	5

Devices



No. 348 Drop-Cord Rosette



No. 348-X Drop-Cord Rosette



No. 350 Duplex Receptacle with T-Slots



No. 351 Single Pole Toggle Switch



No. 353 Lumiline Lampholder Box



No. 356-X Keyless Receptacle

Sherardized base and cap.

348	\$45.00	2 1/2-in. rosette; push-fit base; 4 double twistouts. Assembled with terminal block.....	5	50	15
348-X	35.00	3-in. rosette; push-fit base; 4 double twistouts.....	5	50	19
350	65.60	Consists of T-slot duplex receptacle and steel housing for surface mounting. Four twistouts for molding or Xtensionduct.....	1	20	9
351	87.50	Consists of toggle switch and steel housing for surface mounting. Four twistouts for molding or Xtensionduct.....	1	20	8
353	50.00	Complete with bridges for mounting receptacles which may be selectively placed under tongues for straight runs or for turning corners. Four double twistouts	1	10	4
356-X	60.00	3-in. receptacle, threaded for Uno shade holder. Watts, 660; push-fit base; 4 double twistouts....	5	50	22
360	81.40	2 1/2-in. T-Slot Receptacle; 660 watt Push-fit base; 2 double twistouts.....	5	50	18

National La-In Molding Fittings
For No. 333 Lay-In Molding
Canopy Bases



No. 361 Split Canopy Base Plate and Closed Cover

No. 362 Split Canopy Base Plate and Cover

No. 365 Canopy Base Plate and Cover



No. 366 Canopy Base Plate and Cover



No. 367 Split Canopy Base Plate and Cover

Sherardized base and cap.

No.	Per 100	Description	Unit Pkg.	Std. Pkg.	Wt. Lb. Std. Pkg.
361	\$65.00	4¾-inch split canopy base plate and closed cover. Combination ½-inch conduit K.O. and drop-cord eyelet. Six double twistouts.	5	50	35
362	65.00	4¾-inch split canopy base plate and cover. Two pairs 8-32 tapped holes on 3¼ and 4-inch centers for standard outlet box covers or devices. Six double twistouts.	5	50	30
365	59.00	4¾-inch canopy base plate and cover. Two pairs 8-32 tapped holes on 3¼ and 4-inch centers. For standard outlet box covers or devices. Five ½-inch conduit K.O.'s in plate. Six double twistouts.	5	50	36
366	72.80	6½-inch canopy base plate and cover. Two pairs 8-32 tapped holes on 3¼ and 4-inch centers for standard outlet box covers and devices. Five ½-inch conduit K.O.'s. Six double twistouts.	5	20	25
367	84.00	6½-inch split canopy base plate and cover. Two pairs 8-32 tapped holes on 3¼ and 4-inch centers for standard outlet box covers or devices. Six double twistouts.	5	20	23

Flush Device Boxes



No. 439 Surface Switch and Receptacle Box

No. 439-D Surface Switch and Receptacle Box

No. 439-X Surface Switch and Receptacle Box

No. 441 Switch and Receptacle Box Adapter

One-gang switches furnished; can be furnished up to 6-gang. Sherardized base and cap.

439	\$63.00	1¾-inch deep for flush switches and receptacles; 4 7/8 x 3 1/8 inches with 4 double twistouts.	1	10	8
439-D	57.00	1 3/8-inch deep for flush switches and receptacles; 4 7/8 x 3 1/8 inches with 4 double twistouts.	1	10	7
439-X	55.00	1-inch deep for flush switches and receptacles; 4 7/8 x 3 1/8 inches with 4 double twistouts.	1	10	7
441	57.00	4 7/8 x 3 1/8 x 3/4 inches deep with 4 double twistouts.	1	10	5

National La-In Molding Fittings
For No. 333 Lay-In Molding Connectors



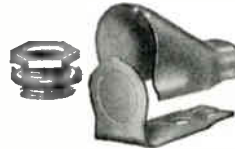
No. 315 Conduit to Molding Adapter



No. 317 90° Angle Box Connector

Sherardized base and cap.

No.	Per 100	Description	Unit Pkg.	Std. Pkg.	Wt. Lb. Std. Pkg.
315	\$25.00	For ½-Inch Conduit to Molding Devices and Elbows, Tees, Etc.	5	20	3
317	36.20	Molding to ½-Inch Conduit K.O. or to ½-Inch Conduit Coupling.	5	20	4



No. 406 Combination Connector



No. 2180 Straight Box Connector

No.	Per 100	Description	Unit Pkg.	Std. Pkg.	Wt. Lb. Std. Pkg.
406	22.00	½-Inch Conduit K.O. In End and Bottom, Furnished with Chase Nipple and ½-Inch Locknut.	5	20	5
2180	16.00	½-Inch Connector. Molding to ½-Inch Conduit K.O., or to ½-Inch Conduit Coupling.	10	100	14

Auxiliary Fittings



No. 500 Bushing



No. 412 Connector

Sherardized base and cap.

No.	Per 100	Description	Unit Pkg.	Std. Pkg.	Wt. Lb. Std. Pkg.
500	\$2.00	Required At Ends In Fittings and Devices to Protect Wires From Abrasion.	100	500	4
412	23.04	For 14/2 or 12/2 Flat Armored Cable to Molding Boxes and Devices.	10	100	6



La-In Florduct



Florduct makes practical surface floor wiring across aisles and will stand the abuse of hand trucks and general office traffic.

Consists of two pieces, base and capping so formed as to snap together, the capping snapping over the base. Capping is a ramp-like plate offering the minimum of obstruction.

Special rust-proofed zinc finish can be painted to match or harmonize with any given surface.

No. 711 capacity, 4 pairs inside telephone twist wire; 10 annunciator wires; 2 No. 14 wires.

No. 733 capacity, 4 No. 12 or No. 14 wires or 3 No. 8 or No. 10 wires; telephone feeder cables up to 3/16-inch diameter; 8 pairs inside telephone twist wire; 25 annunciator wires.

Standard package, 100 feet.

No.	711	733
Per 100 Feet.	\$24.00	27.20
Size. inches	1 1/2 x 3/8	2 x 1/2
Length. feet	5	8 1/3
Unit Package. feet	10	8 1/3
Weight per Standard Package. pounds	38	48 1/2

La-In Florduct Fittings

No. 738

Small internal adapter elbow for No. 711 Florduct only. For making bends from Florduct on floor to open wiring or Xtensionduct on baseboard. Furnished with fiber bushing to be used with open wiring.

Unit package, 10; standard package, 20.

Weight per standard package, 1 1/2 pounds.

No. 738. per 100 \$13.00

No. 739

Internal adapter elbow for open wiring to No. 733 Florduct.

For telephone cables up to 3/16-inch diameter. Furnished with fiber bushing to be used with open wiring.

Unit package, 10; standard package, 20.

Weight per standard package, 1 1/2 pounds.

No. 739. per 100 \$16.00

No. 740

Large internal adapter elbow for No. 733 Florduct only.

For making bends from Florduct on floor to molding on wall or baseboard.

Unit package, 10; standard package, 20.

Weight per standard package, 1 1/2 pounds.

No. 740. per 100 \$16.00

No. 749

Service fitting to be used at the new outlet location for protecting wires leaving Florduct and extending to apparatus on desks, etc.

Equipped with four double twistouts, for use at ends, for through runs or for right angle branches.

Unit package, 1; standard package, 10.

Weight per standard package, 4 1/2 pounds.

No. 749. per 100 \$90.00

La-In Florduct Fittings

No. 750

Service fitting for No. 733 or No. 711 Florduct to be used at the new outlet location for protecting wires leaving Florduct and extending to apparatus on desks, etc.

Equipped with four double twistouts. Used at ends, for through runs or for right angle branches.

Unit package, 1; standard package, 10.

Weight per standard package, 4 1/2 pounds.

No. 750. per 100 \$56.00

No. 743

Duplex plug receptacle for No. 711 and No. 733 Florduct. Brass receptacle mounted on sherardized box.

Unit package, 1; standard package, 1.

Weight per standard package, 1 1/4 pounds.

No. 743. per 100 \$512.00

No. 760

Single plug receptacle for No. 711 and No. 733 Florduct mounted on sherardized box.

Unit package, 1; standard package, 10.

Weight per standard package, 4 1/2 pounds.

No. 760. per 100 \$92.00

No. 765

Outlet extension cap for No. 711 Florduct only. Used as a junction fitting between Florduct and the outlet from which extension is made.

Arranged for mounting on wood floor. May be used as flat elbow or junction of Florduct runs.

Unit package, 10; standard package, 20.

Weight per standard package, 5 1/2 pounds.

No. 765. per 100 \$40.00

No. 352-F

Junction box for branch from top to face of baseboard. Provided with opening for No. 333 metal molding and elbow cap.

Unit package, 5; standard package, 20.

Weight per standard package, 9 pounds.

No. 352-F. per 100 \$78.70

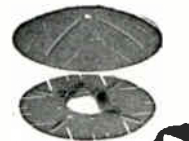
Nos. 702 and 703

Adapter for connecting and fastening No. 765 extension cap to threaded outlet or floor box.

Unit package, 10; standard package, 20.

Weight per standard package, 1 1/4 pounds.

No.	702	703
Per 100.	\$13.00	16.00
Size Outlet or Floor Box. inches	1/2	3/4



La-In Florduct Fittings

No. 704



Adapter to be used with No. 703 adapter for 1-inch threaded outlet or floor box.

Unit package, 10; standard package, 20.
Weight per standard package, 1¼ pounds.

No. 704.....per 100 \$24.00

No. 745



Strap for No. 733 Florduct.

Unit package, 50; standard package, 500.

Weight per standard package, 7 pounds.

No. 745.....per 100 \$5.00

No. 324



Rawl-Drive

Unit package, 100; standard package, 100.

Weight per standard package, 2 pounds.

No. 324.....per 100 \$7.70

No. 750-T



Service fitting for No. 733 or No. 711 Florduct, to be used at the new outlet location for protecting wires leaving Florduct and extending to apparatus on desks, etc.

Equipped with four double twistouts. Used at ends, for through runs or for right angle branches. Rubber sheath has 5/8-inch inside diameter.

Unit package, 20; standard package, 20.

Weight per standard package, 11 pounds.

No. 750-T.....per 100 \$56.00

No. 766-B



Outlet extension cap for No. 733 or No. 711 Florduct. Used as junction fitting between Florduct and the outlet from which extension is made.

Arranged for mounting on wood floor. May also be used as flat elbow or junction of Florduct runs. Height, 13/16 inch.

Unit package, 50; standard package, 50.

Weight per standard package, 14 pounds.

No. 766-B.....per 100 \$40.00

No. 761



Duplex floor receptacle for No. 733 or No. 711 Florduct.

Unit package, 1; standard package, 10.

Weight per standard package, 7 pounds.

No. 761.....per 100 \$110.00

No. 715



Strap for No. 711 Florduct.

Unit package, 50; standard package, 500.

Weight per standard package, 7 pounds.

No. 715.....per 100 \$5.00

**Type CF National Plug-In Strips
Concealed Flush Type**



Each length of Plug-In Strip is furnished with 2 No. 690 copper jumpers, a suitable quantity of No. 607 mounting clips and No. 6 wood screws 1¼ and 2 inches long.

No.	Per Lgth.	Lgth. Ft.	Description	Plug-Ins per Lgth. (Out-let)	Lgths. per Unit Pkg.	Lgths. per Std. Pkg.	Wt. Lb. Std. Pkg.
CF-602-6	\$2.50	2	Plug-Ins on 6" Ctrs.	4	1	10	11
CF-603-6	\$3.00	3	Plug-Ins on 6" Ctrs.	6	1	10	15
CF-606-6	\$4.50	6	Plug-Ins on 6" Ctrs.	12	1	10	29
CR-606-18	\$3.60	6	Plug-Ins on 18" Ctrs.	4	1	10	28
CF-609-18	\$5.04	9	Plug-Ins on 18" Ctrs.	6	1	10	43

No. CF-615 Fill-In Strip

A fill-in blank raceway to fill-in ends, corners, behind radiators, or other inaccessible places where Plug-Ins could not be used.

Six-foot length plain wire raceway to fill-in or for low potential wiring.

Packed 1 length in unit package; 10 lengths in standard package.

Weight per standard package, 23 pounds.

No. CF-615.....per length \$1.44

Fittings

No. CF-616 End Feed Junction Boxes



Has 45° swivel, set screw connector for A.B.C. cable.

Packed 1 in unit package; 10 in standard package.

Weight per standard package, 4 pounds.

No. CF-616.....each \$.60

Center Feed Junction Boxes



No. CF-618 has 45° swivel, set screw connector for A.B.C. cable.

No. CF-628 has 1/2-inch threaded hub for 1/2-inch conduit or cable connectors.

Packed 1 in unit package; 10 in standard package.

No. CF-618 CF-628
Each.....\$.68 .68

Straight End Junction Boxes



No. CF-627 has threaded hub in one end for standard connectors. Unwired, 1 3/8 inches over all, 1 1/2-inch housing.

No. CF-617 is for connecting A.B.C. cable or Flexsteel. Has set screw connector in one end. Unwired, 2 1/8 inches over all, 1 3/4-inch housing.

Packed 1 in unit package; 5 in standard package.

Weight per standard package, 2 pounds.

No. CF-627 CF-617
Each.....\$.46 .46

Fittings for Type CF National Plug-In Strips

Concealed Flush Type

No. CF-636 90° Flat Blank Elbows



Unwired.
Dimensions over all, $2\frac{1}{4} \times 2\frac{1}{4}$ inches.
Packed 1 in unit package; 5 in standard package.
Weight per standard package, 2 pounds.

No. CF-636.....each \$.28

No. CF-637 90° Exterior Blank Elbows



Unwired.
Exposed dimensions, $2\frac{1}{8} \times 2\frac{1}{8}$ inches. Concealed dimensions, $1\frac{3}{8} \times 1\frac{3}{8}$ inches.
Packed 1 in unit package; 5 in standard package.
Weight per standard package, 2 pounds.

No. CF-637.....each \$.28

No. CF-638 90° Interior Blank Elbows



Unwired.
Exposed dimensions, $1\frac{3}{8} \times 1\frac{3}{8}$ inches. Concealed dimensions, $2\frac{1}{8} \times 2\frac{1}{8}$ inches.
Packed 1 in unit package; 5 in standard package.
Weight per standard package, 2 pounds.

No. CF-638.....each \$.28

No. CF-644 Joiner Couplings



Covers open ends of adjoining parts.
Length, $2\frac{5}{16}$ inches.
Packed 10 in unit package; 50 in standard package.
Weight per standard package, $2\frac{1}{2}$ pounds.

No. CF-644.....each \$.08

No. CF-680 End Fittings



Covers open end at termination of Plug-In Strip run.
Length, $1\frac{5}{8}$ inches.
Packed 5 in unit package; 20 in standard package.
Weight per standard package, $6\frac{3}{4}$ pounds.

No. CF-680.....each \$.08

No. 619-A Gage No. 5x4-Inch Black Flat Head Toggle Bolts



For mounting Plug-In Strip.
Packed 50 in unit package; 50 in standard package.
Weight per standard package, 11 pounds.

No. 619-A.....each \$.12

Fittings for Type CF National Plug-In Strips Concealed Flush Type—For Lumiline Lamp Wiring

No. 961 Shallow Type Lumiline Plug-Ins



For multiple use.
Spring clamp for binding Plug-In included.
Packed 5 in unit package; 20 in standard package.

Weight per standard package, 6 ounces.
No. 961.....each \$.40

No. 962 Deep Type Lumiline Plug-Ins

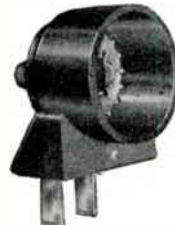


For use where single lamps are used exposed. The long cover adds a finished appearance and protects the lamp.

Spring clamp included.
Packed 5 in unit package; 20 in standard package.
Weight per standard package, 8 ounces.

No. 962.....each \$.50

No. 965 Deep Type Lumiline Plug-Ins



With switch for use where single lamps are used exposed. The long cover adds a finished appearance and protects the lamp.

Spring clamp included.
Packed 5 in unit package; 20 in standard package.
Weight per standard package, 8 ounces.

No. 965.....each \$.98

Fittings for National Plug-In Strips For Lumiline Lamps

No. 966 Tubular Lamp Plug-Ins



For filling out the ends of runs of Lumiline lamps for spaces less than twelve inches.

Spring clamp included.
Packed 5 in unit package; 20 in standard package.
Weight per standard package, 14 ounces.

No. 966.....each \$1.00

No. 912 Clamp-On Aluminum Reflectors



For use with continuous runs of twelve-inch Lumiline lamps when used with No. 961 Plug-In.

Packed 1 in unit package; 20 in standard package.
Weight per standard package, $3\frac{3}{4}$ pounds.

No. 912.....each \$1.00

No. 918 Clamp-On Aluminum Reflectors



For use with continuous runs of eighteen-inch Lumiline lamps when used with No. 961 Plug-In.

Packed 1 in unit package; 20 in standard package.

Weight per standard package, $5\frac{1}{4}$ pounds.
No. 918.....each \$1.25

No. 1628 Single Aluminum Reflectors



For eighteen-inch Lumiline lamps, single row.

Packed 1 in unit package; 10 in standard package.

Weight per standard package, $4\frac{3}{4}$ pounds.

No. 1628.....each \$1.50

Type BC National Plug-In Strips
Baseboard Cap Type



Each length of Plug-In Strip is furnished with 2 No. 690 copper jumpers,

a suitable quantity of No. 607 mounting clips and No. 6 wood screws 1 1/4 and 2 inches long.

No.	Per Lgth.	Lgth. Ft.	Description	Plug-Ins per Lgth. (Out-let)	Lgths. Unit Pkg.	Lgths. per Std. Pkg.	Wt. per Lb. Std. Pkg.
BC-606-6	\$6.48	6	Plug-Ins on 6" Ctrs.	12	1	10	36
BC-603-18	2.58	3	Plug-Ins on 18" Ctrs.	2	1	10	19
BC-606-18	3.72	6	Plug-Ins on 18" Ctrs.	4	1	10	35
BC-609-18	5.40	9	Plug-Ins on 18" Ctrs.	6	1	10	51

No. BC-615 Fill-In Strip

A fill-in blank raceway to fill-in ends, corners, behind radiators or other inaccessible places where Plug-Ins could not be used. Six-foot length plain wire raceway to fill-in or for low potential wiring.

Packed 1 length in unit package; 10 lengths in std. pkg. No. BC-615, Weight per Std. Pkg., 29 Lb. per length \$1.92

Fittings

Back Connection Junction Boxes



No. BC-618 is for connecting A.B.C. cable or Flexsteel conduit. Has 45° swivel set screw connector in back. Unwired. Length, 6 inches.

No. BC-628 has threaded hub in back for standard connectors. Unwired. Length, 6 inches.

Packed 1 in unit package; 10 in standard package. Weight per standard package, 5 3/4 pounds.

No. BC-618	BC-628
Each..... \$.72	.72

Straight End Junction Boxes



No. BC-617 is for connecting A.B.C. cable or Flexsteel conduit. Has straight set screw connector which is interchangeable at the end for right or left hand. Unwired. Size over all, 2 1/16 inches; 1 1/2-inch housing.

No. BC-627 has threaded hub for standard connectors which is interchangeable at ends for right or left hand. Unwired. Size over all, 2 1/16 inches; 1 1/2-inch housing.

Packed 1 in unit package; 5 in standard package. Weight per standard package, 2 3/4 pounds.

No. BC-617	BC-627
Each..... \$.66	.66

No. BC-637 90° Exterior Blank Elbows



Unwired. Wall surface, 1 3/8 x 1 3/8 inches. Packed 1 in unit package; 10 in standard package.

Weight per standard package, 4 pounds. No. BC-637..... each \$.32

No. BC-638 90° Interior Blank Elbows



Unwired. Wall surface, 1 3/8 x 1 3/8 inches. Packed 1 in unit package; 10 in standard package.

Weight per standard package, 4 pounds. No. BC-638..... each \$.32

No. BC-644 Joiner Couplings



Covers open ends of adjoining parts. Length, 2 3/16 inches. Packed 10 in unit package; 50 in standard package.

No. BC-644, Weight per Std. Pkg., 2 1/2 Lb..... each \$.08

No. BC-680 End Fittings



Covers open end of Plug-In Strip run. Length, 1 5/8 inches. Packed 1 in unit package; 10 in standard package.

No. BC-680-L Left	BC-680-L	BC-680-R Right
Each..... \$.10	.10	.10

Type CR National Plug-In Strips
Chair Rail Type



Each length of Plug-In Strip is furnished with 2 No. 690 copper jumpers, a suitable quantity of No. 607 mounting clips and No. 6 wood screws 1 1/4 and 2 inches long.

No.	Per Lgth.	Lgth. Ft.	Description	Plug-Ins per Lgth. (Out-let)	Lgths. Unit Pkg.	Lgths. per Std. Pkg.	Wt. per Lb. Std. Pkg.
CR-601 1/2-18	\$3.00	1 1/2	Plug-In in Ctr.....	1	1	10	15
CR-603 -18	3.30	3	Plug-Ins on 18" Ctrs.	2	1	10	32
CR-606 -18	3.96	6	Plug-Ins on 18" Ctrs.	4	1	10	66
CR-609 -18	5.76	9	Plug-Ins on 18" Ctrs.	6	1	10	90

No. CR-615 Fill-In Strip

A fill-in blank raceway to fill-in ends, corners, behind radiators or other inaccessible places where the more expensive Plug-Ins could not be used.

Six-foot length plain wire raceway to fill-in or for low potential wiring.

Packed 1 length in unit package; 10 lengths in standard package.

Weight per standard package, 62 pounds. No. CR-615.....per length \$2.52

Fittings

No. CR-618 Back Connection Junction Boxes



For connecting A.B.C. cable or Flexsteel conduit. Has 45° swivel set screw connector in back. Unwired.

Length, 6 inches. Packed 1 in unit package; 5 in standard package.

Weight per standard package, 3 1/2 pounds. No. CR-618..... each \$.98

No. CR-627 Straight End Junction Boxes

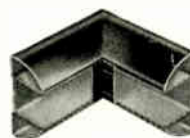


Has threaded hub in one end for standard connectors. Unwired.

Size over all, 2 1/16 inches; 1 1/2-inch housing.

Packed 1 in unit package; 5 in standard package. Weight per standard package, 6 1/2 pounds. No. CR-627..... each \$.68

No. CR-638 90° Interior Blank Elbows



Unwired. Exposed dimensions, 1 3/8 x 1 3/8 inches. Concealed dimensions, 2 1/8 x 2 1/8 inches. Packed 1 in unit package; 5 in standard package.

Weight per standard package, 4 pounds. No. CR-638..... each \$.56

No. CR-680 End Fittings



Covers open end at termination of Plug-In Strip run. Length, 1 5/8 inches. Packed 1 in unit package; 10 in standard package.

Weight per standard package, 2 3/4 pounds. No. CR-680..... each \$.08

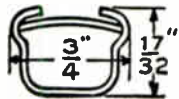
No. CR-644 Joiner Couplings



Covers open ends of adjoining parts. Length, 2 3/16 inches. Packed 10 in unit package; 50 in standard package.

Weight per standard package, 27 pounds. No. CR-644..... each \$.08

No. 500 Wiremold Raceways

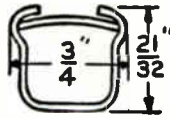


Made of .040-inch gage steel.
Standard finish, Wiremold buff.
Furnished in 10-foot lengths.

Packed 100 feet in a carton. Weight per 1000 feet, 320 pounds.

Wire No.	10	12	14	16	18	19
Single Conductor Capacity	2	2	3	6	6	..
Twisted Pair Capacity	..	..	2	2	3	..
No. 500	per foot \$.098					

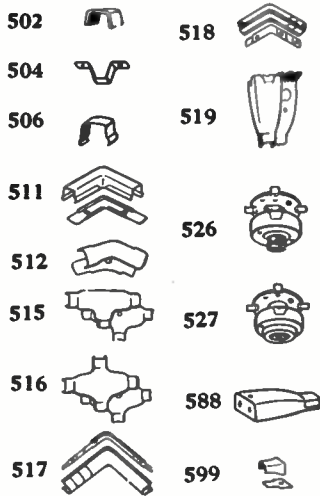
No. 700 Wiremold Raceways



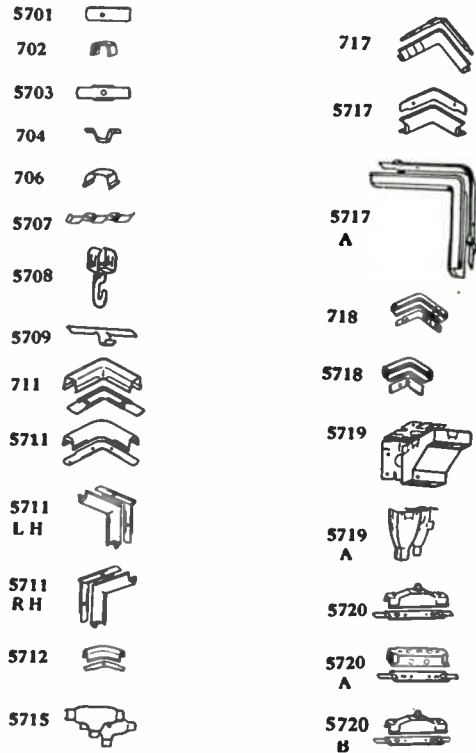
Made of .040-inch gage steel.
Standard finish, Wiremold buff.
Furnished in 10-foot lengths.
Packed 100 feet in a carton. Weight per 1000 feet, 360 pounds.

Wire No.	10	12	14	16	18	19
Single Conductor Capacity	2	4	4	10	10	..
Twisted Pair Capacity	..	..	..	4	4	4
No. 700	per foot \$.112					

No. 500 Series Wiremold Fittings



Nos. 5700 and 700 Series Wiremold Fittings

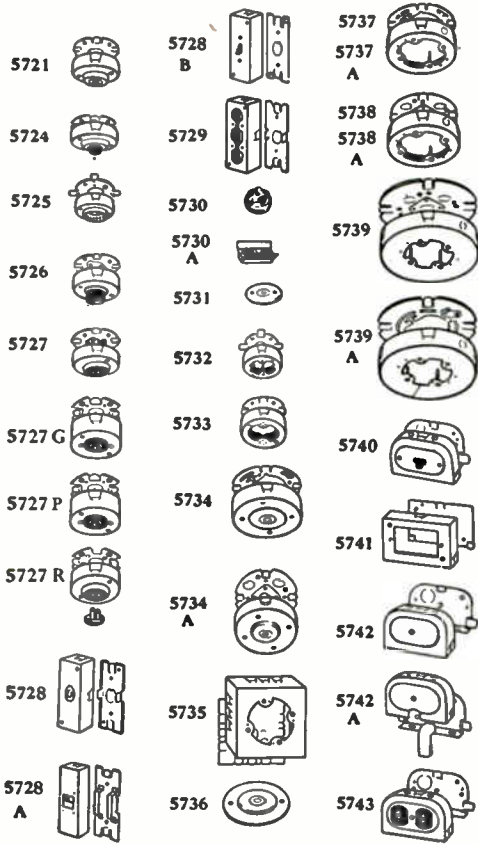


Fittings with numbers beginning with 57 are for use with No. 500 and 700 Wiremold.

No.	Per 100	Description	Std. Pkg.		Unit Qty.	No.	Per 100	Description	Std. Pkg.		Unit Qty.
			Qty.	Wt. Lb.					Qty.	Wt. Lb.	
500F	\$114.00	Flexible Section 18 In. Long...	10	5 1/4	1	700F	\$114.50	Flexible Section 18 In. Long..	10	5 3/4	1
502	1.80	Bushing	200	1 1/2	50	5701	1.70	Coupling	200	3 3/4	50
504	1.20	One or Two Hole Strap	500	8 3/4	50	702	2.00	Bushing	200	3 3/4	50
506	1.20	Connection Cover	200	1 3/4	50	5703	2.00	Supporting Clip	500	12 3/4	50
511	14.80	90° Flat Elbow	50	7 1/4	5	704	2.00	One or Two Hole Strap	500	15 3/4	50
512	16.80	45° Flat Elbow	20	1 1/2	5	706	1.30	Connection Cover	200	2	50
515	21.70	Tee	50	8 3/4	5	5707	5.00	Multiple Strap	200	6 1/2	50
516	27.20	Cross	20	3 3/4	5	5708	18.80	Fixture Hook	20	1 1/2	10
517	17.00	Adjustable Internal Elbow	50	9 1/2	5	5709	8.80	Ground Clamp	20	3 5/8	5
518	16.00	Adjustable External Elbow	50	7	5	711	16.00	90° Flat Elbow	50	8 3/8	5
519	40.30	Corner Box	20	4 1/4	5	5711	22.00	90° Flat Elbow	100	17	10
526	60.00	Keyless Receptacle, 660W, 250V	50	19 1/2	5	5711LH	30.00	Internal Twisted Elbow for 90° Twist with 90° Turn...	20	3 3/4	5
527	81.40	Plug Receptacle, 15A, 125V, 10A, 250V	50	16 3/4	5	5711RH	30.00	Internal Twisted Elbow for 90° Twist with 90° Turn...	20	3 3/4	5
588	31.50	Open Work Coupling	20	3 3/4	5	5712	22.50	45° Flat Elbow	20	1 3/4	5
599	3.70	Connector for Metal Moulding Fittings	20	1	5	5715	27.50	Tee	50	9 3/4	5
600	*4.00	Bender for Nos. 200, 500, 700	1	2 1/2	..	717	18.00	Adjustable Internal Elbow with One Scored Leg	50	10 1/2	5
WE	50.00	Wiremold Enamel in 1/2-Pint Cans	10	6 1/4	1	5717	24.00	Internal Elbow	100	15 3/4	10
						5717A	50.00	Internal Pull Elbow	10	4 1/4	1
						718	17.00	Adjustable External Elbow with One Scored Leg	50	8	5
						5718	24.00	External Elbow	100	11	10
						5719	45.90	Corner Box	20	8 1/4	5
						5719A	40.00	Streamline Corner Box	20	5 1/2	5
						5720	47.90	Narrow Fitting	50	10 1/4	5
						5720A	55.00	Narrow Fitting	20	4 3/4	5
						5720B	47.90	Narrow Fitting	50	10	5

*Price each.

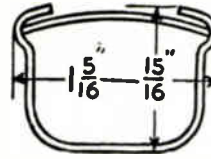
Nos. 5700 and 700 Series Wiremold Fittings
Continued



Fittings with numbers beginning with 57 are for use with Nos. 500 and 700 Wiremold.

No.	Per 100	Description	Qty.	Std. Pkg. Wt. Lb.	Unit Pkg. Qty.
5721	\$35.00	Utility Box.....	50	16 1/4	5
5724	49.00	Fixture Rosette.....	20	7 1/4	5
5725	80.00	Receptacle Base, 660W, 250V..	50	20 3/4	5
5726	60.00	Keyless Receptacle, 660W, 250V.....	50	20 3/4	5
5727	81.40	Plug Receptacle, 15A, 125V, 10A, 250V.	50	19 1/2	5
5727G	180.00	Receptacle, 2-Wire, 3-Pole with Ground.	10	5 1/4	1
5727P	180.00	Receptacle, 3-Wire, 3-Pole without Ground.....	10	5 1/2	1
5727R	146.00	Radio Receptacle, Plug Cap Furnished.....	10	4 1/2	1
5728	40.00	Utility Box.....	50	17 1/2	10
5728A	53.50	Lumiline Lampholder Box.....	10	3 3/4	1
5728B	95.80	Single Pole Switch with Box, 10A, 125V, 5A, 250V.....	10	4 3/4	1
5729	47.50	Utility Box, Condulet Type.....	20	6 3/4	10
5730	20.00	Connector Block, 660W, 250V.....	20	1 1/8	5
5730A	40.00	Connector Block, 660W, 250V.....	20	1 1/8	5
5731	11.70	Blank Cover.....	50	3 3/4	5
5732	40.00	Outlet Box.....	50	13 1/4	5
5733	41.20	Outlet Box.....	50	14 1/4	5
5734	65.00	Blank Extension Box.....	20	13 1/8	5
5734A	62.50	Utility Box.....	20	13 1/2	5
5735	88.80	Distribution Box.....	20	17 1/2	1
5736	17.00	Blank Cover.....	50	9 3/4	5
5737	65.00	Extension Box.....	50	27 1/2	5
5737A	65.00	Extension Box.....	50	38 1/2	5
5738	59.00	Fixture Box.....	50	32 1/8	5
5738A	59.00	Fixture Box.....	50	41 1/2	5
5739	72.80	Fixture Box.....	20	21 3/4	5
5739A	84.00	Extension Box.....	20	20 3/4	5
5740	102.50	Single Pole Switch and Box, 10A, 125V, 5A, 250V.....	20	10 1/2	1
5741	68.00	Switch and Receptacle Box... ..	20	11 3/4	1
5742	56.70	Junction Box.....	20	8	5
5742A	78.70	Adjustable Junction Box.....	20	8 1/4	5
5743	88.80	Duplex Receptacle and Box, 15A, 125V, 10A, 250V.....	20	11	5

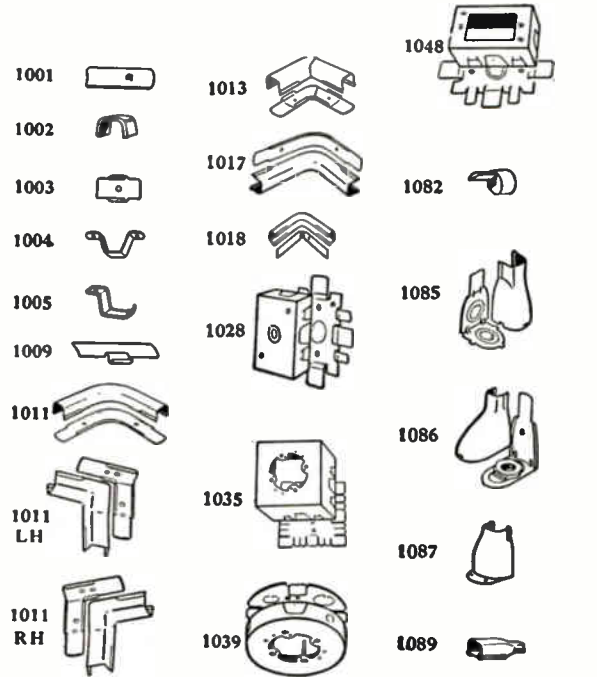
No. 1000 Wiremold Raceways



Made of .050-inch gage steel.
Standard finish, Wiremold buff.
Furnished in 10-foot lengths.
Packed 100 feet in a carton. Weight per 100 feet, 80 pounds.

Wire No.	8	10	12	14	16	18	19
Single Conductor Capacity...	5	6	10	10	24	24	..
Twisted Pair Capacity.....	..	..	..	..	10	10	11
No. 1000.....	per foot \$.25						

No. 1000 Series Wiremold Fittings



No.	Per 100	Description	Qty.	Std. Pkg. Wt. Lb.	Unit Pkg. Qty.
1000F	\$134.50	Flexible Section 18 In. Long	10	11 1/4	1
1001	5.00	Coupling.....	100	6 3/4	10
1002	4.00	Bushing.....	100	1 1/4	10
1003	4.00	Supporting Clip.....	100	4 1/4	10
1004	7.80	Two Hole Strap.....	100	5	10
1005	7.80	One Hole Strap.....	100	3 1/2	10
1009	17.50	Adjustable Hanger Assembly.....	Use No. 1108		
1011	42.50	Hanger Clamp.....	Use No. 1108A		
1011LH	76.00	Ground Clamp.....	10	3/4	1
1011RH	76.00	90° Flat Elbow.....	10	7	1
1013	52.50	90° Twist with 90° Turn..	10	5 1/4	1
1017	60.00	Internal Twisted Elbow for 90° Twist with 90° Turn..	10	5 1/4	1
1018	38.80	Adjustable Flat Elbow....	10	5 1/4	1
1028	76.30	Internal Elbow.....	10	8 3/8	1
1035	124.30	External Elbow.....	10	4	1
1039	101.30	Utility Box.....	10	9 1/4	1
1048	115.00	Distribution Box.....	10	19 1/4	1
1082	62.50	Fixture Box.....	10	11 1/2	1
1085	32.50	Switch and Receptacle Box.	10	9	1
1086	78.80	Pipe Connector.....	10	4	1
1087	42.00	Combination Connector... ..	10	4 1/8	1
1089	15.00	Adjustable Offset Connector.....	10	6 3/4	1
1085	32.50	Kick Plate.....	10	5 1/2	1
1086	78.80	Reducing Connector, From No. 1000 Twistout to No. 500 or No. 700 Wiremold..	20	2 3/4	5

No. 1500 Pancake Wiremold Overfloor Raceways

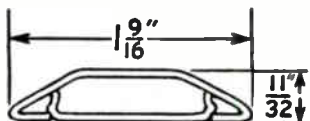


Has supporting screw knockouts approximately 8-inch centers.

Made of .040-inch gage steel. Standard finish, galvanized.

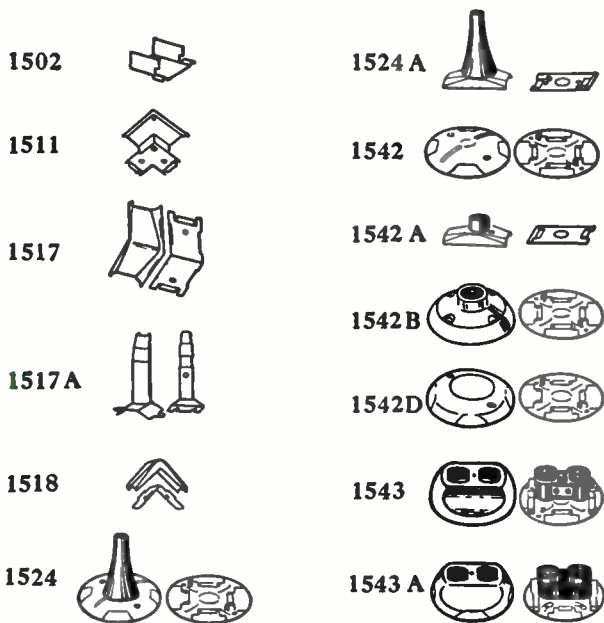
Furnished in 10-foot lengths.

Packed 100 feet in a carton. Weight per 100 feet, 50 pounds.



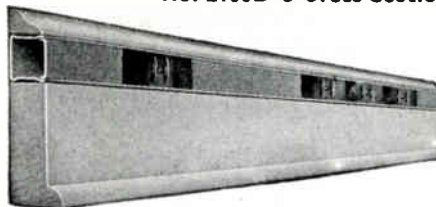
Wire No.....	12	14	16	18	22
Single Conductor Capacity.....	4	4	6	8	..
Twisted Pair Capacity.....	..	..	3	4	5
No. 1500.....	per foot \$.24				

No. 1500 Series Wiremold Fittings



No.	Per 100	Description	Std. Qty.	Pkg. Wt. Lb.	Unit Qty.
1500WC	\$.60	Wire Clip.....	200	1/2	20
1502	4.00	Bushing.....	50	1/2	10
1511	20.00	90° Flat Elbow.....	20	4	5
1517	20.00	Internal Elbow.....	20	4 3/4	5
1517A	31.00	Internal Elbow.....	20	3 3/4	5
1518	24.00	External Elbow.....	20	5	5
1524	90.00	Telephone Outlet.....	10	5 3/4	1
1524A	80.00	Narrow Telephone Outlet.....	10	4	1
1542	40.00	Junction Box.....	20	6 3/4	5
1542A	34.00	Narrow Junction Box, 1/2-Inch Bushing.....	20	5	5
1542B	254.00	Brass Base for Floor Receptacle Having 3/4-Inch Stem.....	10	9 1/2	1
1542D	40.00	Junction Box, Deep Type.....	20	7 1/2	5
1543	110.00	Duplex Receptacle, 15A, 125V, 10A, 250V.....	10	7	1
1543A	280.00	Polarized Duplex Receptacle, 3-Wire, 15A, 125V, 10A, 250V.....	10	7 1/2	1

Plugmold The Wiremold Continuous Outlet System No. 2100B-C Cross Section

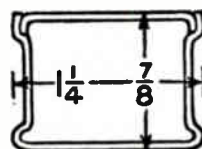


This Plugmold continuous outlet system is for home, office or work shop. Plugmold may be mounted on or set into the surface. The illustration shows it mounted on top of base board. It may also be set into plaster or cement.

Made of .040-inch gage steel. Standard finish, Wiremold buff.

Wire No.....	12	14	16	18	22
Single Conductor Capacity.....	6	6	18	20	..
Twisted Pair Capacity.....	..	..	8	8	12

No. 2100B Channel



Has 1/2-inch entrance knockouts approximately 8-inch centers. Has supporting screw knockouts approximately 8-inch centers.

Furnished in 10-foot lengths.

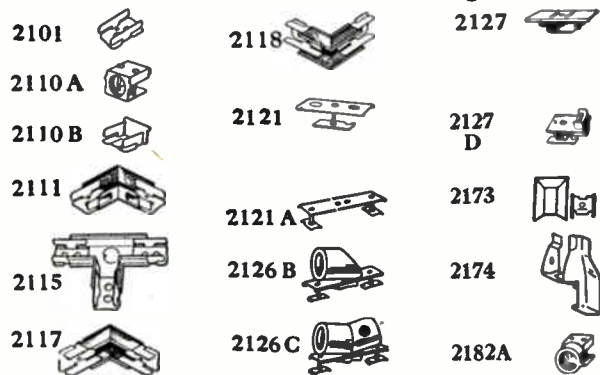
Packed 100 feet in a carton. Weight per 100 feet, 45 pounds.

No. 2100B.....per foot \$.14

No. 2100C Cover

Furnished in 5-foot lengths. Packed 100 feet in a carton. No. 2100C Weight per 100 Feet 21 Pounds.....per foot \$.10

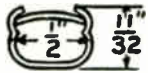
No. 2100 Wiremold Fittings



No.	Per 100	Description	Std. Qty.	Pkg. Wt. Lb.	Unit Qty.
2101	\$4.70	Coupling.....	20	2	5
2110A	18.50	End Connector, 1/4-Inch Female Bushing.....	20	3	5
2110B	8.70	Blank End Fitting.....	20	2	5
2111	28.00	90° Flat Elbow.....	20	5	5
2115	70.00	Tee, 1/2-Inch Knockout.....	10	4	1
2117	29.30	Internal Elbow.....	20	5	5
2118	32.50	External Elbow.....	20	5	5
2121	17.00	Telephone Outlet.....	20	1 1/2	5
2121A	22.00	Socket Attachment Fitting.....	20	1 1/2	5
*2127	35.00	Plug Receptacle, Black or Brown, 15A, 125V, 10A, 250V.....	20	2	1
2127	52.00	Plug Receptacle, Ivory, Cream and Wiremold Buff, 15A, 125V, 10A, 250V.....	20	2	1
2127D	40.00	Lumiline Single Receptacle, 660W, 250V.....	20	1	1
2173	24.00	Offset Connector for No. 2100 to No. 1500 Wiremold.....	10	1 1/4	1
2174	32.00	Takeoff Connector for No. 2100 to No. 500 or No. 700 Wiremold.....	10	2	1
2182A	50.00	End Fitting, 3/4-Inch Female Bushing.....	20	3 1/2	5
2191	110.00	12-Inch Reflector, Steel Chrome Finish.....	20	8 3/4	5
2191A	100.00	12-Inch Reflector, Aluminum Diffuse Finish.....	20	4 1/4	5
2192	142.00	18-Inch Reflector, Steel Chrome Finish.....	20	12 1/4	5
2192A	136.00	18-Inch Reflector Aluminum Diffuse Finish.....	20	6	5
2195	19.30	Reflector End Cap.....	20	1/2	2
2196	6.60	Reflector Stop Gap.....	50	1/2	10

*Brown furnished unless otherwise specified.

No. 200 Wiremold Raceways

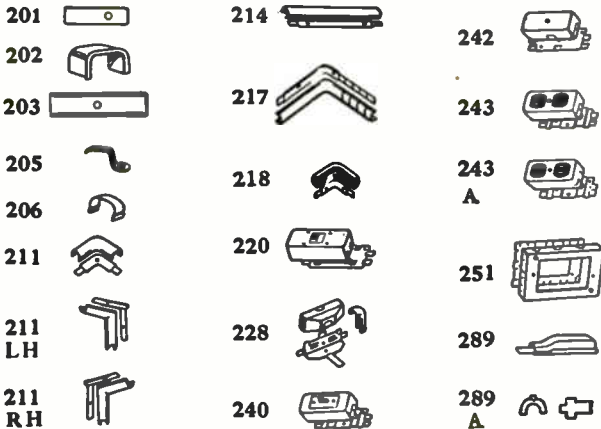


Made of .025-inch gage steel.
Standard finish. Wiremold buff.
Furnished in 5-foot lengths.
Packed 100 feet in a carton. Weight per 1000 feet, 180 pounds.

Wire No.....	14	16	18	19
Single Conductor Capacity.....	2	4	4	..
Twisted Pair Capacity.....	..	2	2	2

No. 200.....per foot \$.085

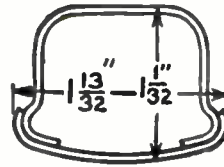
No. 200 Series Midget Size Wiremold Fittings



No.	Per 100	Description	Srv. Qty.	Pkg. Wt. Lb.	Unit Pkg. Qty.
200F	\$112.00	Flexible Section 18 In. Long.	10	3 1/2	1
201	1.30	Coupling.....	50	1/4	10
202	1.60	Bushing.....	200	1/2	50
203	1.80	Supporting Clip.....	50	1/4	10
205	1.20	One Hole Strap.....	50	1/4	10
206	1.20	Connection Cover.....	50	1/4	10
211	14.10	90° Flat Elbow.....	50	2 1/4	5
211LH	30.00	Internal Twisted Elbow for 90° Twist with 90° Turn..	20	1 1/2	5
211RH	30.00	Internal Twisted Elbow for 90° Twist with 90° Turn..	20	1 1/2	5
214	15.00	Pull Box.....	20	1 1/2	5
217	17.50	Adjustable Internal Elbow with One Scored Leg....	50	5 1/2	5
218	15.00	External Elbow.....	50	2 1/4	5
220	50.00	Lumiline Lampholder Box..	10	2	1
228	34.00	Adjustable Junction Box...	20	2 1/8	5
240	87.50	Single Pole Switch with Box, 10A, 125V, 5A, 250V.....	20	5 3/4	1
242	42.50	Utility Box.....	20	3 1/4	1
243	65.60	Duplex Receptacle, 15A, 125V, 10A, 250V.....	20	4 1/2	1
243A	148.50	Radio Receptacle for Power, Ground, Antennae; Ground, Antennae Plug Cap Furnished.....	20	5 1/2	1
251	47.50	Extension Adapter.....	20	5 1/2	1
289	13.80	Reducing Connector, from No. 500 Twistout to No. 200 Wiremold.....	20	3/4	5
289A	2.00	Adapter.....	50	1/2	10
600	*4.00	Bender for Nos. 200, 500, 700	1	2 1/2	..
WE	50.00	Wiremold Enamel in 1/2-Pint Cans.....	10	6 1/4	1

*Price each.

No. 1100 Wiremold Lighting Strip



No. 1100B-C Cross Section

Made of .050-inch gage steel.
Has supporting screw knock-outs approximately 8-inch centers.
Standard finish, Wiremold buff.

Wire No.....	8	10	12	14	16	18	19
Single Conductor Capacity.....	5	8	10	10	24	24	..
Twisted Pair Capacity.....	..	..	..	..	10	10	11

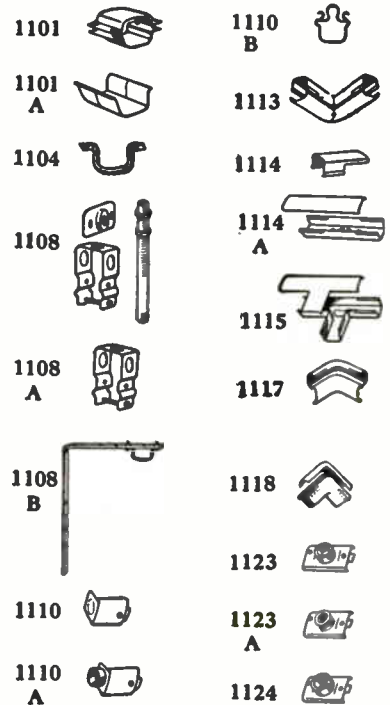
No. 1100B Channel

Furnished in 10-foot lengths.
Packed 100 feet in a carton. Weight per 100 feet, 57 pounds.
No. 1100B.....per foot \$.165

No. 1100C Cover

Furnished in 10-foot lengths.
Packed 100 feet in a carton. Weight per 100 feet, 26 pounds.
No. 1100C.....per foot \$.082

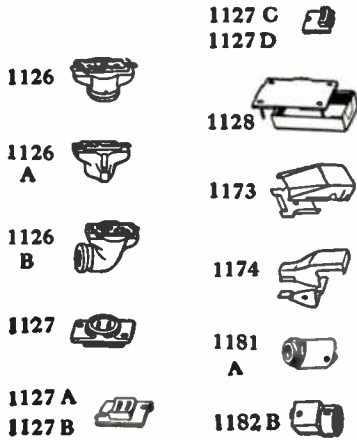
No. 1100 Series Wiremold Fittings



No.	Per 100	Description	Srv. Qty.	Pkg. Wt. Lb.	Unit Pkg. Qty.
1101	\$23.80	Coupling.....	20	3 3/4	5
1101A	8.00	Inside Coupling.....	20	1 3/4	5
1104	7.80	Two Hole Strap.....	50	2 3/4	10
1108	110.00	Adjustable Hanger Assembly....	10	8 1/8	1
1108A	22.80	Hanger Clamp.....	20	1 1/2	5
1108B	55.10	Bracket Hanger.....	10	11 3/4	2
1110	19.20	End Fitting.....	20	1 1/4	5
1110A	33.00	End Connector Fitting.....	20	2 1/2	5
1110B	11.90	Blank End Fitting.....	20	1/2	5
1113	60.00	Flat Elbow, 56° to 128°.....	10	5 3/4	1
1114	28.00	Turn-Over Connector, No. 1100 to No. 1000.....	20	3 1/8	2
1114A	28.00	Combination Connector, 1/2-Inch Knockout.....	20	6 3/4	5
1115	37.50	Tee, 1/2-Inch Knockout.....	10	5	1
1117	44.00	Internal Elbow.....	10	4 1/4	1
1118	54.00	External Elbow.....	10	2 3/4	1
1123	40.00	Cover Fitting.....	20	2 1/4	5
1123A	40.00	Cover Fitting.....	20	1 3/4	5
1124	42.00	Cover Fitting.....	20	2 3/4	5

No. 1100 Series Wiremold Fittings

Continued

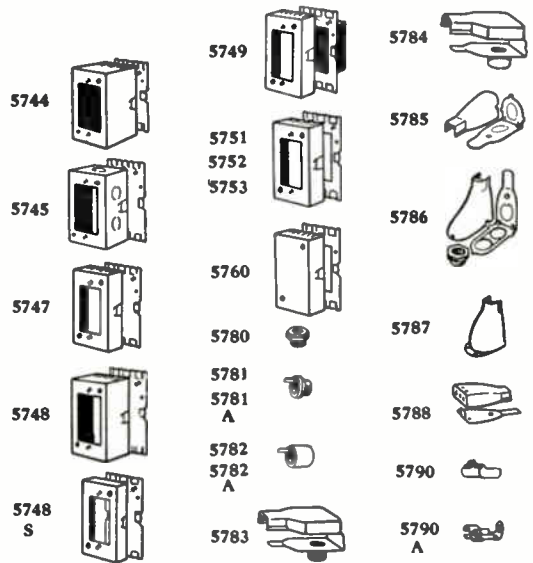


No.	Per 100	Description	Srd. Qty.	Pkg. Wt. Lb.	Unit Pkg. Qty.
1126	\$54.00	Keyless Socket, 660W, 250V	20	6 ³ / ₄	1
1126A	58.00	Bayonet Reflector Socket, 660W, 250V	20	8	1
1126B	100.00	Angle Socket, 660W, 250V	10	7 ¹ / ₈	1
1127	38.00	Plug Receptacle, 15A, 125V, 10A, 250V	20	2	1
*1127A	50.00	Lumiline Duplex Receptacle, One Terminal	20	1 ¹ / ₄	1
*1127B	58.00	Lumiline Duplex Receptacle, Two Terminals	20	1 ¹ / ₂	1
*1127D	40.00	Lumiline Single Receptacle	20	3 ³ / ₄	1
1128	90.00	Utility Box	10	5 ¹ / ₄	1
1173	36.60	Adjustable Offset Connector, No. 1100 to No. 1500	10	2 ¹ / ₂	1
1174	32.00	Takeoff Connector, No. 1100 to No. 500 or No. 700	10	2 ¹ / ₈	1
1181A	40.00	Box Connector	20	2 ¹ / ₂	5
1182B	50.00	1-Inch Pipe Connector, Female	20	4	5
610	†6.00	Mitre Box	1	3 ³ / ₄	2
611	50.00	Mitre Box Guide Fingers	10	1 ¹ / ₂	2
1191	110.00	12-Inch Reflector, Steel Chrome Finish without No. 1100C Capping	20	8 ¹ / ₂	5
1191C	120.00	12-Inch Reflector, Steel Chrome Finish with No. 1100C Capping	20	12 ³ / ₄	5
1191A	100.00	12-Inch Reflector, Aluminum Diffuse Finish without No. 1100C Capping	20	4 ¹ / ₄	5
1191AC	110.00	12-Inch Reflector, Aluminum Diffuse Finish with No. 1100C Capping	20	8 ¹ / ₄	5
1192	142.00	18-Inch Reflector, Steel Chrome Finish without No. 1100C Capping	20	7 ¹ / ₂	5
1192C	156.00	18-Inch Reflector, Steel Chrome Finish with No. 1100C Capping	20	19 ¹ / ₄	5
1192A	136.00	18-Inch Reflector, Aluminum Diffuse Finish without No. 1100C Capping	20	6	5
1192AC	148.00	18-Inch Reflector, Aluminum Diffuse Finish with No. 1100C Capping	20	12 ¹ / ₂	5
1193A	100.00	12-Inch Reflector, Aluminum Diffuse Finish	20	4 ³ / ₄	5
1194A	136.00	18-Inch Reflector, Aluminum Diffuse Finish	20	7 ¹ / ₄	5
1195	14.60	Reflector End Cap	20	1 ¹ / ₂	2
1195A	19.30	Reflector End Cap	20	1 ¹ / ₂	2
1196	6.60	Stop Gap Fitting	50	1 ¹ / ₂	10
1196A	6.60	Stop Gap Fitting	50	1 ¹ / ₂	10

*660 W, 250 V.
†Price each.

Nos. 5700 and 700 Series Wiremold Fittings

Continued



Fittings with numbers beginning with 57 are for use with No. 500 and 700 Wiremold.

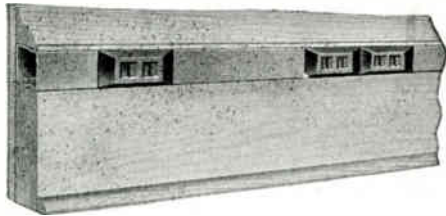
No.	Per 100	Description	Srd. Qty.	Pkg. Wt. Lb.	Unit Pkg. Qty.
5744	\$97.50	Extra Deep Switch and Receptacle Box	20	19 ¹ / ₂	1
5744-2	165.00	Extra Deep Switch and Receptacle Box	10	12 ¹ / ₂	1
5744-3	195.00	Extra Deep Switch and Receptacle Box	10	15 ³ / ₄	1
5745	70.80	Combination Switch and Receptacle Box	20	13 ¹ / ₂	1
5747	57.00	Shallow Switch and Receptacle Box	20	11 ¹ / ₂	1
5747-2	127.50	Shallow Switch and Receptacle Box	10	8 ¹ / ₂	1
5747-3	152.50	Shallow Switch and Receptacle Box	10	10 ¹ / ₄	1
5748	63.00	Switch and Receptacle Box	20	13 ¹ / ₂	1
5748-2	132.50	Switch and Receptacle Box	10	10	1
5748-3	165.00	Switch and Receptacle Box	10	12 ¹ / ₄	1
5748S	55.00	Shallow Receptacle Box	20	9 ³ / ₄	1
5749	105.10	Switch and Receptacle Box	20	12 ¹ / ₂	1
5751	57.00	Flush Type Extension Adapter	20	8 ¹ / ₂	1
5752	143.80	Flush Type Extension Adapter	10	6	1
5753	172.50	Flush Type Extension Adapter	10	7 ¹ / ₂	1
5760	66.60	Blank Extension Box	20	9 ¹ / ₂	1
5780	14.00	Special Nipple	50	2 ¹ / ₈	5
5781	22.00	Box Connector	50	2 ³ / ₄	5
5781A	32.50	Box Connector	20	2 ¹ / ₈	5
5782	25.00	Pipe Connector	50	4 ¹ / ₂	5
5782A	35.00	Pipe Connector	20	2 ³ / ₄	5
5783	36.30	Elbow Box Connector, Male	20	2 ¹ / ₂	5
5784	36.30	Elbow Pipe Coupling, Female	20	3 ¹ / ₂	5
5785	22.00	Combination Connector	50	7 ¹ / ₈	5
5786	52.50	Adjustable Offset Connector	20	5 ¹ / ₂	5
5787	38.00	Kick Plate	10	3 ³ / ₄	1
5788	35.40	Open Work Coupling	20	4 ³ / ₄	5
5790	10.00	Armored Cable Connector	50	2	5
5790A	10.00	Armored Cable Connector	50	3	5
600	*4.00	Bender for Nos. 200, 500, 700	1	2 ¹ / ₂	1
WE	50.00	Wiremold Enamel in 1/2-Pint Cans	10	6 ¹ / ₄	1

*Price each.

Midget Plugmold Raceway

The Wiremold Continuous Outlet System

No. 1900B-C Cross Section

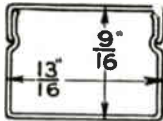


This Midget Plugmold continuous outlet system is for home, office or workshop. Midget Plugmold may be mounted on or set into the surface. The illustration shows it mounted on top of base board. It may also be set into plaster or cement.

Made of .025-inch gage steel. Standard finish, Wiremold buff.

Wire No.	14	18
Single Conductor Capacity	2	6
Twisted Pair Capacity		6

No. 1900B Channel



Has supporting screw knockouts approximately 8-inch centers.

Furnished in 5-foot lengths.

Packed 100 feet in a carton. Weight per 100 feet, 17 pounds.

No. 1900B..... per foot \$.07

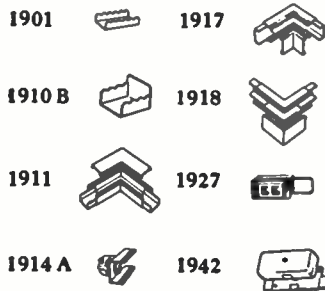
No. 1900C Cover

Furnished in 5-foot lengths.

Packed 100 feet in a carton. Weight per 100 feet, 11 pounds.

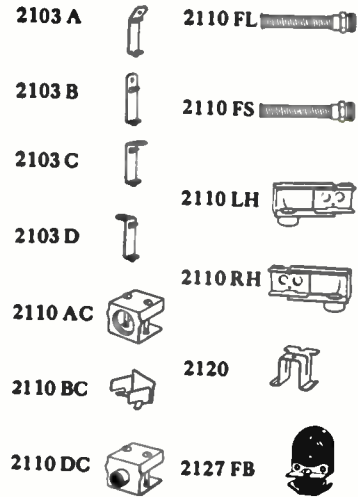
No. 1900C..... per foot \$.056

No. 1900 Midget Plugmold Fittings



No.	Per 100	Description	Strn. Pkg.		Unit Pkg. Qty.
			Qty.	Wt. Lb.	
1901	\$3.50	Coupling.....	20	1 1/4	5
1910B	7.20	Blank End.....	20	3/4	5
1911	27.00	90° Flat Elbow.....	20	5 3/4	5
1914A	26.60	Connector Fitting.....	20	5 3/4	5
1917	28.00	Internal Elbow.....	20	5 3/4	5
1918	28.50	External Elbow.....	20	5 3/4	5
1927	31.00	Receptacle, Brown.....	20	1 1/4	5
1927V	42.00	Receptacle, Ivory.....	20	1 1/4	5
1942	34.40	Junction Box.....	20	3 1/4	1

No. 2100 Wiremold Show Case and Wall Case Lighting Equipment



No. 2100-SB Channel

No knockouts. Satin chrome finish.

Furnished in 5-foot lengths.

Packed 50 feet in a carton. Weight per 50 feet, 22 pounds.

No. 2100-SB..... per foot \$.32

No. 2100-SC Cover

Not scored. Satin chrome finish.

Furnished in 5-foot lengths.

Packed 100 feet in a carton. Weight per 100 feet, 20 pounds.

No. 2100-SC..... per foot \$.21

Fittings

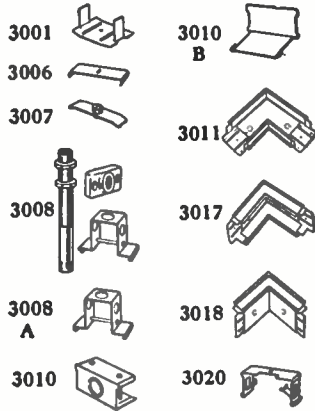
No.	Per 100	Description	Qty.	Strn. Pkg.	Wt. Lb.	Unit Pkg. Qty.
2100FS	\$140.00	Flexible Conduit, 3'....	5	2 1/2	1	
2100FL	210.00	Flexible Conduit, 5 1/2'..	5	4 1/2	1	
2103A	10.00	Clip, Straight.....	50	1 1/2	10	
2103B	10.00	Clip, 45° Angle.....	50	1 1/2	10	
2103C	10.00	Clip, 90° Angle.....	50	1 1/2	10	
2103D	10.00	Clip, U.....	50	1 1/2	10	
2110AC	28.00	End Connector.....	20	1 3/4	5	
2110BC	18.00	Blank End Fitting.....	20	3/4	5	
2110DC	34.00	End Connector.....	20	2 1/4	5	
2110LH	50.00	90° Angle Connector....	10	2 1/2	1	
2110RH	50.00	90° Angle Connector....	10	2 1/2	1	
2120	8.00	Receptacle Clamp.....	50	2 1/4	10	
2127D	40.00	Lumiline Receptacle...	20	1	1	
2127FB	40.00	Fluorescent Receptacle.	10	1 1/2	2	
2127FS	50.00	Starter Switch Base for FS-2 or FS-4 Starter..	10	3/4	2	
2197-12	90.00	*Reflector for 12" Lumiline	20	2 1/2	5	
2197-18	120.00	*Reflector for 18" Fluorescent or Lumiline.....	20	3 3/4	5	
2197-36	220.00	*Reflector for 36" Fluorescent.....	20	7 1/2	5	
2197S	10.00	Reflector Stop Gap.....	20	1/4	5	
21211	11.00	†Cover for 12" Lumiline..	10	2 1/4	1	
21212	17.40	†Cover for 18" Lumiline..	10	3 1/2	1	
21213	27.40	†Cover for 18" Fluorescent	10	3 3/4	1	
21214	43.00	†Cover for 36" Fluorescent	10	7 1/2	1	
21221	17.60	†Cover for 12" Lumiline..	10	2 1/4	1	
21222	34.00	†Cover for 18" Lumiline..	10	3 1/2	1	
21223	44.00	†Cover for 18" Fluorescent	10	3 3/4	1	
21224	76.00	†Cover for 36" Fluorescent	10	7 1/2	1	

*Concentrating Type, Specular Ox-al-ite.

†Wiremold finish.

‡Chromium finish.

No. 3000 Wiremold Fluorescent Lighting Equipment



No. 3000B Channel
 Furnished in 10-foot lengths. Has 1/2 and 3/4-inch entrance knockouts and supporting screw knockouts, approximately 8-inch centers.
 Packed 100 feet in a carton; weight, 86 pounds.
 No. 3000B, Wiremold Finish.....per foot **\$.30**
 No. 3000B, Aluminum Lacquer Finish.....per foot **.33**

No. 3000C Cover
 Furnished in 10-foot lengths. Not scored.
 Packed 100 feet in a carton; weight, 42 pounds.
 No. 3000C, Wiremold Finish.....per foot **\$.15**
 No. 3000C, Aluminum Lacquer Finish.....per foot **.17**

No.	Per 100	Description	Qty.	Srn.	Pkg.	Unit Wt. Lb.	Unit Pkg. Qty.
3001	\$7.00	Coupling.....	20	2	1/4	5	5
3001A	12.00	Coupling.....	20	8		5	5
3003	10.00	Supporting Clip.....	20	2	1/2	5	5
3006	2.00	Cover Clip.....	50	1	3/4	10	10
3007	8.50	Auxiliary Clamp.....	20	1		2	2
3008	126.00	Hanger Assembly with 3/8-Inch Pipe Nipple.....	10	8		1	1
3008A	26.00	Hanger Clamp.....	10	2		1	1
3008B	54.00	Transom Bar Hanger.....	5	7	1/4	1	1
3008C	90.00	Hanger Casting (Tapped for 3/8" Iron Pipe Size).....	1	1	1/2	..	..
3008D	18.00	Loop Hanger.....	20	1	3/4	2	2
3010	36.00	End Fitting.....	5	1		1	1
3010B	13.60	Blank End Fitting.....	5	1	1/2	1	1
3011	60.00	90° Flat Elbow.....	5	4		1	1
3017	62.00	External Elbow.....	5	4	1/2	1	1
3018	60.00	Internal Elbow.....	5	3		1	1
*3020	20.00	Receptacle Clamp.....	10	1	1/4	2	2
3020A	22.00	Receptacle and Starter Base Clamp.....	10	1	3/4	2	2
3091-18	276.00	†Specular Alzak 18" Reflector.....	10	6		1	1
3091-24	340.00	†Specular Alzak 24" Reflector.....	10	7	3/4	1	1
3091-36	484.00	†Specular Alzak 36" Reflector.....	5	6	1/4	1	1
3091-48	700.00	†Specular Alzak 48" Reflector.....	5	8	1/4	1	1
3091E	50.00	Reflector End Cap.....	20	1		5	5
3091S	20.00	Reflector Stop Gap.....	20	3	4	5	5
3092-18	200.00	†Specular Ox-al-ite 18" Reflector.....	10	6		1	1
3092-24	260.00	†Specular Ox-al-ite 24" Reflector.....	10	7	3/4	1	1
3092-36	350.00	†Specular Ox-al-ite 36" Reflector.....	5	6	1/4	1	1
3092-48	540.00	†Specular Ox-al-ite 48" Reflector.....	5	7	3/4	1	1
3092E	40.00	Reflector End Cap.....	20	1		5	5
3092S	16.00	Reflector Stop Gap.....	20	3	4	5	5
3093-18	276.00	‡Specular Alzak 18" Reflector.....	10	6		1	1
3093-24	340.00	‡Specular Alzak 24" Reflector.....	10	7	3/4	1	1
3093-36	484.00	‡Specular Alzak 36" Reflector.....	5	6	1/4	1	1
3093-48	700.00	‡Specular Alzak 48" Reflector.....	5	8	1/4	1	1

*Furnished with one No. 3006 clip.
 †Concentrating type. ‡Distributing type.
 No. 3000 Wiremold fittings available in aluminum lacquer finish at an additional cost.

Wiremold Beam Straps

Run regular Wiremold up to beam in usual manner and fasten base of internal elbows. Fasten beam strap base around beam. Base is fitted with screw-holes for supporting. Lay wires around beam then slide capping on base over wires and snap on internal and external elbow covers.

Beam Strap Base

Nos. 5700-BS and 1000-BS



Length, 31 1/2 inches. For beams 6-inch face by 8-inch sides to 11x11 inches inclusive.

No.	5700-BS	1000-BS
Per 100.....	\$13.00	19.00
Wiremold No.....	500 or 700	1000
Unit Package.....	10	5
Standard Package.....	50	25
Standard Package Weight.....lb.	12 3/4	12 1/2

Nos. 5700-BL and 1000-BL



Length, 46 1/2 inches. For beams 11x11 inches to 16x16 inches inclusive.

No.	5700-BL	1000-BL
Per 100.....	\$17.00	23.00
Wiremold No.....	500 or 700	1000
Unit Package.....	10	5
Standard Package.....	50	25
Standard Package Weight.....lb.	20 1/2	18 3/4

Beam Strap Covers



Furnished in 10-foot lengths.

No.	500-C	700-C	1000-C
Per 100.....	\$62.00	68.00	165.00
Wiremold No.....	500	700	1000
Unit Package.....	1	1	1
Standard Package.....	10	10	10
Standard Package Weight.....lb.	22	26	57

Parker Bakelite Outlet Box Covers

Rubber Sockets and Covers



No. 3056

Nos. 3056 and 4056 are covers with rubber pigtail weatherproof sockets mounted with covers.

No.	3056	4056
Less Than 100...per 100	\$17.03	19.51
Size.....inches	3 1/4	4
Wt. Std. Pkg...pounds	23	28

Packed 10 in a carton, 100 in a standard package.

No. 5051 Blank or Knockout Covers

For Nos. 5050, 5060, and 7050 boxes.
 No. 5051 may be used either as blank or by using knockouts for 1, 2, or 3. P. & S. Despard, Bryant IL or Hubbell LS wiring devices.



No. 5051

No. 5051-S same as No. 5051 with metal strap included.

Packed 10 in a carton, 100 in a standard package.

No.	5051	5051-S
Less Than 100...per 100	\$7.22	16.75
Wt. Std. Pkg.....lb.	6	13

No. 5053 Duplex Receptacle Covers

Packed 10 in a carton, 100 in a standard package.

Weight standard package, 6 pounds.
 No. 5053 (Less Than 100)...per 100 **\$7.22**



No. 5055 Toggle Switch Covers

Packed 10 in a carton, 100 in a standard package.

Weight standard package, 6 pounds.

No. 5055 (Less Than 100)...per 100 **\$7.22**



Parker Bakelite Outlet Boxes

Especially designed for use with non-metallic sheathed and CNX Type cable wiring and in all places where corrosive fumes are present. They resist corrosion from Ammonia fumes in cattle barns, acid fumes in Chemical or Industrial Plants; also any place where salt or moist air is present.

Bakelite boxes require no grounding. The sizes and design, except for clamps and wire knockout, same as standard metal outlet boxes. They take standard types of fixture studs. Two clamps supplied with each box.

Boxes have side knockouts and clamps to take 14-2, 14-3, and 12-2 non-metallic sheathed cable, and 14-2, 14-3, 12-2, and 12-3 CNX Type Cable and one 1/2 inch bottom knockout.

Packed 100 in standard package.



No. 4050

Octagonal Boxes

Depth 1 1/2 inches, 4 cable knockout in sides, one 1/2 inch knockout in bottom.

No.	3050	4050
Less Than 100	per 100 \$15.60	19.85
Size Box	inches 3 1/4	4
Wt. Std. Pkg.	pounds 22	27



No. 5050

Rectangular Boxes

Depth 2 1/8 inches, length 4 1/8 inches, has two cable knockout each end and each side, one 1/2 inch knockout in bottom.

No.	5050	*6050
Less Than 100	per 100 \$19.85	22.13
Wtd. Std. Pkg.	pounds 28	33

*Switch Type.

No. 7050 Rectangular Boxes

Switch type, 3 inches long, 2 inches deep, one cable knockout on each end and side, one 1/2 inch knockout in bottom. Weight standard package, 24 pounds.

No. 7050 (Less Than 100) per 100 \$19.32

Clamps

Packed standard package of 100. Weight, 4 pounds.
 No. 34, For Nos. 3050, 4050 and 7050 Boxes. *per 100 \$2.66
 No. 35, For Nos. 5050 and 6050 Boxes. *per 100 2.84
 *Less Than 100 piece.

Bakelite Outlet Box Covers

Standard color black. Packed 10 in a carton, 100 in a standard package.

Nos. 3051 and 4051 may be used either as pendant or blank cover. They have a knockout to convert from blank to pendant.



No. 3051

Blank or Pendant Covers

No.	3051	4051
Less Than 100	per 100 \$1.84	11.43
Size	inches 3 1/4	4
Wt. Std. Pkg.	lbs. 7	13



No. 3054

Surface Mounting Covers

No.	3052	4052
Less Than 100	per 100 \$8.05	11.65
Size	inches 3 1/4	4
Wt. Std. Pkg.	pounds 7	13



No. 3053

Receptacle Socket Covers

Nos. 3054 and 4054 are for mounting receptacle type sockets.

No.	3054	4054
Less Than 100	per 100 \$8.96	12.69
Size	inches 3 1/4	4
Wt. Std. Pkg.	lbs. 7	13



No. 3057

Duplex Receptacle Covers

No.	3053	4053
Less Than 100	per 100 \$8.96	12.69
Size	inches 3 1/4	4
Wt. Std. Pkg.	lbs. 7	13



Covers with Duplex Receptacles

Nos. 3057 and 4057 are covers with duplex receptacles mounted with cover.

No.	3057	4057
Less Than 100	per 100 \$18.66	22.40
Size	inches 3 1/4	4
Wt. Std. Pkg.	lbs. 22	28

No. 4055 Toggle Switch Covers

Size 4 inch. Weight standard package, 13 pounds.

No. 4055 (Less Than 100) per 100 \$11.65

No. 2900 National Redege Outlet Boxes

3/4-Inch Octagon—1 1/2-Inch Deep Inside



Sherardized finish.

Universal No. 24151. One 1/2-inch conduit bottom knockout; four 1/2-inch conduit side knockouts.

Packed 100 in standard package.

No. 2900, Weight per Std. Pkg., 46 Pounds...per 100 \$12.60

No. 2835 National Redege Shallow Ceiling Boxes

3 1/2-Inch Round—1/2-Inch Deep



Takes 3/4-inch standard covers.

Sherardized finish.

Universal No. 36113. Diameter and depth inside, 3 1/2 x 1/2 inches. One 1/2-inch conduit 8-loom knockout. With cover lugs.

Packed 100 in standard package.

No. 2835 Weight per Std. Pkg., 36 Pounds...per 100 \$12.50

National Outlet Box Covers

For 3/4-Inch Diameter Octagon and Round Boxes

Sherardized finish.

Actual outside diameter, 3 3/8 inches.

Packed 100 in standard package.

No. 28A



Raised, closed.
Depth, 3/8 inch.

No. 28AQ



Flat, with 1/2-inch knockout in center.

No.		Per 100	Wt. Lb. Std. Pkg.	No.		Per 100	Wt. Lb. Std. Pkg.
National	Universal			National	Universal		
28A	24C2	\$6.30	22	28AQ	24C6	\$6.30	21

No. 28AC



Flat, closed.

No. 28L



Raised, with 7/16-inch metal eyelet for drop-cord; 3/8-inch deep.

28AC	24C1	\$5.20	21	28L	24C12	\$6.30	22
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No. 2590 National Redege Outlet Boxes

4 1/16-Inch Square

Sherardized finish.

Packed 50 in a standard package.

Weight per standard package, 32 pounds.



No.		Per 100	Depth Inside In.	Knockouts Bottom Sides	
National	Universal			3-1/2"	8-1"
2590	72171	\$94.00	2 3/8	{ 3-1/2" } { 2-3/4" }	8-1"

No. 25AC National Outlet Box Covers

For 4 1/16-Inch Square Boxes

Flat, closed.

Sherardized finish.

Actual dimension, 4 3/8 inches square.



No.		Per 100	Std. Pkg.	Wt. Lb. Std. Pkg.
National	Universal			
25AC	72C1	\$38.00	25	13

National Redege Outlet Boxes

4-Inch Octagon



No. 2700



No. 2714

Sherardized finish.

Packed 50 in a standard package.

No.		Per 100	Depth Inside Inches	KNOCKOUTS		Wt. Lb. Std. Pkg.
National	Universal			Bottom	Sides	
2700	54151	\$16.50	1½	5-1½"	4-1½"	33
2701	54151	20.50	1½	3-1½"	4-1½"	33
2702	54151	20.50	1½	2-¾"	4-¾"	33
2714	54171	32.00	2⅝	3-1½"	2-¾"	41
2715	54171	32.00	2⅝	5-1½"	4-1½"	41
				2-¾"	4-¾"	41

No. 2704 National Redege Extension Rings

4-Inch Octagon



Sherardized finish.

Universal No. 55151. Depth inside, 1½ inches; four ½-inch knockouts.

Packed 50 in a standard package.

Weight per standard package, 22 pounds.

No. 2704.....per 100 \$28.00

National Outlet Box Covers

For 4-Inch Octagon and Round Boxes

Sherardized finish.

Actual outside diameter, 4⅛ inches.

Packed 100 in a standard package.

No. 26AC



Flat, closed.

No. 26L



Raised ⅝ inch, with ¾-inch metal eyelet for drop-cord.

No.		Per 100	Wt. Lb. Std. Pkg.	No.		Per 100	Wt. Lb. Std. Pkg.
National	Universal			National	Universal		
26AC	54C1	\$6.80	30	26L	54C12	\$8.40	37

No. 26AQ



Flat, with ½-inch knockout in center.

No. 26Q



Raised ⅝ inch, 2¾-inch opening, 1⅛-inch deep.

Lugs tapped 8-32 on 2¾-inch centers.

26AQ 54C6 \$7.70 30 26Q 54C3 \$10.00 26

No. 26AR

Raised, with ½-inch knockout in center; ⅝-inch deep.



No.		Per 100	Wt. Lb. Std. Pkg.
National	Universal		
26AR	54C7	\$8.40	37

National Redege Square Outlet Boxes

4-Inch Square—1½-Inch Deep



No. 2400

Double riveted. Made of No. 14 gage steel. Cover lugs recessed so head of screw is below box top; with ⅜-inch screws.

Underwriters' approval and meets Federal specification. Sherardized.

No.		Per 100	KNOCKOUTS		Std. Pkg.	Wt. Lb. Std. Pkg.
National	Universal		Bottom	Sides		
2400	52151	\$19.50	5½"	10½"	50	40
2401	52151	23.50	1½"	8¾"	50	40
2410	52151	23.50	4¾"	2½"		
			3½"	8½"	50	40
			2¾"	4¾"		

No. 2404 National Redege Extension Rings

4-Inch Square—1½-Inch Deep



Two tapped lugs at top and two untapped lugs at bottom. Sherardized.

2404 53151 \$30.00 10½" 50 30

National Outlet Box Covers

For 4-Inch Square Boxes

Sherardized. Actual dimensions, 4⅜ inches square. Packed 100 in standard package.

No. 24AC

Flat closed cover.



No.		Per 100	Wt. Lb. Std. Pkg.
National	Universal		
24AC	52C1	\$7.70	38

No. 24Q

Raised with 2¾-inch opening, ⅝ inch deep. Lugs tapped 8-32 on 2¾-inch centers.

Has extra slots and screw holes to permit either vertical or horizontal mounting.



24Q 52C3 \$10.20 33

National Flush Device Covers

For 4-Inch Square Boxes



No. 24HZ



No. 24HY



No. 24KY



No. 24H



No. 24K

Have extra slots and screw holes to permit either vertical or horizontal mounting on 4-inch square boxes.

Sherardized.

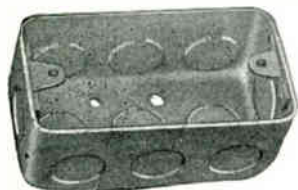
Actual outside dimension, 4⅜ inches square.

Packed 50 in a standard package.

No.		Per 100	Depth In.	No. of Devices	Wt. Lb. Std. Pkg.
National	Universal				
24HZ	52C62	\$14.00	1¼	1	13
24HY	52C13	15.00	1½	1	15
24KY	52C17	19.00	1½	2	12
24H	52C14	17.50	¾	1	18
24K	52C18	20.00	¾	2	20

National Redege Flush Device Boxes

4 1/8 Inches Long—2 1/8 Inches Wide



Lugs are tapped on 3/4 inch centers for all standard makes of push button and rectangular rotary switches and flush convenience outlets.

Two nail holes in bottom, and holes for fixture stud bolts.

National	No.	Uni- versal	Per 100	Depth In.	KNOCKOUTS			Std. Pkg.	Wt. Lb. Std. Pkg.
					Bottom	Sides	Ends		
2018	58351		\$18.00	1 1/2	3-1 1/2"	3-1 1/2"	1-1 1/2"	50	29
2020	58361		18.00	1 7/8	3-1 1/2"	3-1 1/2"	1-1 1/2"	50	31
2022	58371		18.00	2 1/8	3-1 1/2"	3-1 1/2"	1-1 1/2"	50	35

National Steel Covers for Flush Device Boxes



No. 20A



No. 20C



No. 20E

Will fit other makes of similar type utility boxes.

Covers are slightly countersunk or flanged, and rounded on corners.

Sherardized.

No.	Per 100	Description	Std. Pkg.	Wt. Lb. Std. Pkg.
20A	\$7.20	Blank.....	20	3
20C	12.00	For Standard Duplex Receptacle....	20	2 3/4
20E	12.00	For Standard Square Handle Toggle Switch.....	20	2 3/4

National Redege Gang Boxes



Suitable holes are provided in the bottom for nails. Sherardized finish.

Width, 4 1/2 inches; depth inside, 1 11/16 inches.

No.	Per 100	Gangs	Length In.	KNOCKOUTS			Bottom	Std. Pkg.	Wt. Lb. Std. Pkg.
				Each End	Each Side				
3002	\$113.20	2	6 7/8	2-1 1/2"	5-1 1/2"	5-1 1/2"	5	8	
3003	163.20	3	8 5/8	2-1 1/2"	5-1 1/2"	10-1 1/2"	5	9	
3013	163.20	3	8 5/8	2-3/4"	6-3/4"	{ 6-1 1/2" 4-3/4" }	5	9	

Low voltage sectors furnished installed in boxes if desired. These divided boxes are used for standard plate spacing with high and low voltage signal systems, or radio connections—aerial and ground with high voltage receptacles. Prices upon application.

National Gang Box Covers



Sherardized finish.

No.	Per 100	Gangs	Designed for Box No.	Extra K.O. Screw Holes Permit Use with Box No.	Std. Pkg.	Wt. Lb. Std. Pkg.
30C2	\$50.00	2	3002, 3012		5	3
30C3	75.30	3	3003, 3013	3002, 3012	5	3

No. 60 National Electric Spigots



For inside use. Utility outlet for 14/2 and 12/2 armored cable or loom wire.

Angle box slips into hole; wide flange covers work marks; no sharp bend in cable. Complete assembly; small wiring connection.

Complete with 10-ampere, 250-volt or 15-ampere, 125-volt receptacle and cable clamp.

Packed 50 in standard package.

Weight per standard package, 25 pounds.

No. 60.....per 100 \$88.00

No. 2968 National Redege Individual Grip Clamp Economy Boxes



3 3/8 x 3 Inches Obround—1 1/2-Inch Deep

For A.B.C. armored cable. Without fixture stud. Knockouts take 14/2, 14/3, 12/2, and 12/3 armored cable. Sherardized. One 4-cable 1/2-inch conduit for bottom and side knockouts.

No. 2968, Wt. per Std. Pkg., 35 Lb.....per 100 \$29.50

No. 2768 National Redege Economy Boxes 4-Inch Octagon—1 1/2-Inch Deep



For A.B.C. cable. Cable knockouts take 14/2, 14/3, 12/2, and 12/3 armored cable. Duplex cable clamps used. Sherardized.

No.	Per 100	Fixture Stud	KNOCKOUTS		Std. Pkg.	Wt. Lb. Std. Pkg.
			4-Cable Bottom	4-Cable Sides		
2768	\$33.00	No	1-1 1/2"	2-1 1/2"	50	40

*Conduit.

National Redege Concrete Boxes

4-Inch Octagon—With Back Plates



Sherardized. Depth, 3 inches.

National	Uni- versal	Per 100	Fixture Stud	Depth, In.	Knock- outs	Std. Pkg.	Wt. Lb. Std. Pkg.
3302	54551	\$64.50	No	3 1/2	{ 4-1 1/2" 4-3/4" }	50	65
3303	54551	67.50	Yes	3 1/2	{ 4-1 1/2" 4-3/4" }	50	65

No. 800 National Sherarduct Floor Boxes



For telephone, signal and bell systems, light and power; for underfloor conduit system, etc.

Box is levelled in rough and easily raised or lowered to meet floor finish without affecting level adjustment.

Water and moisture-proof.

Adjustable box complete without receptacle.

No.	Each	KNOCKOUTS		Unit Pkg.	Std. Pkg.	Wt. Lb. Std. Pkg.
		Bottom	Sides			
800	\$3.50	{ 3-1 1/2" 2-3/4" }	{ 2-1 1/2" 2-3/4" }	1	25	58

National Redege Universal Economy Boxes

3 3/8 x 3 Inches Obround — 1 1/2-Inches Deep



No. 2966



No. 2969

For A.B.C. cable, loom and loom wire.
Cable knockouts take sizes 14/2, 14/3, 12/2, and 12/2 armored cable or loom wire. Sherardized.

No.	Per 100	Fixture Stud	KNOCKOUTS		Std. Pkg.	Wt. Lb. Std. Pkg.
			4-Cable Bottom	4-Cable Sides		
*2966	\$28.00	Yes	2-1 1/2"	2-1 1/2"	50	35
2969	22.00	No	1-1 1/2"	2-1 1/2"	50	35

*Also available mounted on offset bars. †Conduit.

National Redege Economy Boxes

3 1/4 Inches Diameter Round — 3/4-Inch Deep



No. 2365



No. 2368

For A.B.C. cable, loom, or loom wire.
Cable knockouts take 14/2, 14/3, 12/2, and 12/3 armored cable or loom wire. Boxes hold from 1 to 4 cables of 2 or 3 wires each or 4 pieces of loom or combinations of both. Clamps lock cable in double grip. Plates with rimmed hole serve as cable stops and bushings. Rushing shelf is tapped for cover screws.

Sherardized finish only.

No.	Per 100	Clamps Used	Fixture Stud	KNOCKOUTS		Std. Pkg.	Wt. Lb. Std. Pkg.
				Bottom	Sides		
2365	\$10.50	CL-65	3/8" Male	4-2 1/2"	.....	100	42
2368	18.00	CL-65	No	4-2 1/2"	.....	100	42

No. 2365-D National Redege Economy Boxes

3 3/8 x 3 Inches Obround — 1 1/2-Inch Deep

Sherardized.

For A.B.C. cable, loom, or loom wire.

Cable knockouts take 14/2, 14/3, 12/2, and 12/3 armored cable or loom wire.

Can be mounted on bars.

2365-D	\$28.00	2 CL-65	3/8" Male	* 2-1 1/2"	50	60
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*4-cable or loom.

National Redege Economy Boxes

3 1/4-Inch Diameter Round



No. 2375

For Loom and Loom Wire



No. 2910-L2

Sherardized finish.

No.	Per 100	Size Diam. In.	Depth In.	Clamps Used	Fixture Stud	KNOCKOUTS		Std. Pkg.	Wt. Lb. Std. Pkg.
						Bottom	Sides		
2375	\$19.50	3 1/4	1 1/2	2 CL-65	3/8" Male	4-Loom	.....	100	32
2910-L2	18.50	*3 1/4	1 1/2	2 CL-65	No	8-Loom	4-Loom	100	52

*Octagon. †For conduit.

National Redege Switch Boxes

For Conduit

Interchangeable Sectional

May be used for armored cable with standard connectors. Square corners.

Sherardized finish.

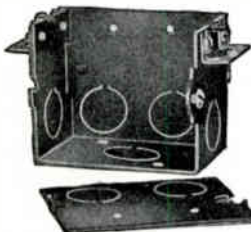
Packed 50 in a standard package.



No. 8

With one 1/2-inch conduit knockout in each end; two 1/2-inch conduit in each side; one 1/2-inch conduit in bottom and fixture stud holes.

No.	Per 100	Depth In.	Wt. Lb. Std. Pkg.
8	\$18.50	2	28



No. 13

With one 1/2-inch conduit knockout in each end; two 1/2-inch conduit in each side; one 1/2-inch conduit in bottom and fixture stud holes.

No.	Per 100	Depth In.	Wt. Lb. Std. Pkg.
13	\$19.50	2 1/2	36



No. 14

With one 1/2-inch conduit knockout in each end; two 1/2-inch conduit in each side; one 1/2-inch conduit in bottom and fixture stud holes.

No.	Per 100	Depth In.	Wt. Lb. Std. Pkg.
14	\$20.00	2 3/4	37

National Redege Switch Boxes

For Loom and Loom Wire

Interchangeable Sectional

With standard or swivel ears as ordered. Beveled corners. Sherardized finish.

Packed 50 in standard package.



No. 3

With two 5/8-inch loom knockouts in bevels; two 3/8-inch loom in sides; one 1/2-inch conduit knockout in bottom and fixture stud holes. No clamps.

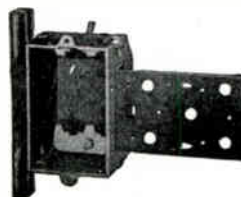
No.	Per 100	Depth In.	Wt. Lb. Std. Pkg.
3	\$18.50	2 1/4	29



No. 4

With two 5/8-inch loom knockouts in bevels; two 5/8-inch loom in sides; 1/2-inch conduit knockout in bottom and fixture stud holes; 2-loom.

No.	Per 100	Depth In.	Wt. Lb. Std. Pkg.
4	\$19.50	2 1/4	31



No. 4-SB

This is No. 4 with welded-on stud bracket and lath support; 2-loom.

No.	Per 100	Depth In.	Wt. Lb. Std. Pkg.
4-SB	\$28.50	2 1/4	41

National Redege Switch Boxes

Interchangeable Sectional

For A.B.C. armored cable, loom and loom wire.

Cable knockouts take 14/2, 14/3, 12/2, and 12/3 armored cable and loom wire. Two CL-5 clamps. Square corners.

Sherardized finish.

Packed 50 in a standard package.

No. 7

With standard or swivel ears, as ordered.

With two 3/8-inch cable knockouts in ends, 2 in sides; 1/2-inch knockout in bottom.



No.	Per 100	Depth In.	Wt. Lb. Std. Pkg.
7	\$21.00	2	32

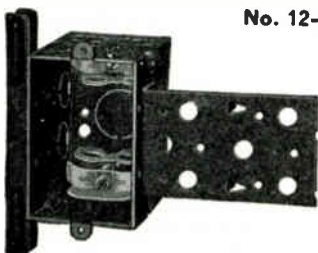
No. 12

Equipped with swivel ears; 2 screw ears furnished on order.

With two 3/8-inch cable knockouts in ends; 2 in sides; 1/2-inch knockout in bottom.

No.	Per 100	Depth In.	Wt. Lb. Std. Pkg.
12	\$21.70	2 1/2	37

No. 12-SB

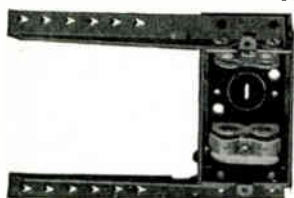


This is No. 12 with weld-on stud bracket and lath support.

Equipped with swivel ears; 2 screw ears furnished on order.

No.	Per 100	Depth In.	Wt. Lb. Std. Pkg.
12-SB	\$29.50	2 1/2	48

No. 12-X



This is No. 12 with extended ears.

Equipped with swivel ears; 2 screw ears furnished on order.

No.	Per 100	Depth In.	Wt. Lb. Std. Pkg.
12-X	\$24.50	2 1/2	45

No. 4170 National Redege Switch Boxes

Sectional



For shallow type switches and devices. For rigid conduit and A.B.C. armored cable.

Square corners.

With one 1/2-inch conduit knockout in sides, ends and bottom; one 3/8-inch cable knockout in each side. No supporting ears on box.

Sherardized finish.

No.	Per 100	Depth In.	Std. Pkg.	Wt. Lb. Std. Pkg.
4170	\$27.50	1 1/2	50	28

National Economy Bar Hangers

No. 2263 Straight



For shallow boxes in new work, or for holding boxes to concrete forms. Will fit any box having 1/2-inch knockout.

With 1/2-inch deep boxes where bar is nailed to joints or studding, edge of box will be flush with ordinary plaster.

No.	Per 100	Length Bar, In.	Std. Pkg.	Wt. Lb. Std. Pkg.
2263	\$14.50	18	50	26

No. 2265 Shallow Offset



For 1 1/2-inch deep boxes without switch covers or plaster rings; offset brings box edge flush with plaster. Will fit any box having 1/2-inch knockout. Offset, 1 1/16 inches deep.

No.	Per 100	Length Bar, In.	Std. Pkg.	Wt. Lb. Std. Pkg.
2265	\$17.00	19 1/2	50	30

No. 2266 Deep Offset



For 1 1/2-inch deep boxes with switch covers or plaster rings; offset brings covers 1/8-inch high, flush with plaster. Will fit any box having 1/2-inch knockout. Offset, 1 1/16 inches deep.

No.	Per 100	Length Bar, In.	Std. Pkg.	Wt. Lb. Std. Pkg.
2266	\$17.00	19 1/2	50	33

No. 2268 Box Cleat



For 1 1/2-inch deep boxes with covers and integral studs, or without studs. Offset has slots for stove bolts to hold box, and is right depth to bring 3/8-inch covers flush with plaster. Offset, 1 1/16 inches deep.

No.	Per 100	Length Bar, In.	Std. Pkg.	Wt. Lb. Std. Pkg.
2268	\$10.50	21	50	27

National Redege Economy Boxes

No. 2765 Economy Boxes for armored cable and Nos. 2966 and 2365-D for armored cable, loom or loom wire are furnished mounted on offset bars, 19 1/2 inches long with offset of 1 1/16 inches bringing edge of box flush with plaster line for an installation where no box cover is to be used.

The boxes are fastened on offset bars by a diagonal saddle clamp allowing bar to cross bottom of box without obstructing knockouts.

Sherardized finish.

Packed 50 in standard package.

No. 3814-FS

Diameter, 3 3/8 inches; 1 1/2 inches deep; 4-cable knockouts in bottom; 4-cable and two 1/2-inch conduit knockouts in sides; 2 hole, 1 screw clamp. Duplex cable clamps, 3/8-inch fixture stud; with cover lugs.



No.	Per 100	No. Box Used	Wt. Lb. Std. Pkg.
3814-FS	\$40.00	2966	31

No. 3839-FS

Octagon, 4 inches; 1 1/2 inches deep; 4-cable knockouts in bottom; 4-cable and two 1/2-inch conduit knockouts in sides. Duplex cable clamps, 3/8-inch fixture stud; with cover lugs.



No.	Per 100	No. Box Used	Wt. Lb. Std. Pkg.
3839-FS	\$54.00	2765	37

No. 3812-FS

Round, 3 1/4 inches; 1 1/2 inches deep inside; 4-cable knockouts in bottom; two 1/2-inch knockouts in sides; 2 CL65 clamps; 3/8-inch male stud; with cover lugs.



No.	Per 100	No. Box Used	Wt. Lb. Std. Pkg.
3812-FS	\$40.00	2365-D	31

Series REA Appleton Conduit Fittings

For Rural Electrification Wiring—Weatherproof

Outdoor Receptacle Fittings

Complete with Cap and Chain



Type E

Type C

Will take standard attachment plug caps, 15 amperes, 125 volt or 10 amperes, 250 volt.

Type E—One 1/2-Inch Hub

No.	Each	Style	AMPERES	
			125 V.	250 V.
REA-4	\$1.60	2-Wire, 2-Pole	15	10
REA-5	2.18	2-Wire, 3-Pole	15	10
REA-6	2.40	3-Wire, 3-Pole	15	10

Type C—Two 1/2-Inch Hubs

REA-7	\$1.66	2-Wire, 2-Pole	15	10
REA-8	2.25	2-Wire, 3-Pole	15	10
REA-9	2.47	3-Wire, 3-Pole	15	10

Outdoor Switch Fittings

Complete With Switches



Type E

Type C

Type E—One 1/2-Inch Hub

No.	Each	Style	AMPERES	
			125 V.	250 V.
REA-10	\$1.48	Single Pole	10	5
REA-11	2.05	Double Pole	..	10
REA-12	1.60	Three Way	10	5
REA-13	4.20	Four Way	10	5

Type C—Two 1/2-Inch Hubs

REA-14	\$1.55	Single Pole	10	5
REA-15	2.12	Double Pole	..	10
REA-16	1.68	Three Way	10	5
REA-17	4.27	Four Way	10	5

Type FEH Flange Type Entrance Fittings



Combination entrance cap and flange especially recommended for out building service entrances in accordance with REA specifications. It is made of aluminum and cannot rust. The insulator has four holes, two of which are plugged. Hub in back is tapped for 1/2-inch conduit. Furnished with hot galvanized wood screws.

Standard package, 24; carton, 1.

No.	Each	Description	Wt. Lb. Std. Pkg.
REA-25	\$.35	Flange Type Entrance Fitting, without DuxSeal Compound	20
REA-26	.37	Same as Above, except Furnished with DuxSeal Compound	21

R & S Type FS & FD Cast Conduit Boxes



Type FS—Single Gang

For surface mounting. Adapter plates for flush mounting can be furnished.

Maximum conduit, 1 inch. Single gang, 4-way; multi-gang, one outlet on one side, one per gang on opposite side and one on each end. No additional charge is made for drill-outlets when boxes are ordered as part of complete devices. When ordering boxes only there is an additional charge.

Cast iron boxes have aluminized finish; cast brass, bright dip.

These boxes take all R & S Type FS and FD fittings.

Type FS—Shallow

No. of Gangs	CAST IRON			CAST BRASS			*Overall Dimen. Inches
	No.	Each	Approx. Wt. Lb.	No.	Each	Approx. Wt. Lb.	
Single	3701	\$.80	2 1/2	3721	\$ 2.40	2 3/4	4 1/8 x 2 5/8 x 2 1/4
2	3702	1.60	5 1/4	3722	4.80	5 3/4	4 1/8 x 5 1/2 x 2 1/4
3	3703	2.40	7 3/4	3723	7.20	8 1/2	4 1/8 x 10 3/8 x 2 1/4
4	3704	3.20	9	3724	9.60	11 1/2	4 1/8 x 13 1/4 x 2 1/4
Tandem	3715	1.60	4 1/4	3735	4.80	4 3/4	8 1/2 x 2 5/8 x 2 1/4

Type FD—Deep

Single	3711	\$.95	3	3731	\$ 2.85	3 1/4	4 1/8 x 2 5/8 x 2 7/8
2	3712	1.90	5 3/4	3732	5.70	7	4 1/8 x 5 1/2 x 2 7/8
3	3713	2.85	7 1/2	3733	8.55	8	4 1/8 x 8 1/2 x 2 7/8
4	3714	3.80	9 1/4	3734	11.40	11 1/2	4 1/8 x 11 1/2 x 2 7/8

*Dimensions are overall exclusive of conduit pads and mounting lugs.

R & S Watertight Cast Junction Boxes

Round Type—Heavy Wall



With external mounting lugs.

Cast iron boxes are regularly supplied aluminized finish. Cast brass boxes are furnished natural brass finish.

Boxes can also be supplied in cast aluminum alloy. Prices upon application.

All outlets are extra.

With Plain Cover

Complete with gasket and fastened with brass screws.

Nominal Size	Outside Diameter	Depth Inside	Max. Size Conduit Inside	CAST IRON		CAST BRASS		Approx. Wt. Lb.
				No.	Each	No.	Each	
3	3 1/2	1 1/2	3/4	1481	\$ 1.00	481	\$ 2.50	2 1/4
4	4 1/2	1 3/8	3/4	1432	1.10	432	2.80	3
4	4 1/2	1 3/4	1	2400	1.50	2402	4.00	4
4	4 1/2	2 1/8	1 1/2	1442	2.00	1446	5.50	6 1/2

Boxes Only

Without cover, gasket or screws. For use with vapor-tight fixtures.

3	3 1/2	1 1/2	3/4	382	\$.50	381	\$ 1.50	2
*4	4 1/2	1 3/8	3/4	333	.60	332	1.80	2 1/4
*4	4 1/2	1 3/4	1	2401	1.00	2403	3.00	3 1/4
*4	4 1/2	2 1/8	1 1/2	1441	1.50	1445	4.50	5 3/4

*Accommodates all junction box type screw-globe fixtures. Extension collars can be furnished.

R & S Snap Outlet Box Covers



Nos. 201 and 571



Nos. 385 and 386

Flush cap for unused outlet boxes. Snaps into box or cover without the use of screws. Has bronze spring clips.

Brass

Regularly finished in bright brass; other finishes to order.

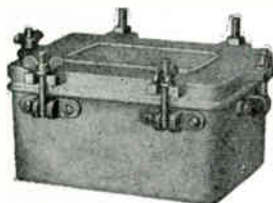
No.	Each	Description	Approx. Wt. Lb.
201	\$.50	For 3-Inch Standard Round Outlet Box...	1/8
202	.60	For 4-Inch Standard Round Outlet Box...	1/4
203	.60	For Square Outlet Box Cover with 2 3/4-Inch Diameter Opening.....	1/4
385	.60	For Standard 4-Inch Outlet Box Cover with Rectangular Opening.....	1/4

Galvanized Iron

Regularly finished aluminized; other finishes to order.

No.	Each	Description	Approx. Wt. Lb.
571	\$.40	For 3-Inch Standard Round Outlet Box...	1/8
572	.45	For 4-Inch Standard Round Outlet Box....	1/4
573	.45	For Square Outlet Box Cover with 2 3/4-Inch Diameter Opening.....	1/4
386	.45	For Standard 4-Inch Outlet Box Cover with Rectangular Opening.....	1/4

T & B Weatherproof Type Cast Iron Junction Boxes



A sturdy box built for rugged service. A hinged cover, supplied with thumb nuts on all four sides, makes a watertight, weatherproof job when tightened.

Furnished with gasket as standard equipment.

Boxes are listed in black japan finish.

Cat. No.	Complete Each Japanned	SIZE INCHES		WEIGHT, POUNDS	
		W. L. D.	Box	Cover	
10500	\$6.00	4x 6x 4	5		
10502	7.80	6x 6x 4	10		
10503	8.00	6x 8x 4	15		
10505	8.60	6x12x 3	10.2		5.5
10507	7.50	7x 9x 3	8		5
10509	8.00	8x 8x 4	9		5
10510	8.20	8x 8x 5	10.3		5
10511	9.00	8x 8x 6	10.3		4.5
10512	10.00	8x10x 4	16		4
10513	15.00	8x14x 5	21		12
10514	20.00	8x18x 6	27		11
10515	10.50	10x10x 4	13.2		8.2
10516	12.00	10x10x 6	16.2		8
10517	11.20	10x12x 4	14		10
10519	17.00	10x14x 6	24		10
10520	17.50	10x18x 4	23		13
10522	14.00	12x12x 4	16		10
10523	18.00	12x16x 4	27		15
10524	21.00	12x16x 6	40		15
10535	72.00	12x16x 8	160		26
10525	48.00	12x24x 7	70		29
10527	32.00	16x20x 6	64		26
10528	36.00	18x18x 6	73		29
10529	44.00	18x18x10	100		32
10530	40.00	18x24x 6	83		42
10531	72.00	18x36x 8	173		70

T & B Cast Iron Junction Boxes and Covers

Sizes other than those listed can be furnished.

Standard finish is hot dip galvanizing.



Flanged



Unflanged

Cat. No.	Box Only	Box and Cover	Gasket Each	SIZE, INCHES			Wt., Lbs. Complete
				W.	L.	D.	
10895	\$1.40	\$2.00	\$.30	4x	4x	3	3.8
10756	2.60	2.60	.30	4x	4x	4	3.8
10914	2.80	3.60	.40	4x	6x	3	7
10899	3.60	4.80	.60	4x	8x	3	12.6
10757	3.80	5.40	.70	4x12x		4	10.8
10897	2.50	3.70	.60	6x	6x	3	9
10898	3.40	4.70	.60	6x	6x	4	8
10915	3.80	5.10	.60	6x	6x	6	14
10900	4.60	6.00	.70	6x	8x	3	14
10902	4.30	5.70	.70	6x	8x	4	15
10916	5.00	6.40	.70	6x	8x	6	15.5
10908	7.20	9.20	1.00	6x12x		4	19
10910	10.80	12.80	1.00	6x12x		6	24
10901	6.00	8.00	.90	8x	8x	3	14
10903	6.20	8.20	.90	8x	8x	4	16
10904	7.30	9.30	.90	8x	8x	6	18
10763	7.80	9.80	.90	8x	8x	8	20
10764	10.00	13.00	1.00	8x12x		6	28
10905	11.10	14.30	1.00	10x10x		8	104
10907	9.00	13.00	1.20	12x12x		3	41
10909	9.00	13.00	1.20	12x12x		4	45
10911	14.00	18.00	1.20	12x12x		6	52
10769	20.00	24.00	1.20	12x12x12			96
10771	32.00	37.50	1.40	12x18x12			130
10785	34.00	42.00	3.00	12x24x12			113
10778	31.00	44.00	3.00	18x18x		8	140
10780	66.00	94.00	4.00	24x30x12			360
10781	110.00	172.00	4.50	30x30x12			455
10782	180.00	290.00	6.00	30x48x12			910
				Unflanged Type			
10861	\$.90	\$1.20	\$.20	4x	4x	2	2.5
10862	1.00	1.30	.20	4x	4x	3	3.5
10700	1.70	2.00	.20	4x	4x	4	5
10866	1.50	2.00	.30	4x	6x	2	5.5
10703	2.20	2.70	.30	4x	6x	4	7.75
10863	1.60	2.10	.40	5x	5x	3	6
10867	1.60	2.00	.50	5x	6x	3	6
10894	1.70	2.40	.50	6x	6x	2	6.5
10962	1.70	2.40	.50	6x	6x	3	7.5
10868	2.60	3.30	.50	6x	6x	4	8.5
10963	3.50	4.20	.50	6x	6x	5	12.5
10964	3.70	4.40	.50	6x	6x	6	14.5
10871	2.70	3.60	.60	6x	8x	3	10.5
10872	3.10	4.00	.60	6x	8x	4	10.5
10874	4.60	5.50	.60	6x	8x	6	15.5
10878	5.40	6.70	.90	6x10x		4	15
10968	4.70	6.70	1.00	6x12x		4	21
18882	8.00	10.00	1.00	6x12x		6	27
10711	15.00	18.00	2.00	6x18x		6	25
18870	2.80	3.60	.60	7x	7x	3	11
18965	4.00	5.20	.80	8x	8x	3	13
18873	4.00	5.20	.80	8x	8x	4	13.5
10717	9.00	10.20	.80	8x	8x	8	23
18714	5.00	6.80	1.00	8x10x		4	20
10855	6.20	8.00	1.00	8x10x		6	15.5
10715	10.00	11.80	1.00	8x10x		8	32
10718	10.00	12.00	1.20	8x12x		6	37
10853	5.30	6.80	1.10	9x	9x	4	5
10852	5.40	7.00	1.20	10x10x		5	14
18726	7.40	9.00	1.20	10x10x		6	17
18728	7.00	10.00	1.00	12x12x		3	27
18881	7.50	10.50	1.00	12x12x		4	32
10869	9.60	12.60	1.00	12x12x		6	39
10729	12.00	15.00	1.00	12x12x		8	46
18732	19.50	24.00	2.00	12x18x		6	68
18733	22.00	26.50	2.00	12x18x10			97
10883	24.00	31.00	3.00	14x14x10			107
10742	24.00	32.00	2.50	18x18x		5	106
18743	21.00	29.00	2.50	18x18x		6	117
18744	29.00	37.50	3.50	18x24x		6	168
10746	48.00	62.00	4.00	24x24x		8	265



R & S Watertight Plain Type Cast Junction Boxes



Made of cast iron; heavy wall. Furnished complete with cover and gasket. All outlets are extra. Specify size and location of outlets when ordering.

Aluminized finish. Can also be furnished hot galvanized finish and in cast brass or aluminum. Prices upon application.

No.	Each	APPROX. INSIDE DIMENSIONS, IN.			Approx. Wt. Lb.	No.	Each	APPROX. INSIDE DIMENSIONS, IN.			Approx. Wt. Lb.	No.	Each	APPROX. INSIDE DIMENSIONS, IN.			Approx. Wt. Lb.
		Length	Width	Depth				Length	Width	Depth				Length	Width	Depth	
2100	\$1.65	*4	2 3/4	1 3/4	2 3/4	2137	\$5.10	*6 1/4	3 3/4	3	8 1/2	2151	\$6.00	10 3/4	3 3/4	2 1/2	10
2181	1.95	*4	2 3/4	2	3 1/4	2138	4.20	6 1/4	3 3/4	4 3/4	6 3/4	2193	15.00	10 3/4	9	6	30
2113	1.80	*4	2 3/4	3	3	2124	6.30	*6 1/4	4 3/4	4 1/2	10 1/2	2159	4.80	*11 1/2	4 1/4	1 1/2	8
2101	3.30	*4	2 3/4	6	5 1/2	2139	6.60	*6 1/2	6 1/2	3 1/2	11	2160	7.20	11 1/2	4 3/4	3	12
2119	2.55	4 1/2	2 1/2	3 1/2	4 1/4	2188	10.80	*6 1/2	6 1/2	5 3/4	18	2153	12.00	*11 1/2	7 1/2	3	22
2102	2.55	*4 1/2	3 1/4	3 1/4	4 1/4	2142	6.30	*7	5	3	10 1/4	2154	10.00	*12	4	4	17
2116	2.40	4 1/2	3 3/4	1 3/4	4	2257	5.40	7 1/2	3 3/4	3	9	2161	9.00	*12	5	3	16 1/2
2117	3.00	4 1/2	4	2 3/4	5	2122	3.30	7 1/2	3 3/4	2	5 1/2	2195	12.00	12	6	6	23
2103	4.20	4 1/2	4	6	7	2143	5.10	*7 1/2	5 1/4	2 1/2	8 3/4	2199	17.00	*12	8	6	34
2120	3.50	4 1/2	4 1/2	2 1/4	5 3/4	2146	7.50	7 3/4	5 3/4	3	12 1/2	2095	18.00	*12	12	4	35 1/2
2123	1.65	4 3/4	2 3/4	1 1/2	2 3/4	2147	11.00	7 3/4	5 3/4	4	18	2166	17.00	*12	12	6	34
2121	2.10	4 3/4	2 3/4	1 3/4	3 1/2	2128	3.90	8	3 3/4	2 3/4	6 1/2	2152	10.00	12 1/2	5	3	18
2104	5.25	4 3/4	4 1/2	4	8 3/4	2129	6.00	*8	4	4	9 3/4	2162	11.00	13 1/2	11 1/2	3 1/4	21
2125	3.00	*5	3 1/2	2	4 3/4	2130	6.30	*8	4 1/2	2 1/2	10 1/2	2063	27.50	15	8	8	46
2127	3.90	*5	3 3/4	3	6 1/2	2136	12.60	8	6	4 1/2	21	2270	16.50	15	13 1/2	3 1/2	33
2131	2.40	*5 1/4	2 3/4	2 1/4	4	2163	7.20	*8	7	3	12	2155	14.00	*15 1/2	9	3	28
2126	1.80	5 1/4	3	1 3/4	2 3/4	2094	14.00	*8	8	4	22 3/4	2169	6.00	*16	4	2 1/4	10
2185	3.30	5 1/2	3	4 1/2	5 1/4	2258	15.00	*8	8	6	24 1/4	2165	11.00	*16	4	4	20
2105	3.90	5 3/4	3 3/4	4 1/4	6 1/2	2148	4.50	8 1/2	3 3/4	1 3/4	7 1/2	2064	11.00	16	5	3	20 1/2
2132	2.70	*5 3/4	4	1 1/2	4 1/4	2141	5.40	8 1/2	4 1/4	3	9	2170	36.00	16	12	8	71
2106	2.70	*5 3/4	4	2 1/4	4 1/2	2144	10.80	*8 1/2	6 1/2	5	18	2156	17.00	*16 1/2	6 1/2	3 3/4	33
2133	4.20	*5 3/4	4	3	6 3/4	2091	24.00	8 1/2	8 1/2	8 3/4	40	2171	6.00	*18 1/2	3 1/2	1 3/4	10
2107	5.40	*5 3/4	4	4 1/2	9	2262	6.00	9 1/4	4	2 1/2	10	2172	15.00	*19 1/4	7 3/4	3	30
2108	5.70	*5 3/4	4	6	9 1/4	2149	7.20	9 1/4	9 1/4	3 1/2	12	2157	31.00	23 3/4	6 3/4	5 1/2	62
2168	5.40	5 3/4	5 3/4	3 3/4	9	2233	6.00	9 1/2	3 3/4	3	10	2065	29.00	24	8	8	57
2109	2.10	*6	2 3/4	1 1/4	3 1/4	2167	6.30	*9 1/2	5 3/4	2 1/2	10 1/2	2093	31.00	24	12	6	63
2110	3.30	*6	3 1/4	1 3/4	5 1/4	2111	8.10	*9 1/2	5 3/4	4 1/2	13 1/2	2097	38.00	24	12	8	76
2135	3.60	*6	3 3/4	2 1/4	6	2191	4.50	9 3/4	3 1/4	3	7 1/4	2053	70.00	*24	15	6	140
2134	5.10	*6	5	3	8 1/4	2271	7.50	10	6	3	12 1/4	2173	56.00	24	16	8	112
2115	4.50	6	6	2 1/2	7 1/2	2192	11.00	10	8 3/4	3	17 3/4	2174	68.00	24	20	8	135
2118	10.00	*6	6	4	16 1/2	2150	14.70	10 1/2	10 1/2	3	24 1/2	2158	32.00	*27	6 3/4	5	65
2140	2.70	*6 1/4	3 1/2	1 3/4	4 1/4	2164	3.90	10 3/4	3	1 1/2	6	2175	39.00	*34	11	3 1/2	77

R & S Watertight Flanged Type Cast Junction Boxes



With Plain Cover

Made of cast iron; heavy wall. Furnished complete with cover and gasket. All outlets are extra. Specify size and location of outlets when ordering.

Aluminized finish. Can also be furnished hot galvanized finish and in cast brass or aluminum.

Prices upon application.



With Recessed Cover

With Plain Cover					With Recessed Cover												
No.	Each	APPROX. INSIDE DIMENSIONS, IN.			Approx. Wt. Lb.	No.	Each	APPROX. INSIDE DIMENSIONS, IN.			Approx. Wt. Lb.						
		Length	Width	Depth				Length	Width	Depth							
2200	\$2.40	3	3	3 1/4	3 3/4	2178	\$5.70	8 1/2	3 1/2	4	9 1/2	2286	\$30.00	*14	6	4	41
2176	3.30	3 1/2	3 1/2	4 3/4	5 1/4	2179	15.50	8 3/4	8 3/4	8	25 1/2	2223	24.00	15	7	7	39
2203	3.60	3 3/4	3 3/4	3	5 3/4	2180	11.00	9 1/4	9 1/4	2 3/4	18	2189	105.00	*15	15	20	177
2221	4.20	4 1/2	4 1/4	3	7	2216	12.00	9 3/4	9 3/4	4	19 1/4	2230	50.00	18	14	6	84
2220	3.30	5 3/4	3 3/4	3	5 1/4	2182	19.50	9 3/4	9 3/4	6 3/4	32	6185	55.00	*18	16	5	92
2205	5.40	5 3/4	5 3/4	2 3/4	8 3/4	2212	14.50	10 1/4	7 1/4	4	23 1/2	2190	62.00	*18	18	8	102
2215	6.30	5 3/4	5 3/4	4	10 1/4	2183	18.00	10	10	5	30	2217	85.00	19	14	10	140
2214	10.50	6 1/4	6 1/4	6 1/2	17	2184	17.50	*11	7	5	28 3/4	2196	48.00	20	12	8	80
2206	8.10	7	7	4	13 1/2	6124	14.00	*12	6	4	23	2231	54.00	*22	10	7 1/2	90
2207	16.00	7	7	10	26 1/2	2213	17.00	12	9	4	28	2197	36.00	22 1/2	10 1/2	5	60
2225	9.00	8	6	4	15	2228	20.00	12	12	4	33	2224	65.00	23	18 1/4	4 3/4	108
2208	10.50	8	8	4	17	2229	26.00	12	12	6	43	2198	75.00	*26	15	6	125
2227	14.50	8	8	6	24	2186	32.00	12	12	8	53	2194	50.00	*36	6	6	82
2177	8.00	*8 1/2	3 1/2	2 3/4	13	2187	16.00	*13 1/2	10 1/4	3	26	.....	.....	.....	.....	.....	.....
											With Recessed Cover						
2072	\$4.00	4 1/4	3	3	5	2079	\$8.50	7 3/4	7 3/4	3 1/2	10 1/2	2084	\$37.50	14	12	6	44
2073	7.00	5 1/4	3 1/2	3 1/2	8 1/2	2080	21.00	9 1/4	9 1/4	4 1/4	25 1/2	2085	65.00	15	12	7	76
2074	10.00	5 1/2	5 1/2	3 1/4	12	2081	24.00	9 1/4	9 1/4	7 3/4	29	2086	85.00	18	12	13 1/2	120
2077	5.00	5 3/4	4 1/4	2 3/4	6	2082	30.00	12	6	6 3/4	35 1/2	2087	95.00	24	12	13 1/2	135
2078	6.80	6 1/4	4 3/4	3 3/4	8	2083	24.00	12 3/4	9 1/4	4 1/4	29	.....	.....	.....	.....	.....	.....

*Supplied with mounting lugs. All others without lugs unless specified on order.

**R & S Watertight Cast Junction Boxes
Heavy Wall and Mounting Lugs**



Hinged Cover Type



Bolted Cover Type

Made of cast iron. Furnished complete with cover and gasket. Small sizes of the hinged cover type junction boxes are provided with a flat cover. The raised panel cover furnished on the large sizes prevents bending when the cover is clamped in position.

All outlets are extra. Specify size and location of outlets when ordering.

Aluminized finish. Can also be furnished hot galvanized and in cast brass or aluminum. Prices on request.

Hinged Cover Type

No.	Each	APPROX. INSIDE DIMENSIONS, INCHES			Approx. Wt. Lb.
		Length	Width	Depth	
2251	\$7.00	4 3/4	4 1/2	3 1/2	7 1/2
2236	8.50	*6	3 1/2	4 1/2	9
2252	9.00	6	5	2 1/2	9
2237	12.50	6	6	6	15 1/2
2254	9.00	6 3/4	4 1/2	3 1/4	8 3/4
2238	9.00	*7	3	3 1/2	9
2239	12.50	*8	4	5 1/2	12 1/2
2255	12.00	8	6	4 1/2	12
2241	19.00	8 1/2	7 1/2	3 1/2	21
2259	13.00	9	8	3	15 3/4
2240	28.00	*9 1/2	7 1/2	5 1/2	33 3/4
2260	13.00	10	5	3	11 1/4
2261	15.00	10	7	3	15 1/2
2272	28.00	*10	8	6	31 1/4
2242	20.00	11	7 1/2	3 1/4	23
2243	28.00	*11	10	4 1/2	34
2264	22.00	11 3/4	8	4	23 3/4
2265	26.00	12	10	3 3/4	28 1/4
2244	45.00	*12	11	6	49
2245	15.00	*13	3	3 1/2	16
2202	48.00	13	9	6	53
2204	35.00	13	11	4 1/2	39
2246	55.00	13 1/2	11 1/2	6 3/4	68 1/2
2266	23.00	14 3/4	5 1/4	4	24 1/4
2267	35.00	*15	7	7	41 1/4
2274	40.00	*15	8	8	46
2268	41.00	*15	13	4	48 3/4
2273	45.00	15 1/2	10 1/2	4 1/4	56
2275	50.00	16 3/4	13 3/4	3 1/2	61
2209	58.00	*16 3/4	13 3/4	5	72
2289	52.00	*17 1/2	13 3/4	3	64
2298	40.00	18	6 1/4	3 1/2	47
2210	77.00	*18	15	7	96
2211	52.00	*20	11	4	64
2218	70.00	*20	20	4 1/2	93
2269	60.00	22	10 3/4	5 3/4	82
2276	65.00	*22	16 3/4	3 1/2	85

Larger sizes furnished upon application.

Bolted Cover Type

2253	\$27.00	8	8	5 1/2	32
2290	40.00	11	9	4	47
2286	30.00	14	6	4	41
2234	55.00	15	11	7	64
2291	48.00	17	9	4	56
2235	95.00	18 1/2	12	10	120
2256	62.00	19 1/2	12 1/2	6	77
2292	60.00	23	9	4	75
2295	80.00	24	12	8	100
2296	84.00	24	15	5 1/2	105
2297	115.00	24	20	6	146
2299	150.00	24	24	10	210
2293	61.00	29	9	4	76

*Hinged on long side.

Typical Square-Duct Installations



Fig. 1

Fig. 1 is a down-view showing how the use of 4 vertical elbows makes it possible to cross over or to bridge another section of wiring trough. The use of 2 of these fittings makes it possible to drop to a lower level whenever desirable. In this view, the wiring trough sections are mounted to the side wall by means of bracket hangers.

Fig. 2 illustrates the use of the telescope fitting, the drop hanger, the junction box and connecting a wiring trough section to the power panel.

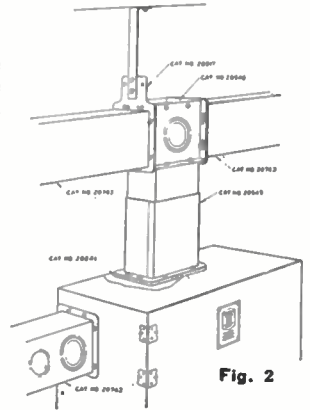


Fig. 2

By looking carefully at the bottom of the telescope fitting, you will notice a cutaway view showing how the use of the panel fitting collar provides a smooth surface over which wires can be drawn without trouble.

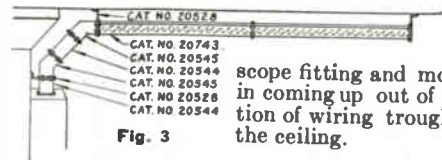


Fig. 3

Fig. 3 illustrates the use of elbows, telescope fitting and mounting brackets, in coming up out of a panel to a section of wiring trough suspended from the ceiling.

Using one of the many knockouts in the wiring trough to make a connection to a switch.



Fig. 4

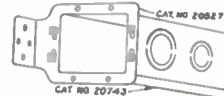


Fig. 5

Illustration shows how a bracket hanger is used to mount a section of trough to the sidewall.

Fig. 6 shows the use of the T fitting in a section of trough. The use of this fitting permits the connection to another section of trough running at right angles, to a junction box, or to make a right angle connection when the joints are not conveniently located.

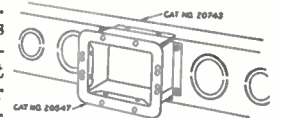


Fig. 6

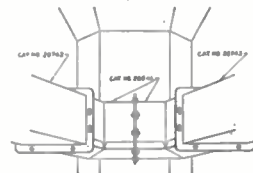


Fig. 7

Illustration shows the use of two 45° elbows, passing a column located in a corner.

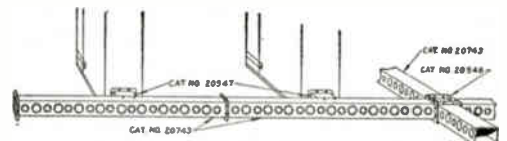


Fig. 8

Fig. 8 shows one method of using Square Duct trough to connect power panels in one common gutter. It also illustrates the use of the junction box as a cross fitting.

Square D Duct and Fittings

Schedule A

Duct



The trough is flanged at both ends so that two sections can be clamped together. Cover is hinged. Knockouts are provided in sides and back for 1/2 and 3/4-inch conduit in 2 1/2 x 2 1/2-inch duct, and 1/2, 3/4, 1 and 1 1/4-inch conduit in 4x4 and 6x6-inch duct.

No.	Each	Size Inches	Length Feet
20241	\$2.00	2 1/2 x 2 1/2	1
20242	2.50	2 1/2 x 2 1/2	2
20243	4.00	2 1/2 x 2 1/2	5
20441	3.00	4x4	1
20442	4.00	4x4	2
20443	6.50	4x4	5
20641	9.50	6x6	1
20642	13.50	6x6	2
20643	21.50	6x6	5

Trough Collars

Used when necessary to cut standard duct.



No.	Each	Size In.
20240	\$.50	2 1/2 x 2 1/2
20440	.60	4x4
20640	2.50	6x6

Panel Fitting Collars

For connecting duct to panels. By cutting hole size of duct in panel box and clamping box wall between panel fitting collar and duct collar, a solid connection is made free from rough edges.

No.	Each	Size Inches
20221	\$.50	2 1/2 x 2 1/2
20421	.60	4x4
20621	2.50	6x6

Telescope Fittings



Slide arrangement for making connection to duct fittings at varying distances.

No.	Each	Size Inches	Extends Inches
20244	\$2.50	2 1/2 x 2 1/2	7 1/2 to 12
20444	3.50	4x4	8 to 12
20644	30.00	6x6	8 to 12

Elbows

7 1/2° Elbows

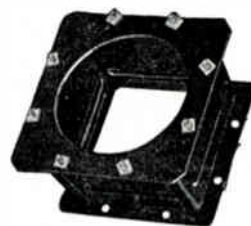
No.	Each	Size Inches
20207	\$1.50	2 1/2 x 2 1/2
20407	2.00	4x4
20607	7.50	6x6

22 1/2° Elbows

No.	Each	Size Inches
20255	\$2.50	2 1/2 x 2 1/2
20455	4.00	4x4
20655	13.00	6x6

45° Elbows

No.	Each	Size Inches
20245	\$2.50	2 1/2 x 2 1/2
20445	4.00	4x4
20645	13.00	6x6



Box Fittings

For connecting duct to panels, pull boxes, etc. One end fits round hole in box other end matches duct collar.

No.	Each	Size Inches
20249	\$2.50	2 1/2 x 2 1/2
20449	3.50	4x4
*20467	3.50	4x4
20649	30.00	6x6
*20667	30.00	6x6

*For square hole in box or panel cabinet.

Pull Boxes

Price includes two sides with double openings and two with single openings; does not include closing plates for unused openings.



No.	Each	Description	Size In.
20558	\$15.00	Pull Box	4x4
20658	52.50	Pull Box	6x6
20559	.60	(Closing Plate)	4x4
20659	2.50	(Closing Plate)	6x6
20561	2.50	(Box Side, 1 Opening)	4x4
20661	10.00	(Box Side, 1 Opening)	6x6
20562	3.10	(Box Side, 2 Openings)	4x4
20662	12.50	(Box Side, 2 Openings)	6x6

T Fittings and Pull Boxes

No.	Each	In.
20471	\$8.80	4x4
20671	30.00	6x6

90° Elbows and Pull Boxes

No.	Each	In.
20472	\$7.50	4x4
*20490	4.40	4x4
20672	23.00	6x6

*Without hinged cover; other numbers have hinged cover as illustrated.



T Fittings

For T connection. Cut hole inside of duct and drill holes to match holes in flange on narrow end of fitting.

No.	Each	Size In.
20247	\$2.50	2 1/2 x 2 1/2
20447	3.50	4x4
20647	13.00	6x6



Nipples

For use where shorter connection, than is afforded by 1-foot lengths or the telescope fittings, is required.

No.	Each	Lgth. In.	Size In.
20200	\$1.00	1/2	2 1/2 x 2 1/2
20202	1.50	2	2 1/2 x 2 1/2
20203	1.70	3	2 1/2 x 2 1/2
20206	2.00	6	2 1/2 x 2 1/2
20400	1.00	1/2	4x4
20402	1.50	2	4x4
20403	1.70	3	4x4
20406	2.00	6	4x4
20600	4.00	1/2	6x6
20602	5.00	2	6x6
20603	6.00	3	6x6
20606	7.00	6	6x6



Universal Drop Hangers

For suspending wiring trough from overhead. Provided with screws and nuts for mounting.

No.	Each	Size In.
20217	\$.40	2 1/2 x 2 1/2
20417	.50	4x4
20617	2.50	6x6



Universal Bracket Hangers

For mounting wiring trough on side wall.

No.	Each	Size In.
20227	\$.40	2 1/2 x 2 1/2
20427	.50	4x4
20627	2.50	6x6

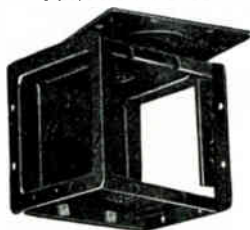


Reducing Fittings

No.	Each	For Joining Duct, In.
20422	\$.60	4x4 to 2 1/2 x 2 1/2
20622	2.50	6x6 to 5x5



Junction Boxes



To form T, L or cross. Price includes two closing plates. Cover is removable.

No.	Each	Size Inches
20248	\$2.10	2 1/2 x 2 1/2
20448	2.50	4x4
20648	8.80	6x6

Closing Plates

For closing end of section or any side of junction box.

No.	Each	Size In.
20216	\$1.50	2 1/2 x 2 1/2
20559	.60	4x4
20659	2.50	6x6



Prices on Square D Duct without knockouts will be furnished on request. Prices on cadmium plating and other special weatherproofing finishes on Square D Duct and Fittings furnished on application.

Bull Dog BUStribution Systems

A Bull Dog BUStribution installation possesses many advantages due both to the construction of its parts and to its method of installation. A few of the important features are listed below.

Unlimited Flexibility. The flexibility of BUStribution is practically unlimited. Readily adaptable to either vertical or horizontal mounting. Various parts are so constructed that they may be interconnected by means of standard fittings such as elbows, tees, and cross-overs to fit any building layout and to permit installations near ceiling or floor.

BUStribution is easy to install and reinstall and may be dismantled at any time and reinstalled elsewhere without any loss of material whatsoever. Branch circuit controls or plugs may be easily moved from one point of the system to another to take care of new loads or changes in loads.

Interchangeability. Branch circuit plugs are not only interchangeable for volts, amperes and number of poles, but also for type.

Designed so that switch-and-fuse, fuse only and circuit breaker controls may be used interchangeably and varied in a run to meet individual circuit requirements.

Different types of plugs may be substituted one for another even after the original installation is made. This may be accomplished without interfering with other circuits and without interrupting service, except at the point where the change is being made.

Unit Construction. Facilitates installation and permits branch circuit controls to be plugged-in where needed. Stand-

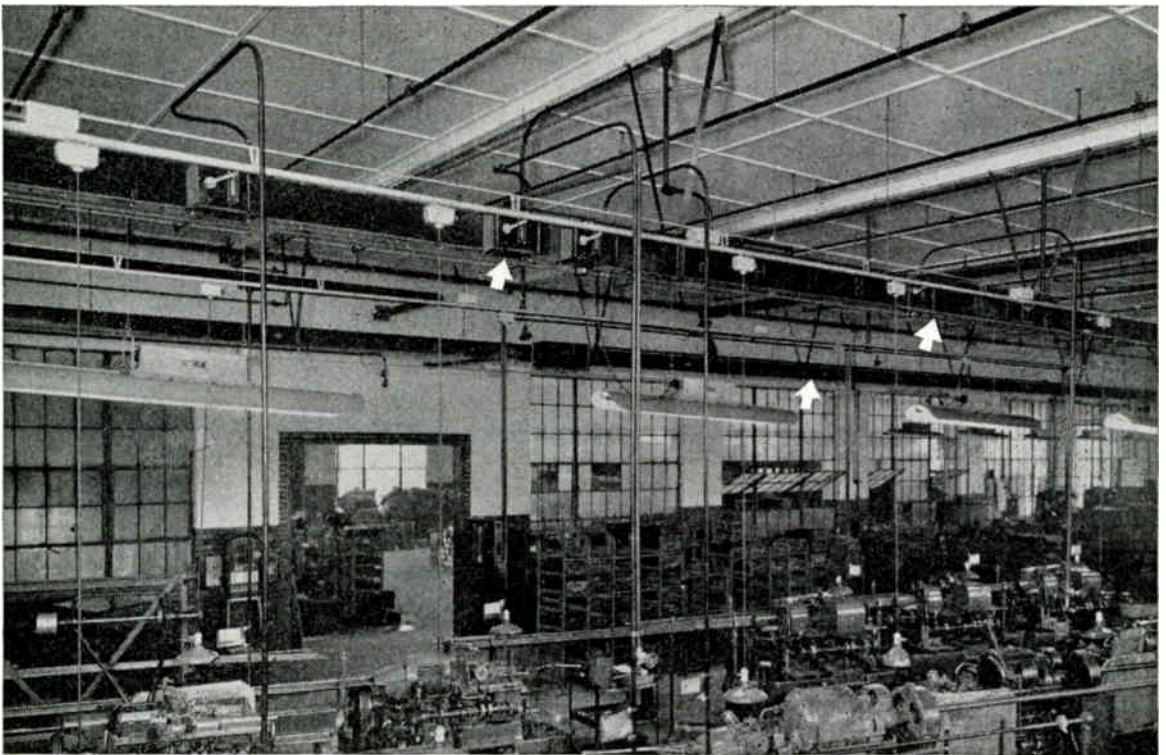
ardization of duct sections, auxiliary parts and plugs simplifies work involving alterations and additions.

No Wiring Gutters. Eliminates troublesome concentration of branch circuit controls in crowded cabinets. All plugs are individually housed on the outer casing walls of standard plug-in duct sections. All branch wiring connections are made on the outer side of these casing walls and not within the limited confines of a wiring trough.

Dust and Moisture Proof. Duct section halves are tightly bolted together. Adjacent sections are joined by means of scarf lap joints which are covered by the overlap of handhole covers. Handhole covers are of the screw-on type and extend beyond the actual cutouts of the handhole openings. Plug-in opening covers are embossed and when closed fit snugly into the crescent shaped cutouts. Plugs are individually housed. When the door of a plug is opened, only one unit is exposed to atmospheric conditions in contrast to the conventional panelboard where the opening of a large door exposes all circuits to possible dust and moisture.

High Salvage Value. The component parts of BUStribution centers and systems consist of sheet metal, enclosure bus bars and vitreous type insulators. These are materials which do not readily depreciate. Consequently, an investment in BUStribution is preserved for a longer period than is the case with other distribution systems.

For Industrial Plants



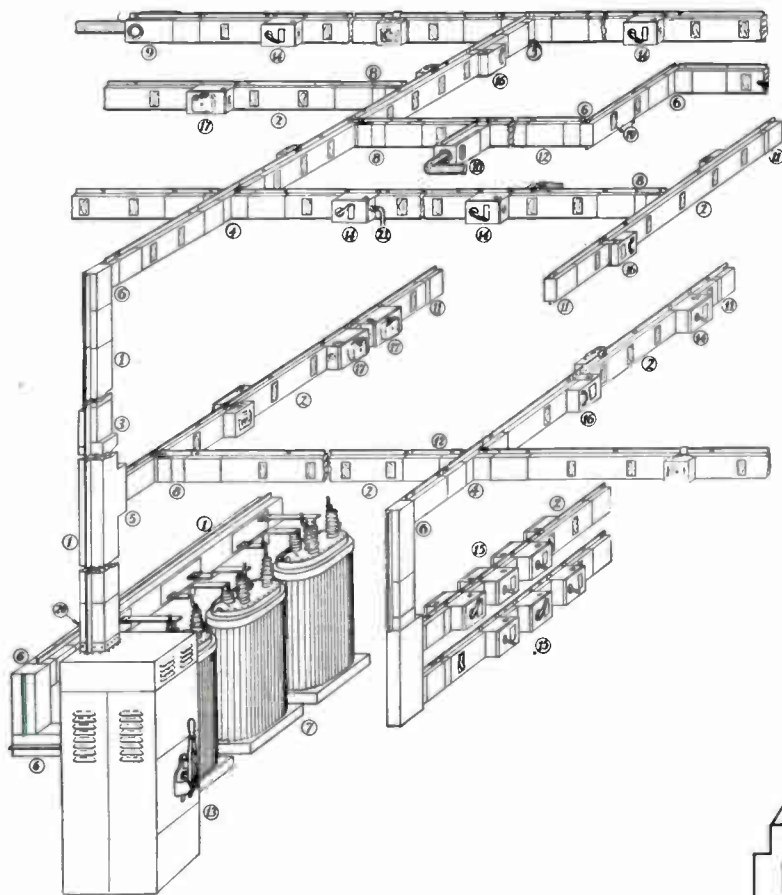
The modern production line idea is being adopted by an ever increasing number of industries. The use of a production line means frequent rearrangement of machines for different production. Wiring changes are made necessary. With the conventional type distribution panel, wiring changes usually mean delay and inconvenience to factory personnel, inter-

rupted production and an expensive outlay for temporary wiring.

With BUStribution, the stretched out distribution panel, wiring changes are made quickly and easily. It is the most flexible method of electrical distribution available, makes an ideal distribution system for industrial plants.

Bull Dog BUStribution Systems

Diagrammatic Layout Showing the Various Units



Key to Diagram

1. Feeder Type BUStribution
2. Plug-In Type BUStribution
3. Reducer
4. Cross Connection
5. Tee Connection
6. Elbow
7. Indoor Power Transformers
8. Plug-In Branch Run Adaptor
9. End Cable Tap Box
10. Plug-In Cable Tap Box
11. End Closer
12. Handhole Cover
13. Bull Dog Dead Front Steel Enclosed Main Switchboard
14. Vacu-Break Switch Plug
15. Vacu-Break Switch Plugs Banked for Grouped Control
16. Bus Swing Plug
17. Circuit Breaker Plug
19. Plug-In Opening
20. Flanged End Connection.
21. Rigid Conduit to Motor

For Office Buildings

BUStribution is not limited to industrial applications. The elimination of many runs of large conduit and cable and the saving of space allotted for the conventional switchboard makes BUStribution, in most cases, a more economical system of distribution for office and commercial buildings. It is equally suitable for the relatively small building or the building of skyscraper height.

Can be used as a main riser for both light and power within a building. Various type plugs can be mounted directly on the vertical BUStribution run and branch wires brought directly to each circuit. Can be installed as a complete integral distribution system.

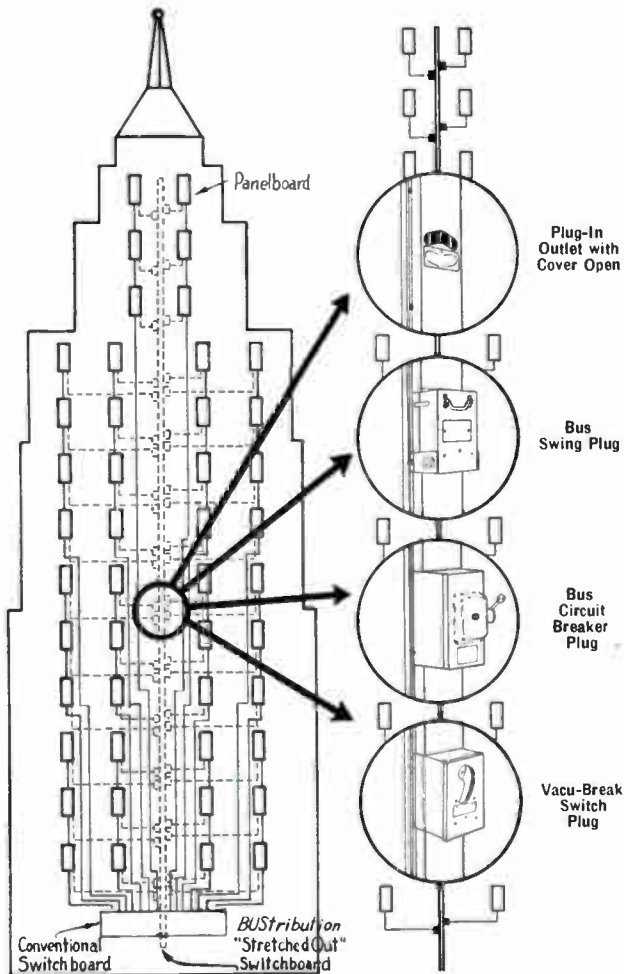
The Older Way

The solid line of distribution depicts a wire and conduit installation with a concentrated switchboard of the conventional type, located on or below the ground floor. This method, it will be noted, employs 4 wiring shafts, involving long runs of large cables and conduit. It also involves 2 separate services—one for light and one for power.

The BUStribution Way

The dotted line illustrates the BUStribution method. Note there is only 1 wire shaft, stretching up through the building for this installation and 1 service for both light and power on any 3-phase, 4-wire system.

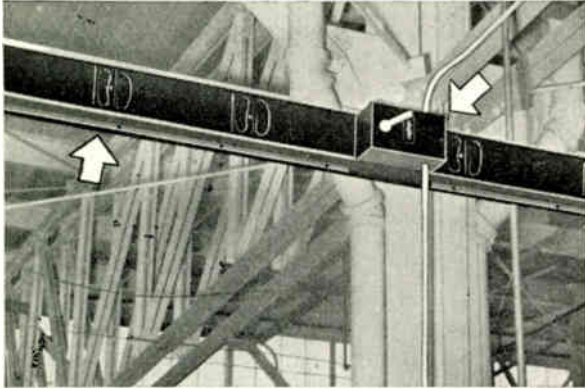
Note further the deconcentration of circuits which are thus located more conveniently and closer to their respective loads or panels. This also materially reduces the size and length of conduit and cable runs.



Bull Dog Duct Systems

BUStribution Duct

For Flexible Power Circuits

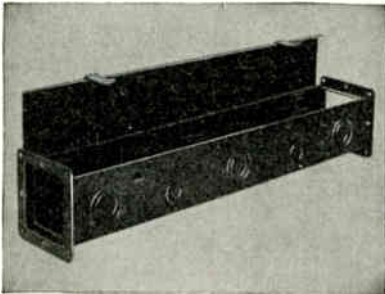


BUStribution is a pre-fabricated, enclosed bus bar wiring system for flexible electric power. With convenience outlets spaced every 12 inches of the duct run, power circuit protective devices of any type can be plugged in at any point and at any time. Any number of new circuits may be added to the system at will, or user can plug in instantly at new machine locations. Bull Dog 125 Type BUStribution makes it possible for even the smallest shop or individual plant department to use this mobile, flexible system that is always modern.

Write for 44-page BUStribution Bulletin containing illustrations, diagrams, etc.

Kbl-Duct and Fittings

For Enclosing Wires and Cables

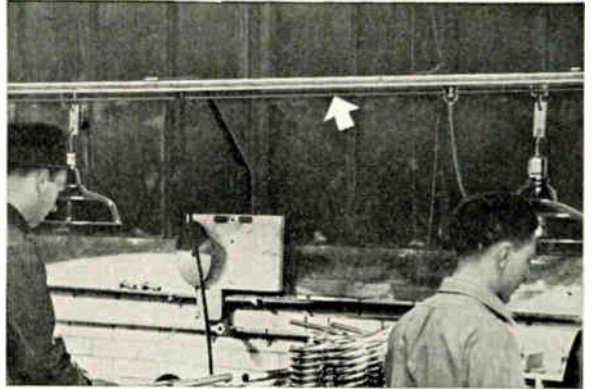


Kbl-Duct is an enclosed metal raceway provided with conveniently placed knockouts in sides and bottom. It has a hinged cover for ready accessibility to conductors which can be laid in place in the metal trough. Circuits can be run from the knockouts at any point to feed Universal Trol-E-Duct runs or motors. It is a flexible wiring system suitable for exposed work in industrial plants.

Write for current catalog for description and listing of Kbl-Duct parts and fittings.

Universal Trol-E-Duct

For Flexible Lighting Circuits

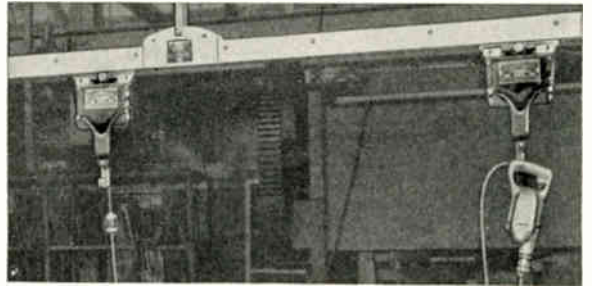


Trol-E-Duct provides the answer to every demand for adequate lighting. Through movable trolleys or twistout plugs, every inch of the system is a potential electrical outlet. It is ideal for both general and local lighting because lights can be moved along the duct run to meet changes in plant layout or requirements. If a plant is Trol-E-Duct equipped, new and finer luminaires may be adopted from time to time without delay or rewiring expense. Trol-E-Duct is the modern, flexible lighting system.

Send for manufacturer's 36-page bulletin giving detailed description and numerous illustrations.

Industrial Trol-E-Duct

For Feeding and Conveying Portable Tools



Industrial Trol-E-Duct is the ideal distribution system to install for heavy-duty power applications where mobility of tools and equipment is essential. Designed for operation under severe service conditions, it not only acts as a ready source of current, but as a means of support for high cycle tools used over assembly lines, work benches, etc. Useful for crane and hoist applications.

For complete and useful data, send for 16-page Industrial Trol-E-Duct Catalog.

T & B Watertight Floor Boxes



Box is furnished with polarized receptacle plug.

Three outlets in sides and 2 in bottom for 1/2-inch rigid conduit or any connector with 1/2-inch threads.

Has 5 tapped holes for 1/2-inch conduit, 4 of these are plugged with watertight steel plugs.

Box is Tabolite finish, bronze cover.

Outside diameter: Box body (under flange), 2 3/4"; overall (face of plate), 3 3/4". Outside height: Box body (under flange), 2 5/8"; overall, including plate but not nozzle, 3". Height of nozzle, 1 1/4"

Standard package, 25. Weight, 70 pounds.

- No. 1700, Box with 2-Wire Recp. each \$4.00
- No. 1701, Box with 3-Wire Recp. each 5.00
- No. 1702, Box with 3-Wire Grnd. Recp. each 5.00
- No. 1703, Phone or Signal Floor Box, No Recp. each 3.00

No. 8000 T & B Utility Outlets

10 Amperes, 250 Volts—15 Amperes, 125 Volts



An ideal convenience outlet for baseboards, plaster walls, mantles, etc.

Screws slip through keyhole slots in bottom of box. When tightened, box body, connector and convenience outlet become a rigid, compact unit.

Total height, 2 1/4 inches. Diameter body, 1 5/8 inches; diameter plate, 2 1/2 inches.

Tabolite finish.

Standard package, 50.

Price, No. 8000 each \$1.00

T & B Adjustable Watertight Floor Boxes



No. 1730, with Bell Nozzle

The bell nozzle is not standard equipment.

Adjustment range is 5/8-inch vertical and 10 degrees angular.

Minimum height of deep series boxes is 3 3/8 inches; of shallow series, 3 inches. Cover plate is 4 inches in diameter.

Unit package, 1; standard package, 10.

Description	CAT. No.		Each
	Deep Series	Shallow Series	
Box with 2-Wire Receptacle	1730	1760	\$5.00
Box with 3-Wire Receptacle	1731	1761	5.50
Box with 3-Wire Grounded Receptacle..	1732	1762	5.50
Tel. or Signal Box, No Receptacle	1733	1763	4.00

T & B Rectangular Gang Floor Boxes

Adjustable—Watertight

Combination 1/2 and 2-inch bronze disc with each gang is standard equipment. Receptacles and other accessories must be ordered separately. Two 1/2-inch drilled and tapped holes straight through each gang and one at each end of box is standard, with all but one hole in each gang plugged. Boxes drilled and tapped to specification, no extra charge.

Adjustment, 5/8-inch vertical, 10 degrees angular.

Unit package is 1. Standard package is \$60.00 net value.



No. 1810

Cat. No.	Each	No. of Gangs	DIMENSIONS, IN.		
			Min. Ht.	Width	Lgth.
1810	\$5.00	1	4 7/8	4 5/16	4 5/16
1820	10.00	2	4 7/8	4 5/16	8 3/8
1830	15.00	3	4 7/8	4 5/16	12 7/16
1840	20.00	4	4 7/8	4 5/16	16 1/2
1850	25.00	5	4 7/8	4 5/16	20 9/16

T & B Floor Box Accessories

For 1700, 1720, 1730, 1750 and 1760 Series



No. 1707 Disc



No. 1708 Nozzle



No. 1709 Disc



No. 1710 Reversible Disc

No. 1707
Bronze disc; standard equipment on entire 1700 series of boxes except 1703, 23, 33, 53 and 63.
No. 1707 each \$.25

No. 1708
Bronze bushed outlet nozzle; standard equipment on 1700-1-2; 1720-1-2; 1750-1-2.
No. 1708 each \$.80

No. 1709
Bronze disc with 1/2-inch hole, for telephone or signal work; standard equipment on 1703, 23, 33, 53 and 63.
No. 1709 each \$.80

No. 1710
Bronze reversible disc with fiber bushing.
No. 1710 each \$1.00

No. 1739
Bronze bushed triple nozzle.
No. 1739 each \$1.50

*No. 1742
Bushed extension piece, 1/2" pipe size, 6" long.
No. 1742 each \$1.70

*No. 1745
Two 2-wire receptacles (15 amperes 125 volts each) on extension 1/2" pipe size, 6" long.
No. 1745 each \$5.00

*Bushed extension piece can be furnished in any length. Extensions furnished in 3/4 and 1-inch stock, any length. Standard package, \$60.00 net value. Accessories may be assorted with complete boxes to obtain standard package.



No. 1739 Triple Nozzle



No. 1742 Extension Piece



No. 1745 Duplex Receptacle Extension

Steel City Floor Outlets

Non-Adjustable Type



No. 494



No. 490



No. 477

Designed for show cases, display windows, porches, homes, etc.

Equipped with brass tops and galvanized or sherardized bodies. Rustproof.

- No. 494, Service X-It each \$1.00
- No. 490, Telephone Outlet each 2.90
- No. 477, Receptacle Outlet each 5.00

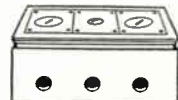
Adjustable Type



No. 400



No. 401



No. 443

Designed for installation in all types of buildings. Cover parts are bronze and bodies galvanized or sherardized.

Can be drilled and tapped to specification without additional cost.

- No. 400, Round Telephone Outlet each \$4.00
- No. 401, Round Receptacle Outlet each 4.50
- No. 441, Rectangular Single-Gang Outlet each 5.50
- No. 442, Rectangular 2-Gang Outlet each 11.00
- No. 443, Rectangular 3-Gang Outlet each 16.50
- No. 444, Rectangular 4-Gang Outlet each 22.00
- No. 445, Rectangular 5-Gang Outlet each 27.50
- No. 446, Rectangular 6-Gang Outlet each 33.00

R & S Non-Adjustable Floor Boxes

Round Type



No. 2580

For wood flooring. Brass cover and flange. Cast iron box, aluminized finish.

Specify size and location of outlets when ordering.

Nos. 2580 and 2590 boxes drilled and tapped four 1/2-inch outlets, three outlets plugged.

Furnished with or without convenience type receptacles.

No.	Each	Diam. Floor Plate In.	Height Box In.	Max. Outlet In.	Receptacle	Approx. Wt. Lb.
2580	\$3.00	3 1/2	3 1/4	1/2	2-Pole	2 1/4
2581	4.00	3 1/2	3 1/4	1/2	3-Pole	2 1/4
2590	2.00	3 1/2	3 1/4	1/2	*	1 3/4

*With 1/2-inch flush cap. Can be furnished with 3/4, 1, or 2 1/8-inch flush cap, if specified.

R & S Adjustable Floor Boxes

Round Type



No. 2502

Will accommodate all standard convenience receptacles. Can also be made to accommodate R & S 2, 3, and 4-pole receptacles up to 30 amperes on special order.

Permanent adjustment is provided by means of leveling screws permitting 15° angular and 5/8-inch vertical adjustment.

Brass cover and flange. Cast iron box, aluminized finish. Specify size and location of outlets.

No.	Each	Diam. Box Inches	Diam. Flange Inches	Min. Height Inches	Max. Outlet Inches	With Cap. Inches	Approx. Wt. Lb.
2502	\$4.00	4 1/2	4 1/8	3 5/8	1 1/2	1/2	4 1/2
2503	4.00	4 1/2	4 3/8	3 5/8	1 1/2	2 1/8	4 1/4

Can also be furnished in deep and shallow types.

Rectangular Type—1 to 5 Gang



No. 2512, with No. 2537 and 2538 Covers



No. 2558 Cone Nozzle

Ample angular adjustment and 5/8-inch vertical adjustment.

Brass cover and flange. Cast iron box, aluminized finish.

Specify size and location of outlets when ordering.

Complete with No. 2537 (1/2-inch cap) covers, or No. 2538 (2 1/8-inch cap) covers, as desired. Specify when ordering.

No.	Each	Description	Length Inches	Min. Height Inches	Width Inches	Max. Outlet Inches	Approx. Wt. Lb.
2511	\$5.00	Single-Gang	4 3/4	3 3/4	5 5/16	1 1/2	6 1/2
2512	9.50	2-Gang	7 3/4	3 3/4	5 5/16	1 1/2	12
2513	14.50	3-Gang	10 3/4	3 3/4	5 5/16	1 1/2	15 1/2
2514	19.00	4-Gang	13 3/4	3 3/4	5 5/16	1 1/2	19 1/2
2515	23.50	5-Gang	16 3/4	3 3/4	5 5/16	1 1/2	26
2558	1.00	Cone Nozzle	...	...	...	...	1/4

R & S Combination Floor Extension Sets

Standard

10 Amperes—250 Volts—2 and 3-Wire and Low Tension



No. 3000 Duplex Receptacle Outlet



No. 3008 Low Tension Outlet

Used in banks, offices, libraries, etc. for connection of desk lamps, dictaphones, adding machines, desk pads, telephones, etc.

Heavy bakelite interior mounted in brass casing tapped for 1/2 or 3/4-inch extensions as desired. Standard height, 6 inches overall. Other heights upon request.

Standard finish of fittings, brush brass. Prices of other finishes furnished upon application.

Sets can be supplied complete or in parts.

10-Ampere, 250-Volt, Duplex Combination Sets

No.	Each	Description	Approx. Wt. Lb.
3000	\$5.00	2-Wire Set for 1/2-Inch Floor Outlet...	1 1/4
3001	5.00	2-Wire Set for 3/4-Inch Floor Outlet...	1 1/4
3020	6.50	3-Wire Set for 1/2-Inch Floor Outlet...	1 1/2
3021	6.50	3-Wire Set for 3/4-Inch Floor Outlet...	1 1/2

Low Tension Combination Sets

No.	Each	Description	Approx. Wt. Lb.
3008	\$4.00	For 1/2-Inch Floor Outlet.....	1
3009	4.00	For 3/4-Inch Floor Outlet.....	1 1/4

R & S Extension Sets

Brass extension with moulded composition bushing. With heavy brass locking flange. Standard height, 6 inches overall. Other heights upon request.

Standard finish of fittings, brush brass. Prices of other finishes furnished upon application.

Plugs are not included.



No. 2630

No.	Each	Description	Approx. Wt. Lb.
2630	\$2.40	For 1/2-Inch Outlet.....	3/4
2631	2.40	For 3/4-Inch Outlet.....	1
2634	4.50	For 1-Inch Outlet.....	1 1/4

Can be furnished without flange upon request.

R & S Double-Duplex Outlet Type Extension Sets



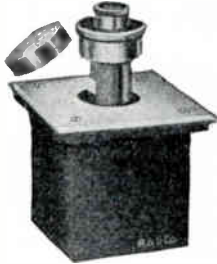
No. 2644

For under-floor duct system. Standard duplex receptacle is mounted in each side, making it possible to connect four plug caps at the same time. Plugs are not included. Standard finish, brush brass; other finishes on application.

No.	Each	Description	Approx. Wt. Lb.
2644	\$8.40	For 1/2-Inch Outlet.....	1 3/4
2645	8.40	For 3/4-Inch Outlet.....	1 3/4

R & S Heavy Duty Floor Receptacles and Plugs

Non-Adjustable with Watertight Plug
10 Amperes—125 Volts—2 and 3-Wire—Polarized



No. 22

Floor plate, 4 1/4 inches square. Minimum height of box, 3 5/8 inches. Maximum conduit size, 3/4 inch, 4-way. Specify size and location of outlets when ordering.

Box has aluminized finish; cover, brush brass.

Style	COMPLETE			PLUG ONLY		
	No.	Each	Approx. Wt. Lb.	No.	Each	Approx. Wt. Lb.
2-Wire	22	\$14.00	4 1/2	42	\$2.00	3 5/8
3-Wire	24	18.00	4 1/2	44	2.50	3 5/8

Non-Adjustable

30 Amperes—250 Volts—2 and 3-Wire—Polarized



No. 86

Receptacle and plug have bakelite interiors with heavy self-aligning machined contacts. Cable grip is incorporated in cast aluminum plug handle. Plug will also fit connectors and wall receptacles.

Diameter of floor plate, 5 inches. Height of box, 3 3/4 inches. Maximum conduit size, 1 inch, 4-way. Specify size and location of outlets when ordering.

Box has aluminized finish; cover, brush brass.

Style	COMPLETE			PLUG ONLY		
	No.	Each	Approx. Wt. Lb.	No.	Each	Approx. Wt. Lb.
2-Wire	86	\$9.00	4 1/2	556	\$1.80	1 1/4
3-Wire	89	11.50	5 1/2	157	2.10	3/4

These receptacles can be furnished in the adjustable type. Prices upon application.

R & S Heavy Duty Floor Receptacles and Plugs

Non-Adjustable
60 Amperes—250 Volts—2-Wire—Polarized



No. 142

Receptacle interior is made of bakelite with phosphor bronze switch jaw type spring contacts. Plug is also of bakelite with copper contact blades and is provided with cable grip in handle. Plug will also fit connectors and wall receptacles.

Floor plate, 4x7 inches. Height of box, 5 inches. Maximum conduit, 1 1/4 inches. Specify size and location of outlets when ordering.

Box has aluminized finish; cover, brush brass.

Style	COMPLETE			PLUG ONLY		
	No.	Each	Approx. Wt. Lb.	No.	Each	Approx. Wt. Lb.
2-Wire	142	\$24.00	9	140	\$3.00	1 1/2

60 Amperes—250 Volts—3 and 4-Wire—Polarized



No. 987

Diameter of floor plate, 6 3/4 inches. Height of box, 4 3/4 inches. Maximum conduit, 1 1/2 inches. Specify size and location of outlets when ordering.

Box has aluminized finish; cover, brush brass.

Style	COMPLETE			PLUG ONLY		
	No.	Each	Approx. Wt. Lb.	No.	Each	Approx. Wt. Lb.
3-Wire	987	\$20.00	13 1/2	150	\$4.50	1 3/4
4-Wire	364	22.00	10 3/4	337	5.00	3/4

These receptacles can be furnished in adjustable type. Prices upon application.

Can also be furnished in 75 amperes—440 volts, 100 amperes—250 volts, 3-wire, polarized to be used in series with switches and not for closing or opening circuits under load.

R & S Floor Outlets

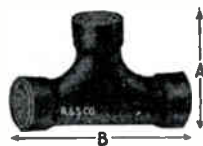
Future requirements for service connections may be anticipated by systematically studding the floor with these outlets, all radiating from one or more pull boxes, from which any changes or additions may subsequently be made by the

pulling of wires. The complete outfit consists of a galvanized iron long radius conduit fitting, and brass adjustable top with watertight cap, which can be raised or lowered to meet the final surfacing of floor.

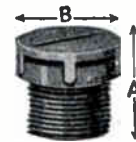
Elbows



Tees



Adjustable Tops



No.	Each	Size Conduit Inches	Dimen. A Inches	Approx. Wt. Lb.	No.	Each	Size Conduit Inches	DIMENSIONS INCHES		Approx. Wt. Lb.	No.	Each	Size Conduit Inches	Vertical Adjustment Inches	DIMENSIONS INCHES		Approx. Wt. Lb.
								A	B						A	B	
1900	\$.45	1/2	2 5/8	1/2	1905	\$1.10	1/2	2 5/8	4	7/8	1915	\$1.10	1/2	1/2	1 1/4	1 3/16	1/8
1901	.60	3/4	3 1/16	1/8	1906	1.40	3/4	3 1/16	4 5/8	1 1/8	1916	1.40	3/4	1/2	1 1/4	1 7/16	1/4
1902	.85	1	3 3/8	1	1907	2.00	1	3 3/8	5	1 3/8	1917	1.75	1	1/2	1 3/16	1 3/4	3/8
1903	2.75	1 1/4	4 5/8	1 3/4	1908	5.50	1 1/4	4 5/8	7	3 3/4	1918	3.50	1 1/4	3/4	1 3/4	2 1/8	3/4
1904	3.00	1 1/2	5 1/16	4	1909	5.75	1 1/2	5 1/16	8 3/8	4 3/4	1919	3.75	1 1/2	3/4	1 3/4	2 1/2	7/8
1914	4.15	2	7	8 3/4	1910	6.00	2	7	10 3/4	13 1/2	1920	6.00	2	3/4	2 3/16	3	2

FA Floor Boxes

Types FB-5, FB-345 and FB-345-2



Type FB-5



Type FB-345-2

Particularly designed for installation in wood floors with concrete base, can also be installed in concrete or tile floors.

Adjustable type with 5-inch diameter, satin finish brass reversible cover.

Type FB-5 is for telephone, signal and bell system outlets, also light and small capacity power outlets without receptacle. Cover has 1/2-inch pipe size tapped opening with brass plug and one-piece fiber bushing.

Type FB-345 is for light or power service with small capacity receptacle (15-amp., 125-v., 2-pole, single flush receptacles with fastening screws on 2 3/8-inch centers and standard plug cap); also telephone, signal and bell service. Cover has 1 1/4-inch pipe size tapped opening with brass plug and split bushing.

Type FB-345-2 is of same type and for same application as Type FB-345, except cover has 2-inch tapped opening with brass plug, but no bushing, and is particularly suitable for use with the following capacity.

15 amp., 125 v., 2 pole, Arrow 7960-7963, H&H 7960-7963, Hubbell 5566-6730.

15 amp., 125 v., 3 pole, Arrow 8147-SA, Bryant, 9116-9111, H&H 7310-7070, Hubbell 6051-6149.

20 amp., 250 v., 2 pole, Arrow 8245-JA, Bryant 556-652, H&H 7089-7303, Hubbell 5552-6720.

20 amp., 250 v., 3 pole, Arrow 8140-KA, Bryant 9326-9322, H&H 7316-7314, Hubbell 6810-7198.

Each unit is furnished with a hot galvanized finish No. 12 gage, 4 1/4-inch diameter, 3-inch deep pressed steel box, having two 1/2-inch and two 3/4-inch conduit knockouts in opposite sides and one 1/2-inch knockout in bottom; 1-inch conduit can be used by reaming these knockouts.

Cadmium plated drawn steel adjusting ring permits adjustment for 3/4-inch variation in setting of box. Extra depth rings for greater variation are available at an additional charge. Rubber gaskets make the box reasonably watertight.

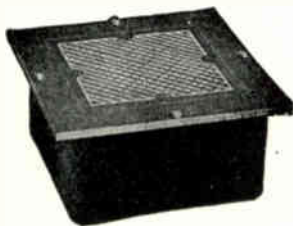
Standard package, 24 of one type.

Shipping weight, 100 pounds.

All Types.....each \$6.00

For special depth adjusting rings add \$1.50 for each additional inch.

FA Signal Floor Boxes



Cast iron box with brass cover.

Type 437-S complies with U.S. Treasury Department specifications for work under its jurisdiction.

Tapped conduit holes will be provided if template accompanies order.

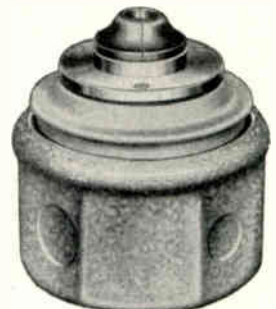
No.....	437-S	437-D
Each.....	\$16.50	17.50
Inside Dimensions.....inches	5 1/2 x 5 1/2 x 3	5 1/2 x 5 1/2 x 4

FA Floor Boxes

Types FB-3W and FB-343R



Type FB-3W



Type FB-343R

For installation in concrete or tile floors.

Adjustable type with 3-inch diameter, satin finish brass reversible cover.

Type FB-3W is for telephone, signal and bell system outlets; also light and small capacity power outlets without receptacle. Cover has 1/2-inch pipe size tapped opening with brass plug and one-piece fiber bushing.

Type FB-343R is for light or power service with small capacity receptacle; also telephone, signal and bell systems. Special receptacles are furnished at extra charge. The following receptacle and plug combinations can also be used.

15 amp., 125 v., 2 pole, H&H 7176-1407, Hubbell 7331-7068, Arrow 8232-RA.

15 amp., 125 v., 3 pole polarized, Hubbell 7214-9975.

Each unit is furnished with a hot galvanized finish No. 12 gage, 4 1/4-inch diameter, 3-inch deep pressed steel box, having two 1/2-inch and two 3/4-inch conduit knockouts in opposite sides and one 1/2-inch knockout in bottom; 1-inch conduit can be used by reaming these knockouts.

Cadmium plated drawn steel adjusting ring permits adjustment for 3/4-inch variation in setting of box. Extra depth rings for greater variation are available at an additional charge. Rubber gaskets make the box reasonably watertight.

Standard package, 24 of one type.

Shipping weight, 100 pounds.

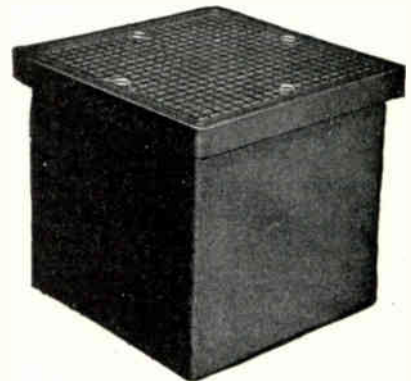
Both Types.....each \$6.00

Special depth adjusting rings, add \$1.50 for each additional inch.

Receptacles

10 Amp., 250 V., 2 Pole.....	each \$.35
10 Amp., 250 V., 3 Pole, Polarized.....	each .60

FA Hand Hole Boxes



Cast iron box with checkered cover of same material and rubber gasket to exclude moisture.

Tapped conduit holes will be provided if template accompanies order.

No.....	2010	2011	2012
Each.....	\$44.00	56.00	92.00
Inside Dimensions....inches	12x12x6	12x12x12	18x18x12

Obround Series Condulets

Form 7
Schedule CR

Obround Condulets of the same size take the same covers and wiring devices.
Cadmium-galvanized is the standard finish.

Type A



Size In.	Std. Pkg.	Threaded Thick Wall		Threadless			
		No.	Each	Thick Wall No.	Each	Thin Wall No.	Each
1/2	100	A17	\$.23	A197	\$.30	A147	\$.30
3/4	50	A27	.28	A297	.40	A247	.40
1	20	A37	.40	A397	.60	A347	.60
1 1/4	20	A47	.80	A497	.95	A447	.95
1 1/2	10	A57	1.04	A597	1.25	A547	1.25
2	5	A67	2.14	A697	2.50	A647	2.50
2 1/2	5	A77	4.20	A797	5.20	.....	.....
3	5	A87	5.00	A897	6.30	.....	.....
3 1/2	5	A97	7.00	A997	9.90	.....	.....
4	5	A107	9.00	A1097	11.25	.....	.....

Type B



Size In.	Std. Pkg.	One-Piece Body		Two-Piece Body	
		Threaded	Threadless	Threaded	Threadless
1/2	100	B17	\$.23	B197	\$.30
3/4	50	B27	.28	B297	.40
1	20	B37	.40	B397	.60
1 1/4	20	B47	\$1.25	B497	\$1.48
1 1/2	10	B57	1.50	B597	1.84
2	5	B67	2.60	B697	3.20
2 1/2	5	B77	8.15	B797	9.15
3	5	B87	9.00	B897	10.30
3 1/2	5	B97	15.25	B997	17.00
4	5	B107	17.00	B1097	19.25

Type C



Size In.	Std. Pkg.	Threaded		Threadless	
		No.	Each	No.	Each
1/2	100	C17	\$.32	C197	\$.40
3/4	50	C27	.36	C297	.50
1	20	C37	.52	C397	.75
1 1/4	20	C47	1.05	C497	1.35
1 1/2	10	C57	1.40	C597	1.90
2	5	C67	2.40	C697	3.30
2 1/2	5	C77	5.00	C797	6.00
3	5	C87	6.50	C897	8.50
3 1/2	5	C97	10.50	C997	11.50
4	5	C107	12.00	C1097	14.00

Type E



Size In.	Std. Pkg.	Threaded		Threadless	
		No.	Each	No.	Each
1/2	100	E17	\$.23	E197	\$.30
3/4	50	E27	.28	E297	.40
1	20	E37	.40	E397	.60
1 1/4	20	E47	.80	E497	.95
1 1/2	10	E57	1.04	E597	1.25
2	5	E67	2.14	E697	2.50
2 1/2	5	E77	4.20	E797	5.20
3	5	E87	5.00	E897	6.30
3 1/2	5	E97	7.00	E997	9.90
4	5	E107	9.00	E1097	11.25

Obround Series Condulets

Form 7
Schedule CR

Obround Condulets of the same size take the same covers and wiring devices.
Cadmium-galvanized is the standard finish.

Type F

Type F is not furnished in the threadless.

Threaded—Thick Wall



Size In.	Std. Pkg.	No.	Each
1/2	100	F17	\$.50
3/4	50	F27	.80
1	20	F37	1.25
1 1/4	20	F47	2.20
1 1/2	10	F57	3.25
2	5	F67	5.00
2 1/2	5	F77	8.20
3	5	F87	10.20
3 1/2	5	F97	18.00
4	5	F107	25.00

Type L



Type L is a double-faced Condulet which may be used either as an LL or LR Condulet. It has two openings, one of which is furnished with a blank sheet steel cover.

Size In.	Std. Pkg.	Threaded—Thick Wall		Threadless—Thick Wall		Threadless—Thin Wall	
		No.	Each	No.	Each	No.	Each
1/2	100	L17	\$.32	L197	\$.40	L147	\$.40
3/4	50	L27	.36	L297	.50	L247	.50
1	20	L37	.52	L397	.75	L347	.75
1 1/4	20	L47	1.05	L497	1.35	L447	1.35
1 1/2	10	L57	1.40	L597	1.90	L547	1.90
2	5	L67	2.40	L697	3.30	L647	3.30

Type LB



Size In.	Std. Pkg.	Threaded		Threadless	
		No.	Each	No.	Each
1/2	100	LB17	\$.32	LB197	\$.40
3/4	50	LB27	.36	LB297	.50
1	20	LB37	.52	LB397	.75
1 1/4	20	LB47	1.05	LB497	1.35
1 1/2	10	LB57	1.40	LB597	1.90
2	5	LB67	2.40	LB697	3.30
2 1/2	5	LB777	5.00	LB797	6.00
3	5	LB87	6.50	LB897	8.50
3 1/2	5	LB97	10.50	LB997	11.50
4	5	LB107	12.00	LB1097	14.00

Type LF



Size In.	Std. Pkg.	Threaded		Threadless	
		No.	Each	No.	Each
1/2	100	LF17	\$.32	LF197	\$.40
3/4	50	LF27	.36	LF297	.50
1	20	LF37	.52	LF397	.75
1 1/4	20	LF47	1.05	LF497	1.35
1 1/2	10	LF57	1.40	LF597	1.90
2	5	LF67	2.40	LF697	3.30
2 1/2	5	LF777	5.00	.....	.....
3	5	LF87	6.50	.....	.....
3 1/2	5	LF97	10.50	.....	.....
4	5	LF107	12.00	.....	.....

Obround Series Condulets

Form 7
Schedule CR

Obround Condulets of the same size take the same covers and wiring devices.
Cadmium-galvanized is the standard finish.

Type LL



Size In.	Std. Pkg.	Threaded		Threadless			
		Thick Wall No.	Each	Thick Wall No.	Thin Wall No.	Each	
1/2	100	LL17	\$.32	LL197	\$.40	LL147	\$.40
3/4	50	LL27	.36	LL297	.50	LL247	.50
1	20	LL37	.52	LL397	.75	LL347	.75
1 1/4	20	LL47	1.05	LL497	1.35	LL447	1.35
1 1/2	10	LL57	1.40	LL597	1.90	LL547	1.90
2	5	LL67	2.40	LL697	3.30	LL647	3.30
2 1/2	5	LL777	5.00	LL797	6.00		
3	5	LL87	6.50	LL897	8.50		
3 1/2	5	LL97	10.50	LL997	11.50		
4	5	LL107	12.00	LL1097	14.00		

Type LR



Size In.	Std. Pkg.	Threaded		Threadless			
		No.	Each	No.	Each		
1/2	100	LR17	\$.32	LR197	\$.40	LR147	\$.40
3/4	50	LR27	.36	LR297	.50	LR247	.50
1	20	LR37	.52	LR397	.75	LR347	.75
1 1/4	20	LR47	1.05	LR497	1.35	LR447	1.35
1 1/2	10	LR57	1.40	LR597	1.90	LR547	1.90
2	5	LR67	2.40	LR697	3.30	LR647	3.30
2 1/2	5	LR777	5.00	LR797	6.00		
3	5	LR87	6.50	LR897	8.50		
3 1/2	5	LR97	10.50	LR997	11.50		
4	5	LR107	12.00	LR1097	14.00		

Type LBB



Size In.	Std. Pkg.	Threaded—Thick Wall	
		No.	Each
1/2	100	LBB17	\$.40
3/4	50	LBB27	.45
1	20	LBB37	.65
1 1/4	20	LBB47	1.05
1 1/2	10	LBB57	1.40
2	5	LBB67	2.50
2 1/2	5	LBB777	5.00
3	5	LBB87	6.50
3 1/2	5	LBB97	10.50
4	5	LBB107	12.00

Type LLB



Size In.	Std. Pkg.	Threaded—Thick Wall	
		No.	Each
1/2	100	LLB17	\$.40
3/4	50	LLB27	.45
1	20	LLB37	.65
1 1/4	20	LLB47	1.05
1 1/2	10	LLB57	1.40
2	5	LLB67	2.50
2 1/2	5	LLB777	5.00
3	5	LLB87	6.50
3 1/2	5	LLB97	10.50
4	5	LLB107	12.00

Type LFB



Size In.	Std. Pkg.	Threaded	
		No.	Each
1/2	100	LFB17	\$.40
3/4	50	LFB27	.45
1	20	LFB37	.65
1 1/4	20	LFB47	1.05
1 1/2	10	LFB57	1.40
2	5	LFB67	2.50
2 1/2	5	LFB777	5.00
3	5	LFB87	6.50
3 1/2	5	LFB97	10.50
4	5	LFB107	12.00

Type LRB



Size In.	Std. Pkg.	Threaded	
		No.	Each
1/2	100	LRB17	\$.40
3/4	50	LRB27	.45
1	20	LRB37	.65
1 1/4	20	LRB47	1.05
1 1/2	10	LRB57	1.40
2	5	LRB67	2.50
2 1/2	5	LRB777	5.00
3	5	LRB87	6.50
3 1/2	5	LRB97	10.50

Obround Series Condulets

Form 7
Schedule CR

Obround Condulets of the same size take the same covers and wiring devices.

Size of cover or wiring device is the same as size of hubs at ends of cover opening.

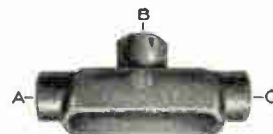
Sizes of hubs are indicated by sequence of letters.
Cadmium-galvanized is the standard finish.

Type T



Size In.	Std. Pkg.	Threaded		Threadless			
		Thick Wall No.	Each	Thick Wall No.	Thin Wall No.	Each	
1/2 - 1/2 - 1/2	100	T17	\$.38	T197	\$.50	T1147	\$.50
1/2 - 3/4 - 1/2	100	T127	.56				
1/2 - 1 - 1/2	100	T137	.63				
3/4 - 1/2 - 3/4	50	T217	.57	T2197	.84	T21247	.84
3/4 - 3/4 - 3/4	50	T27	.46	T297	.70	T22247	.70
3/4 - 1 - 3/4	50	T237	.65				
3/4 - 1 1/2 - 3/4	50	T257	.90				
1 - 1/2 - 1	20	T317	.80	T3197	1.19	T31347	1.19
1 - 3/4 - 1	20	T327	.80	T3297	1.19	T32347	1.19
1 - 1 - 1	20	T37	.64	T397	1.00	T33347	1.00
1 - 2 - 1	20	T367	1.45				
1 1/4 - 1/2 - 1 1/4	20	T417	1.22	T4197	1.91	T41447	1.91
1 1/4 - 3/4 - 1 1/4	20	T427	1.22	T4297	1.91	T42447	1.91
1 1/4 - 1 - 1 1/4	20	T437	1.22	T4397	1.91	T43447	1.91
1 1/4 - 1 1/4 - 1 1/4	20	T47	1.22	T497	1.80	T44447	1.80
1 1/4 - 1 1/2 - 1 1/4	20	T457	1.50				
1 1/4 - 2 - 1 1/4	20	T467	1.96				
1 1/2 - 1/2 - 1 1/2	10	T517	1.69				
1 1/2 - 3/4 - 1 1/2	10	T527	1.69				
1 1/2 - 1 - 1 1/2	10	T537	1.69				
1 1/2 - 1 1/4 - 1 1/2	10	T547	1.69				
1 1/2 - 1 1/2 - 1 1/2	10	T57	1.69	T597	2.50	T55547	2.50
1 1/2 - 2 - 1 1/2	10	T567	2.52				
2 - 1/2 - 2	5	T617	2.55				
2 - 3/4 - 2	5	T627	2.55				
2 - 1 - 2	5	T637	2.55				
2 - 1 1/4 - 2	5	T647	2.55				
2 - 1 1/2 - 2	5	T657	2.55				
2 - 2 - 2	5	T67	2.55	T697	3.90	T66647	3.90
2 1/2 - 1 1/2 - 2 1/2	5	T757	5.00				
2 1/2 - 2 - 2 1/2	5	T767	5.00				
2 1/2 - 2 1/2 - 2 1/2	5	T77	5.00	T797	7.00		
3 - 2 - 3	5	T867	7.50				
3 - 3 - 3	5	T87	7.50	T897	9.50		
3 1/2 - 2 1/2 - 3 1/2	5	T977	11.00				
3 1/2 - 3 1/2 - 3 1/2	5	T97	11.00	T997	13.00		
4 - 4 - 4	5	T107	13.00	T10097	15.80		

Type TB



Size In.	Std. Pkg.	Threaded		Threadless			
		Thick Wall No.	Each	Thick Wall No.	Thin Wall No.	Each	
1/2 - 1/2 - 1/2	100	TB17	\$.38	TB197	\$.50	TB147	\$.50
3/4 - 3/4 - 3/4	50	TB27	.46	TB297	.70	TB247	.70
3/4 - 1 - 3/4	50	TB237	.65				
1 - 1/2 - 1	20	TB317	.80				
1 - 3/4 - 1	20	TB327	.80				
1 - 1 - 1	20	TB37	.64	TB397	1.00	TB347	1.00
1 1/4 - 1/4 - 1 1/4	10	TB47	1.22	TB497	1.80	TB447	1.80
1 1/2 - 1 1/2 - 1 1/2	10	TB57	1.69	TB597	2.50	TB547	2.50
2 - 2 - 2	5	TB67	2.55	TB697	3.90	TB647	3.90
2 1/2 - 2 1/2 - 2 1/2	5	TB77	5.00	TB797	7.00		
3 - 3 - 3	5	TB87	7.50	TB897	9.50		
3 1/2 - 3 1/2 - 3 1/2	5	TB97	11.00	TB997	13.00		
4 - 4 - 4	5	TB107	13.00	TB10097	15.80		

Obround Series Condulets

Schedule CR

Obround Condulets of the same size take the same covers and wiring devices.

Cadmium-galvanized is the standard finish.

Type TL



The size of the cover or wiring device is the same as the size of the hubs at the ends of the cover opening.

Sizes of hubs are indicated by sequence of letters.

Size A-B-C	Std. Pkg.	Threaded		Threadless			
		Thick Wall No.	Each	Thick Wall No.	Each	Thin Wall No.	Each
1/2 - 1/2 - 1/2	100	TL17	\$.48	TL197	\$.63	TL147	\$.63
1/2 - 3/4 - 1/2	100	TL127	.56				
1/2 - 1 - 1/2	100	TL137	.63				
3/4 - 1/2 - 3/4	50	TL217	.57				
3/4 - 3/4 - 3/4	50	TL27	.57	TL297	.84	TL247	.84
3/4 - 1 - 3/4	50	TL237	.65				
1 - 1/2 - 1	20	TL317	.80				
1 - 3/4 - 1	20	TL327	.80				
1 - 1 - 1	20	TL37	.80	TL397	1.19	TL347	1.19
1 1/4 - 1 1/4 - 1 1/4	10	TL47	1.22				
1 1/2 - 1 1/2 - 1 1/2	10	TL57	1.69				

Type TR



The size of the cover or wiring device is the same as the size of the hubs at the ends of the cover opening.

Sizes of hubs are indicated by sequence of letters.

Size A-B-C	Std. Pkg.	Threaded		Threadless			
		Thick Wall No.	Each	Thick Wall No.	Each	Thin Wall No.	Each
1/2 - 1/2 - 1/2	100	TR17	\$.48	TR197	\$.63	TR147	\$.63
1/2 - 3/4 - 1/2	100	TR127	.56				
1/2 - 1 - 1/2	100	TR137	.63				
3/4 - 1/2 - 3/4	50	TR217	.57				
3/4 - 3/4 - 3/4	50	TR27	.57	TR297	.84	TR247	.84
1 - 1/2 - 1	20	TR317	.80				
1 - 3/4 - 1	20	TR327	.80				
1 - 1 - 1	20	TR37	.80	TR397	1.19	TR347	1.19
1 1/4 - 1 1/4 - 1 1/4	10	TR47	1.22				
1 1/2 - 1 1/2 - 1 1/2	10	TR57	1.69				

Type U



Size A-B-C	Std. Pkg.	Threaded		Threadless			
		Thick Wall No.	Each	Thick Wall No.	Each	Thin Wall No.	Each
1/8	50	U187	\$.33				
1/4	50	U287	.33				
3/8	50	U387	.40				
1/2	100	U17	.48	U197	\$.58	U147	\$.58
3/4	50	U27	.54	U297	.72	U247	.72
1	20	U37	.78	U397	1.04	U347	1.04
1 1/4	20	U47	1.26	U497	1.72	U447	1.72
1 1/2	10	U57	1.68	U597	2.36	U547	2.36
2	5	U67	3.00	U697	4.20	U647	4.20
2 1/2	5	U777	6.00				
3	5	U87	7.80				
3 1/2	5	U97	12.60				

Obround Series Condulets

Form 7

Schedule CR

Obround Condulets of the same size take the same covers and wiring devices.

Cadmium-galvanized is the standard finish.

Type UB



Size In.	Std. Pkg.	Threaded		Threadless			
		Thick Wall No.	Each	Thick Wall No.	Each	Thin Wall No.	Each
1/2	100	UB17	\$.48	UB197	\$.58	UB147	\$.58
3/4	50	UB27	.54	UB297	.72	UB247	.72
1	20	UB37	.78	UB397	1.04	UB347	1.04
1 1/4	20	UB47	1.26	UB497	1.72	UB447	1.72
1 1/2	10	UB57	1.68	UB597	2.36	UB547	2.36
2	5	UB67	3.00	UB697	4.20	UB647	4.20
2 1/2	5	UB777	6.00				
3	5	UB87	7.80				
3 1/2	5	UB97	12.60				
4	5	UB107	14.40				

Type X



The size of the cover or wiring device for a Type X Condulet is the same as the size of the hubs at the ends of the cover opening.

Sizes of hubs are indicated by sequence of letters.

Threaded

Size A-B-C-D In.	Std. Pkg.	Thick Wall		Thin Wall	
		No.	Each	No.	Each
1/2 - 1/2 - 1/2 - 1/2	75	X17	\$.48		
3/4 - 1/2 - 1/2 - 1/2	50	X21117	.77		
3/4 - 1/2 - 3/4 - 1/2	50	X217	.77		
3/4 - 3/4 - 3/4 - 3/4	50	X27	.62		
1 - 1/2 - 1 - 1/2	20	X317	1.05		
1 - 3/4 - 1 - 3/4	20	X327	1.05		
1 - 1 - 1 - 1	20	X37	.84		
1 1/4 - 1/2 - 1 1/4 - 1/2	20	X417	1.40		
1 1/4 - 3/4 - 1 1/4 - 3/4	20	X427	1.40		
1 1/4 - 1 1/4 - 1 1/4 - 1 1/4	20	X47	1.40		
1 1/2 - 3/4 - 1 1/2 - 3/4	10	X527	1.78		
1 1/2 - 1 1/2 - 1 1/2 - 1 1/2	10	X57	1.78		
2 - 2 - 2 - 2	5	X67	3.50		
2 1/2 - 2 1/2 - 2 1/2 - 2 1/2	5	X77	6.00		
3 - 3 - 3 - 3	5	X87	10.00		

Threadless

1/2 - 1/2 - 1/2 - 1/2	75	X197	\$.60	X111147	\$.60
3/4 - 3/4 - 3/4 - 3/4	50	X297	.90	X222247	.90
1 - 1/2 - 1 - 1/2	20	X3197	1.57	X311347	1.57
1 - 1 - 1 - 1	20	X397	1.35	X333347	1.35
1 1/4 - 1 1/4 - 1 1/4 - 1 1/4	20	X497	2.25	X444447	2.25
1 1/2 - 1 1/2 - 1 1/2 - 1 1/2	10	X597	3.10	X555547	3.10
2 - 2 - 2 - 2	5	X697	4.72	X666647	4.72

Covers for Obround Series Condulets

Schedule CR

Porcelain—Composition
1-Wire Standard



Size In.	Porcelain		Composition	
	Diam. Holes In.	Std. Pkg.	Porcelain No.	Composition No. Each
1/2	7/16	200	171	\$.10 1771
3/4	7/16	100	271	.15 2771
1	7/16	50	371	.25 3771
1 1/4	7/16	25	471	.36 4771
1 1/2	1 3/8	10	571	.36 5771
2	1 3/4	5	671	.60 6771
2 1/2 or 3	2 5/16	5	871	.80 8771
3 1/2 or 4	3 3/4	5	971	.90 9771

2-Wire



Size In.	Porcelain		Composition	
	Diam. Holes In.	Std. Pkg.	Porcelain No.	Composition No. Each
1/2	3/8	200	172	\$.10 1772
3/4	15/32	100	272	.15 2772
1	1/2	50	372	.25 3772
1 1/4	11/16	25	472	.36 4772
1 1/2	13/16	10	572	.36 5772
2	1	5	672	.60 6772
2 1/2 or 3	1 7/16	5	872	.80 8772
3 1/2 or 4	1 15/16	5	972	.90 9772

3-Wire



Size In.	Porcelain		Composition	
	Diam. Holes In.	Std. Pkg.	Porcelain No.	Composition No. Each
1/2	3/8	200	173	\$.10 1773
1/2	3/8	200	...	... 1773
3/4	15/32	100	273	.15 2773
1	1/2	50	373	.25 3773
1 1/4	11/16	25	473	.36 4773
1 1/2	13/16	10	573	.36 5773
2	1	5	673	.60 6773
2 1/2 or 3	1 7/16	5	873	.80 8773
3 1/2 or 4	1 15/16	5	973	.90 9773

4-Wire



Size In.	Porcelain		Composition	
	Diam. Holes In.	Std. Pkg.	Porcelain No.	Composition No. Each
1/2	3/8	200	174	\$.10 1774
3/4	5/16	100	274	.15 2774
1	13/32	50	374	.25 3774
1 1/4	17/32	25	474	.36 4774
1 1/2	5/8	10	574	.36 5774
2	1	5	674	.60 6774
2 1/2 or 3	1 7/16	5	874	.80 8774
3 1/2 or 4	1 15/16	5	974	.90 9774

5-Wire



Size In.	Porcelain		Composition	
	Diam. Holes In.	Std. Pkg.	Porcelain No.	Composition No. Each
3/4	3/16	100	275	\$.15 2775
1	13/32	50	375	.25 3775
1 1/4	17/32	25	475	.36 4775
1 1/2	9/8	10	575	.36 5775
2	1 1/8	5	675	.60 6775
2 1/2 or 3	1 1/16	5	875	.80 8775
3 1/2 or 4	1 1/2	5	...	... 9775

6-Wire



Size In.	Porcelain		Composition	
	Diam. Holes In.	Std. Pkg.	Porcelain No.	Composition No. Each
3/4	3/16	100	276	\$.15 2776
1	3/8	50	376	.25 3776
1 1/4	17/32	25	476	.36 4776
1 1/2	17/32	10	576	.36 5776
2	5/8	5	676	.60 6776
2 1/2 or 3	1 1/8	5	876	.80 8776
3 1/2 or 4	1 3/8	5	...	... 9776

Covers for Obround Series Condulets

Schedule CR

Blank Composition Covers



Size Inches	Std. Pkg.	No.	Each
1/2	200	1770	\$.20
3/4	100	2770	.30
1	50	3770	.50
1 1/4	25	4770	1.00
1 1/2	10	5770	1.00
2	5	6770	1.20
2 1/2 or 3	5	8770	1.60
3 1/2 or 4	5	9770	2.50

If specified on order, blank composition cover will be furnished with special drilling at an advance in list price as follows: Up to 1/2 inch diameter, 5 cents list per hole; over 1/2 inch but less than 1-inch, 15 cents list per hole; 1 inch and over, 20 cents list per hole.

Blank Metal Covers

Sheet Steel—Cast Feraley



Cadmium-galvanized is the standard finish.

Size Inches	Std. Pkg.	Sheet Steel		Cast Feraley	
		No.	Each	No.	Each
1/2	200	170	\$.06	170f	\$.16
3/4	100	270	.08	270f	.22
1	50	370	.17	370f	.35
1 1/4	25	470	.24	470f	.50
1 1/2	10	570	.24	570f	.50
2	5	670	.42	670f	.90
2 1/2 or 3	5	...	...	*870	.56
3 1/2 or 4	5	...	...	*979	.60

*These covers are made of cast aluminum.

Covers with Nipple

Cast Feraley



With Male Nipple

With Female Nipple

Cadmium-galvanized is the standard finish.

Size Inches	Std. Pkg.	With 3/8-Inch Nipple		Female	
		No.	Each	No.	Each
1/2	200	1723	\$.25	1733	\$.25
3/4	100	2723	.30	2733	.30
1	50	3723	.40	3733	.40
With 1/2-Inch Nipple					
1/2	200	1724	\$.30	1734	\$.30
3/4	100	2724	.35	2734	.35
1	50	3724	.45	3734	.45
1 1/4	25	4724	.56	4734	.56
1 1/2	10	5724	.56	5734	.56

Covers with Cord Clamps

Sheet Steel



Drop cord fixtures, especially in industrial plants, are frequently subjected to very hard usage. This Condulet cover is provided with a cord clamp and bushed hole which safeguard the drop cord. The clamp prevents any strain on the soldered connections. When the lamp socket is provided with a similar cord clamp, the drop cord is effectually protected against damage.

Takes cord .250 to .375-inch diameter.

Cadmium-galvanized is the standard finish.

Size Inches	Std. Pkg.	No.	Each
1/2	200	1972	\$.30
3/4	100	2972	.35

Wiring Devices for Obround Series Condulets

Schedule CR

2-Pole Attachment Plug Receptacles

15 Amperes, 125 Volts or
10 Amperes, 250 Volts
Single, with Double
T Slots



Composition	
Size In.	Std. Pkg.
1/2	100
3/4	100
1	50

Composition	
No.	Each
1715	\$.40
2715	.45
3715	.70

Porcelain	
No.	Each
1705	\$.40
2705	.45
3705	.50

Duplex, with Parallel Slots



Composition	
Size, In.	Std. Pkg.
1/2	100
3/4	100
1	50

No.	Each
1748	\$.40
2748	.50
3748	.70

Duplex, with Double T Slots



Composition	
Size, In.	Std. Pkg.
1/2	100
3/4	50
1	50

No.	Each
1725	\$.60
2725	.70
3725	.90

2-Pole Polarity Plug Receptacles



Composition	
Size In.	Std. Pkg.
1/2	100
3/4	100
1	50
1/2	100
3/4	100
1	50

Composition	
No.	Each
1728	\$.40
2728	.45
3728	.70

Porcelain	
No.	Each
1708	\$.40
2708	.45
3708	.50

20 Amperes, 250 Volts	
No.	Each
1738	\$.55
2738	.60
3738	.85

No.	Each
1718	\$.55
2718	.60
3718	.65

3-Wire, 3-Pole Attachment Plug Receptacles

Porcelain



Size, In.	Std. Pkg.	No.	Each
1/2	100	1709	\$.60
3/4	100	2709	.65
1/2	100	1719	\$.75
3/4	100	2719	.80

15 Amperes, 125 Volts or 10 Amperes, 250 Volts	
Std. Pkg.	No.
100	1709
100	2709

20 Amperes, 250 Volts	
Std. Pkg.	No.
100	1719
100	2719



Lamp Receptacles

660 Watts
600 Volts



Composition, With Groove	
Size In.	Std. Pkg.
1/2	100
3/4	100
1	50
1/2	100
3/4	100
1	50

With Shadeholder Groove	
No.	Each
1726	\$.35
2726	.40
3726	.60

Porcelain, With Groove	
No.	Each
1706	\$.30
2706	.35
3706	.40

Without Shadeholder Groove

No.	Each
1727	\$.35
2727	.40
3727	.60

No.	Each
1707	\$.25
2707	.30



Cord Rosettes

660 Watts, 250 Volts



Composition	
Size In.	Std. Pkg.
1/2	100
3/4	100
1	50

No.	Each
1720	\$.60
2720	.65
3720	.90

Porcelain	
No.	Each
1700	\$.30
2700	.35
3799	.40

†Take Hubbell No. 5567 polarized plug. For parallel blade polarity plugs, use Nos. 1705, 1715, 1725, 2705, 2715, 2725, 3705, 3715, and 3725 receptacles.

Prices for receptacles listed above do not include attachment plugs.

If specified on the order, lamp receptacle with lamp grip will be furnished at an advance of 10 cents in the list price.

Covers for Obround Series Condulets

Schedule CR

Take P & S-Despard Wiring Devices

The P & S-Despard wiring devices include single-pole, double-pole, 3-way, and 4-way switches; convenience and radio outlets; and pilot or night lights.

A mounting bridge is required to install the P & S-Despard wiring devices and is furnished with each cover listed below.

Made of aluminum alloy.



Size Inches
1/2
3/4

Without Guard

Std. Pkg.	No.	Each
50	1755	\$.20
25	2755	.30



Size Inches
1/2

With Guard

Std. Pkg.	No.	Each
50	1785	\$.20

Type LBD Condulets

Schedule CR

For use when it is necessary to make a 90° bend in the conduit system.

An ample cover opening is arranged at an angle with the center line of the body to make it possible for conductors to be pulled straight through either hub.

Covers are domed to provide extra space inside the Condulets for the bend in the enclosed conductors. Covers are fastened by machine screws threading into tapped lugs on the bodies.

Furnished with blank, cast Feraloy cover.

Cadmium-galvanized is the standard finish.



Size In.	Std. Pkg.	No.	Each
1/2	50	LBD1100	\$.65
3/4	25	LBD2200	.80
1	25	LBD3300	1.20



Size In.	Std. Pkg.	No.	Each
1 1/4	10	LBD4400	3.25
1 1/2	10	LBD5500	5.75
2	5	LBD6600	6.25



Size In.	Std. Pkg.	No.	Each
2 1/2	5	LBD7700	11.75
3	5	LBD8800	14.25
3 1/2	5	LBD9900	23.25



Size In.	Std. Pkg.	No.	Each
4	5	LBD10900	26.00
4 1/2	1	LBD011	35.00
5	1	LBD012	40.00
6	1	LBD014	75.00

Gaskets for Obround Series Condulets

Schedule CR

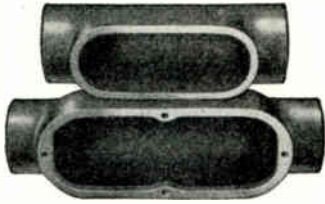


For use between Condulets, and metal covers or Obround adapters.

Size Inches	Std. Pkg.	No.			Each
		Rubber	Cork	Vellumoid	
1/2	200	Gask 571	Gask 671	Gask 771	\$.10
3/4	100	Gask 572	Gask 672	Gask 772	.10
1	50	Gask 573	Gask 673	Gask 773	.15
1 1/4	25	Gask 574	Gask 674	Gask 774	.20
1 1/2	25	Gask 575	Gask 675	Gask 775	.20
2	25	Gask 576	Gask 676	Gask 776	.25
2 1/2 or 3	25	Gask 578	Gask 678	Gask 778	.40
3 1/2 or 4	25	Gask 579	Gask 679	Gask 779	.50

Prices for gaskets of the same number in quantities of 500 or more, upon application.

Form 8 Series Condulets
General Information



Relative Sizes of 2-Inch Type C, Forms 7 and 8 Condulets

Form 8 series Condulets are for use where sizes of conductors, number of splices or tapping and pulling requirements necessitate more room than provided in the Oround series.

Form 8 series wiring chambers are wider and longer than in the Form 7 series of comparable sizes. The construction of these Condulets also provides an extra wide surface for a gasket between the Condulet and cover.

Form 8 Series Condulets
Threaded for Thick Wall Conduit
Schedule CR

Cadmium-galvanized is the standard finish.

Type C



Size In.	Std. Pkg.	No.	Each
1/2	100	Use Form 7 Condulets	
3/4	50		
1	20		
1 1/4	20	C48	\$1.05
1 1/2	10	C58	1.40
2	5	C68	2.40
2 1/2	5	C78	5.00
3	5	C88	6.50
3 1/2	5	C98	10.50
4	5	C108	12.00

Type LR



Size In.	Std. Pkg.	No.	Each
1/2	100	Use Form 7 Condulets	
3/4	50		
1	20		
1 1/4	20	LR48	\$1.05
1 1/2	10	LR58	1.40
2	5	LR68	2.40
2 1/2	5	LR78	5.00
3	5	LR888	6.50
3 1/2	5	LR98	10.50
4	5	LR108	12.00

Type E



Size In.	Std. Pkg.	No.	Each
1/2	100	Use Form 7 Condulets	
3/4	50		
1	20		
1 1/4	20	E48	\$0.80
1 1/2	10	E58	1.04
2	5	E68	2.14
2 1/2	5	E78	4.20
3	5	E88	5.00
3 1/2	5	E98	7.00
4	5	E108	9.00

Type T



Size In.	Std. Pkg.	No.	Each
1/2	100	Use Form 7 Condulets	
3/4	50		
1	20		
1 1/4	20	T48	\$1.22
1 1/2	10	T58	1.69
2	5	T68	2.55
2 1/2	5	T78	5.00
3	5	T88	7.50
3 1/2	5	T98	11.00
4	5	T108	13.00

Type LB



Size In.	Std. Pkg.	No.	Each
1/2	100	Use Form 7 Condulets	
3/4	50		
1	20		
1 1/4	20	LB48	\$1.05
1 1/2	10	LB58	1.40
2	5	LB68	2.40
2 1/2	5	LB78	5.00
3	5	LB888	6.50
3 1/2	5	LB98	10.50
4	5	LB108	12.00

Type TB



Size In.	Std. Pkg.	No.	Each
1/2	100	Use Form 7 Condulets	
3/4	50		
1	20		
1 1/4	10	TB48	\$1.22
1 1/2	10	TB58	1.69
2	5	TB68	2.55
2 1/2	5	TB78	5.00
3	5	TB88	7.50
3 1/2	5	TB98	11.00
4	5	TB108	13.00

Form 8 Series Condulets
Threaded for Thick Wall Conduit
Schedule CR

Cadmium-galvanized is the standard finish.

Type LL



Size In.	Std. Pkg.	No.	Each
1/2	100	Use Form 7 Condulets	
3/4	50		
1	20		
1 1/4	20	LL48	\$1.05
1 1/2	10	LL58	1.40
2	5	LL68	2.40
2 1/2	5	LL78	5.00
3	5	LL888	6.50
3 1/2	5	LL98	10.50
4	5	LL108	12.00

Type X



Size In.	Std. Pkg.	No.	Each
1/2	75	Use Form 7 Condulets	
3/4	50		
1	20		
1 1/4	20	X48	\$1.40
1 1/2	10	X58	1.78
2	5	X68	3.50
2 1/2	5	X78	6.00
3	5	X88	10.00
3 1/2	5	X98	13.00
4	5	X108	16.00

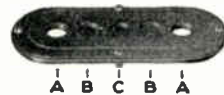
Covers for Form 8 Series Condulets
Schedule CR
Blank

Cadmium-galvanized is the standard finish for cast Fer-alloy and sheet steel.

Size In.	Std. Pkg.	No.	Each
Sheet Steel			
1 1/4 or 1 1/2	10	580	\$0.24
2	5	680	.42
2 1/2 or 3	5	880	.56
3 1/2 or 4	5	980	.60
Cast Fer-alloy			
1 1/4 or 1 1/2	10	580F	\$0.50
2	5	680F	.70
2 1/2 or 3	5	880F	.75
3 1/2 or 4	5	980F	.80
Bakelite			
1 1/4 or 1 1/2	10	5870	\$0.36
2	5	6870	.60
2 1/2 or 3	5	8870	.80
3 1/2 or 4	5	9870	.90

If specified on order, blank bakelite cover will be furnished with special drilling at an advance in list price as follows: Up to 1/2 inch diameter, 5 cents list per hole; over 1/2 inch but less than 1 inch, 15 cents list per hole; 1 inch and over, 20 cents list per hole.

2, 3, 4, or 5-Wire
Bakelite



Size In.	DIAMETER, INCHES			Std. Pkg.	No.	Each
	Holes A	B KNOCKOUTS	C			
1 1/4 or 1 1/2	1 1/16	5/8	1 1/16	10	5875	\$0.31
2	1	1	1	5	6875	.61
2 1/2 or 3	1 1/16	1 1/16	1 1/16	5	8875	.81
3 1/2 or 4	1 1/16	1 1/16	1 1/16	5	9875	.91

Gaskets for Form 8 Series
Schedule CR



For use between Condulets and metal covers.

Size In.	Std. Pkg.	No.			Each
		Rubber	Cork	Vellumoid	
1 1/4 or 1 1/2	25	Gask 805R	Gask 805C	Gask 805V	\$0.2
2	25	Gask 806R	Gask 806C	Gask 806V	.2
2 1/2 or 3	25	Gask 808R	Gask 808C	Gask 808V	.4
3 1/2 or 4	25	Gask 809R	Gask 809C	Gask 809V	.5

Mogul Series Condulets

Schedule CR



Comparison of Size of Type BC 1/4-Inch Mogul Condulet and Type C 1/4-Inch Obround Condulet

Large conductors are difficult to pull around bends in conduit systems. Pull outlets are, therefore, advisable at such locations.

A pull outlet for this purpose must have a long opening to avoid sharp bends and kinks in the conductor.

Mogul Condulets have the required length of opening and yet are so designed as to preserve the symmetry of the conduit system.

Mogul Series Condulets take Mogul covers.

Cadmium-galvanized is the standard finish.

Type BC



Size In.	Std. Pkg.	No.	Each
1	25	BC3	\$1.90
1 1/4	10	BC4	2.15
1 1/2	10	BC5	4.15
2	5	BC6	5.00
2 1/2	5	BC7	7.40
3	5	BC8	9.90
3 1/2	5	BC9	14.85
4	5	BC10	18.00

Type BTB



Size In.	Std. Pkg.	No.	Each
1	25	BTB3	\$2.25
1 1/4	10	BTB4	2.50
1 1/2	10	BTB5	4.65
2	5	BTB6	5.60
2 1/2	5	BTB7	7.80
3	5	BTB8	11.20
3 1/2	5	BTB9	16.85
4	5	BTB10	20.00

Type BLB



Size In.	Std. Pkg.	No.	Each
1	25	BLB3	\$1.90
1 1/4	10	BLB4	2.15
1 1/2	10	BLB5	4.15
2	5	BLB6	5.00
2 1/2	5	BLB7	7.60
3	5	BLB8	10.20
3 1/2	5	BLB9	16.35
4	5	BLB10	19.00

Type BT



Size In.	Std. Pkg.	No.	Each
1	25	BT3	\$2.25
1 1/4	10	BT4	2.50
1 1/2	10	BT5	4.65
2	5	BT6	5.60
2 1/2	5	BT7	7.80
3	5	BT8	11.20
3 1/2	5	BT9	16.85
4	5	BT10	20.00

Covers for Mogul Series Condulets

Schedule CR

Blank



Bakelite

Cast Feraloy

Size In.	Std. Pkg.	Bakelite		Cast Feraloy without Gasket		Cast Feraloy with Gasket	
		No.	Each	No.	Each	No.	Each
or 1 1/4	10	CF534	\$1.25	BG47	\$1.10	BG48	\$1.50
1/2 or 2	5	CF536	3.00	BG67	1.75	BG68	2.40
1 1/2 or 3	5	CF538	4.00	BG87	3.50	BG88	5.00
1 1/2 or 4	5	CF539	6.80	BG97	5.50	BG98	7.00

FS Series Shallow Type Condulets

Schedule CR

Take covers and shallow flush rectangular wiring devices, or plug receptacle housings.

Overall dimensions of body, exclusive of hubs: Length, 4 3/8 inches; width, 2 3/4 inches; depth, 1 1/8 inches.

Cadmium-galvanized is the standard finish.

Type FS



Size In.	Std. Pkg.	Threaded Thick Wall		Threadless Thick Wall		Thin Wall	
		No.	Each	No.	Each	No.	Each
1/2	50	FS1	\$.52	FS191	\$.56	FS141	\$.56
3/4	50	FS2	.60	FS291	.68	FS241	.68
1	25	FS3	.68	FS391	.80	FS341	.80

Type FSA



1/2	50	FSA1	\$.65	FSA191	\$.70	FSA141	\$.70
3/4	50	FSA2	.75	FSA291	.85	FSA241	.85
1	25	FSA3	.85	FSA391	1.00	FSA341	1.00

Type FSC



1/2	50	FSC1	\$.60	FSC191	\$.68	FSC141	\$.68
3/4	50	FSC2	.72	FSC291	.88	FSC241	.88
1	25	FSC3	.88	FSC391	1.13	FSC341	1.13

Type FSS



1/2	50	FSS1	\$.75	FSS191	\$.85	FSS141	\$.85
3/4	50	FSS2	.90	.....	.....	.....	.....
1	25	FSS3	1.10	.....	.....	.....	.....

Type FSCT



1/2	50	FSCT1	\$1.00	FSCT191	\$1.15	FSCT141	\$1.15
3/4	50	FSCT2	1.25	FSCT291	1.55	FSCT241	1.55
1	25	FSCT3	1.45	FSCT391	1.90	FSCT341	1.90

For wiring devices exceeding 1 5/8 inches in depth under the fastening ears, use Condulets of the FD series.

Condulets listed above can be furnished with flat face (4 1/2 x 2 1/8 x 2 1/8 inches) to take standard wall plates at the same list prices; add suffix "S24" to number.

FS Series Shallow Type Condulets

Schedule CR

2-Gang Tandem

Threaded for Thick Wall Conduit

Take covers and shallow flush rectangular wiring devices, or plug receptacle housings.

Overall dimensions of body, exclusive of hubs: Length, 9 $\frac{1}{2}$ inches; width, 2 $\frac{3}{4}$ inches; depth, 1 $\frac{1}{2}$ inches.

Cadmium-galvanized is the standard finish.

Type FS



Type FSC



Threaded Thick Wall			
Size In.	Std. Pkg.	No.	Each
1/2	25	FS17	\$1.65
3/4	25	FS27	1.75
1	10	FS37	1.85

Threaded Thick Wall			
Size In.	Std. Pkg.	No.	Each
1/2	25	FSC17	\$1.75
3/4	25	FSC27	1.85
1	10	FSC37	1.95

FD Series Deep Type Condulets

Schedule CR

Take covers and deep or shallow flush rectangular wiring devices, or plug receptacle housings.

Overall dimensions of body, exclusive of hubs: Length, 4 $\frac{1}{2}$ inches; width, 2 $\frac{3}{4}$ inches; depth, 2 $\frac{3}{4}$ inches.

Cadmium-galvanized is the standard finish.

Type FD



Size In.	Std. Pkg.	Threaded Thick Wall		Thick Wall		Threadless Thin Wall	
		No.	Each	No.	Each	No.	Each
1/2	50	FD1	\$.68	FD191	\$.72	FD141	\$.72
3/4	50	FD2	.77	FD291	.86	FD241	.86
1	25	FD3	.90	FD391	1.04	FD341	1.04

Type FDA



1/2	50	FDA1	\$.75	FDA191	\$.80	FDA141	\$.80
3/4	50	FDA2	.85	FDA291	.95	FDA241	.95
1	25	FDA3	1.00	FDA391	1.15	FDA341	1.15

Type FDC



1/2	50	FDC1	\$.77	FDC191	\$.86	FDC141	\$.86
3/4	50	FDC2	.95	FDC291	1.13	FDC241	1.13
1	25	FDC3	1.13	FDC391	1.40	FDC341	1.40

Condulet Covers

Schedule CR

For Condulets of the FS and FD Series, and FS Series 2-Gang Tandem

Cadmium-galvanized is the standard finish.

For Double Push Button, Double Push Button Momentary Contact, and Double Push Lock Switches



Cat. No.	Sheet Steel		Std. Pkg.
	Each	Style	
DS8	\$.15	Surface	50
DSS8	.15	Flush	50



Cast Feraloy—Guarded		Std. Pkg.	
Each	Style		
DS8g	\$.35	Surface	50
DS8g	.35	Flush	50

For G-E, Arrow-Hart & Hegeman, Bryant, and Hubbell Tumbler Flush Switches with Square Handles



Sheet Steel		Std. Pkg.	
Each	Style		
DS32	\$.15	Surface	50
DSS32	.15	Flush	50



Cast Feraloy—Guarded		Std. Pkg.	
Each	Style		
DS32g	\$.35	Surface	50
DS32g	.35	Flush	50

For Round Flush Receptacles



Sheet Steel—Spring Hinge Lid		Std. Pkg.	
Each	Style		
DS10	\$.60	Surface	50
DSS10	.60	Flush	50



Cast Feraloy—With Spring Door		Std. Pkg.	
Each	Style		
DS10g	\$1.25	Surface	50
DS10g	1.25	Flush	50



Sheet Steel		Std. Pkg.	
Each	Style		
DS21	\$.15	Surface	50
DSS21	.15	Flush	50

For Standard Duplex Flush Receptacles



Sheet Steel		Std. Pkg.	
Each	Style		
DS23	\$.15	Surface	50
DSS23	.15	Flush	50

For Bryant Dugle, G-E Twin, Arrow-H. & H. Tumbler, and Hubbell Duplex Tumbler Switches



Sheet Steel		Std. Pkg.	
Each	Style		
DS63	\$.15	Surface	50
DSS63	.15	Flush	50

For Bryant Trigle, G-E Triple, Arrow-H. & H. Tumbler, and Hubbell Triplex Tumbler Switches



Sheet Steel		Std. Pkg.	
Each	Style		
DS65	\$.15	Surface	50
DSS65	.15	Flush	50

For P & S-Despard, Bryant IL, Hubbell, Arrow-H. & H. TS, and G-E TS Wiring Devices



With 1 Opening—Sheet Steel		Std. Pkg.	
Each	Style		
DS71	\$.25	Surface	50
DSS71	.25	Flush	50



With 2 Openings—Sheet Steel		Std. Pkg.	
Each	Style		
DS72	\$.25	Surface	50
DSS72	.25	Flush	50



With 3 Openings—Sheet Steel		Std. Pkg.	
Each	Style		
DS73	\$.25	Surface	50
DSS73	.25	Flush	50

Condulet Covers

Schedule CR

For Condulets of the FS and FD Series, and FS Series 2-Gang Tandem

Cadmium-galvanized is the standard finish.

For 30-Ampere Flush Plug Receptacles

Sheet Steel



Diameter cover opening, 1 5/8 inches.

No.	Each	Style	Std. Pkg.
DS35	\$.15	Surface	50
DSS35	.15	Flush	50

With Female Brass Nipple



No.	Each	Style	Std. Pkg.
DS18	\$.40	Surface	50
DS116	\$.45	Surface	50

Blank Covers

Sheet Steel



No.	Each	Style	Std. Pkg.
DS100	\$.10	Surface	50
DSS100	.10	Flush	50

Cast Feraloy—With Gasket



No.	Each	Style	Std. Pkg.
DS100g	\$.25	Surface	50
DS100g	.25	Flush	50

For Pilot Lamp Flush Receptacles



Sheet Steel



Cast Feraloy

Furnished with clear or colored jewels.

Style	Std. Pkg.	Sheet Steel				Cast Feraloy	
		Surface		Flush		Surface or Flush—Watertight	
		No.	Each	No.	Each	No.	Each
Ruby	50	DS24	\$1.00	DSS24	\$1.00	DS24g	\$1.25
Olive Green	50	DS34	1.00	DSS34	1.00	DS34g	1.25
Emerald	50	DS41	1.00	DSS41	1.00	DS41g	1.25
Canary	50	DS42	1.00	DSS42	1.00	DS42g	1.25
Amethyst	50	DS43	1.00	DSS43	1.00	DS43g	1.25
Amber	50	DS44	1.00	DSS44	1.00	DS44g	1.25
Topaz	50	DS45	1.00	DSS45	1.00	DS45g	1.25
Opal	50	DS46	1.00	DSS46	1.00	DS46g	1.25
Frosted	50	DS47	1.00	DSS47	1.00	DS47g	1.25
Clear	50	DS48	1.00	DSS48	1.00	DS48g	1.25
Blue	50	DS49	1.00	DSS49	1.00	DS49g	1.25

Vaportight Covers with Switch Operating Mechanism

Surface or flush. Furnished with gasket.

For External Operation of Tumbler Switches

For Standard Operation On or Off



No.	Each	Material	Std. Pkg.
DS128	\$1.75	Cast Feraloy	25

For Momentary Contact Operation Normally On



No.	Each	Material	Std. Pkg.
DS126	\$1.75	Cast Feraloy	25
DS127	\$1.75	Cast Feraloy	25

Vaportight Covers

Schedule CR

For Condulets of the FS and FD Series, and FS Series 2-Gang Tandem

With Switch Operating Mechanism

Surface or flush. Furnished with gasket. Cadmium-galvanized is the standard finish.

*For External Operation of Double Push Button Switches

Furnished with Handle

†Furnished with Key



No.	Each	Material	Std. Pkg.	No.	Each	Material	Std. Pkg.
DS108	\$1.75	Feraloy	25	DS106	\$1.75	Feraloy	25

*For Momentary Contact Switches

Furnished with Handle

†Furnished with Key



DS107	\$1.75	Feraloy	25	DS106	\$1.75	Feraloy	25
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*For Standard Tumbler Switches

†For Standard Operation On or Off



No.	Each	Material	Std. Pkg.
DS181	\$1.75	Feraloy	25

†For Standard Operation with Key

DS182	\$1.75	Feraloy	25
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For Momentary Contact Switches

DS183	\$1.75	Feraloy	25
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*Where the temperature exceeds 125° F., switches furnished with heat-resisting buttons should be used.

†Extra keys for vaportight covers, Nos. DS106 and DS182, No. 1 Key—list price, 20 cents.

‡Can be furnished with left hand operation, if specified.

Type DS Plug Receptacle Housings

Schedule CR

For Condulets of the FS and FD Series, and FS Series 2-Gang Tandem

15 Amperes, 125 Volts or 10 Amperes, 250 Volts

Surface or flush. Housings are furnished with receptacles for standard attachment plug caps.

Cadmium-galvanized is the standard finish.

With Spring Door

Without Threaded Cap



2-Wire, 2-Pole



2-Wire, 2-Pole

No.	Each	Material	Std. Pkg.	No.	Each	Material	Std. Pkg.
DS83	\$3.20	Feraloy	25	DS87	\$1.75	Feraloy	25
DS84	\$3.90	Feraloy	25	DS88	\$2.70	Feraloy	25
DS91	\$3.90	Feraloy	25	DS93	\$2.70	Feraloy	25

With Threaded Cap



Furnished with gasket. *Third pole grounded.

DS81	\$2.50	Feraloy	25
DS82	\$3.45	Feraloy	25
DS90	\$3.45	Feraloy	25

Type DS Plug Receptacle Housings

Schedule CR

For Condulets of the FS and FD Series, and FS Series 2-Gang Tandem

20 Amperes, 250 Volts

With Threaded Cap



Surface or flush. Furnished with gasket.

*Housings are furnished with receptacle for standard attachment plug caps.

Cadmium-galvanized is the standard finish.

†2-Wire, 3-Pole

No.	Each	Material	Furnished with Hubbell Receptacle No.	Std. Pkg.
DS135	\$4.00	Feraloy	No. 6810G	25

3-Wire, 3-Pole

DS139	\$4.00	Feraloy	No. 6810	25
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Twist Lock—†2-Wire, 3-Pole

DS138	\$4.00	Feraloy	No. 7310G	25
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Twist Lock—3-Wire, 3-Pole

DS137	\$4.00	Feraloy	No. 7310	25
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*DS137 and DS138 are for use with Hubbell No. 9965 rubber body plug only.

†Third pole grounded.

Type BRD Plug Receptacle Housings

Schedule CR

For Condulets of the FS and FD Series, and FS Series 2-Gang Tandem

*30 Amperes, 250 Volts A.C.

Can be used on Condulets mounted either on the surface of or flush with the wall. Take Type BP plugs. Two-pole housings are furnished with 30-ampere, 250-volt receptacle BR302; 3-pole housings with 30-ampere, 250-volt receptacle BR303; 4-pole with 30-ampere, 250-volt receptacle BR304.

Cadmium-galvanized is the standard finish.

With Spring Door



Without Spring Door

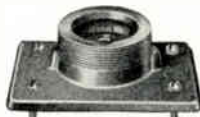


No.	Each	Material	Std. Pkg.	No.	Each	Material	Std. Pkg.
BRD6302	\$4.20	Feraloy	10	BRD302	\$2.60	Feraloy	10
BRD6303	\$4.90	Feraloy	10	BRD303	\$3.10	Feraloy	10
BRD6304	\$5.60	Feraloy	10	BRD304	\$3.60	Feraloy	10

With Threaded Cap



Without Threaded Cap



Furnished with gaskets.

No.	Each	Material	Std. Pkg.	No.	Each	Material	Std. Pkg.
BRD8302	\$3.75	Feraloy	10	BRD7302	\$2.80	Feraloy	10
BRD8303	\$4.70	Feraloy	10	BRD7303	\$3.35	Feraloy	10
BRD8304	\$5.65	Feraloy	10	BRD7304	\$3.90	Feraloy	10

*Can be used on 25-ampere, 125-volt d.c. circuits; or on 30-ampere, 250-volt d.c. circuits if circuit is broken before plug is withdrawn.

FS Series Push Button Switch Station Condulets

Schedule CR

Vaportight and Weatherproof
5 Amperes, 600 Volts A.C.

Furnished with motor control push button switches.

Dimensions over all, exclusive of hubs: Length, 4 1/2 inches; width, 2 3/4 inches; and depth, 4 inches.

Cadmium-galvanized is the standard finish.

With Rocker Type Operating Handles



Type FS



Type FSC

Size Hub, In.	No.	Each	Type FS	Normal Positions	Plate Marking
1/2	FS1810F	\$5.15	1 Button (Open)	Start	Start
3/4	FS2810F	5.25	1 Button (Open)	Start	Start
1/2	FS1810G	5.15	1 Button (Closed)	Stop	Stop
3/4	FS2810G	5.25	1 Button (Closed)	Stop	Stop
1/2	FS1810	6.15	2 Buttons (1 Open, 1 Closed)	Start	Start
3/4	FS2810	6.25	2 Buttons (1 Open, 1 Closed)	Stop	Stop
1/2	FS1810B	6.15	2 Buttons (Both Open)	Start	Start
3/4	FS2810B	6.25	2 Buttons (Both Open)	Start	Start
1/2	FS1810D	6.15	2 Buttons (Both Closed)	Stop	Stop
3/4	FS2810D	6.25	2 Buttons (Both Closed)	Stop	Stop

Type FSC

1/2	FSC1810F	\$5.25	1 Button (Open)	Start	Start
3/4	FSC2810F	5.40	1 Button (Open)	Start	Start
1/2	FSC1810G	5.25	1 Button (Closed)	Stop	Stop
3/4	FSC2810G	5.40	1 Button (Closed)	Stop	Stop
1/2	FSC1810	6.25	2 Buttons (1 Open, 1 Closed)	Start	Start
3/4	FSC2810	6.40	2 Buttons (1 Open, 1 Closed)	Stop	Stop
1/2	FSC1810B	6.25	2 Buttons (Both Open)	Start	Start
3/4	FSC2810B	6.40	2 Buttons (Both Open)	Start	Start
1/2	FSC1810D	6.25	2 Buttons (Both Closed)	Stop	Stop
3/4	FSC2810D	6.40	2 Buttons (Both Closed)	Stop	Stop

With Front Operated Push Buttons



Type FS



Type FSC

Size Hub, In.	No.	Each	Type FS	Normal Positions	Plate Marking
1/2	FS1910F	\$5.15	1 Button (Open)	Start	Start
3/4	FS2910F	5.25	1 Button (Open)	Start	Start
1/2	FS1910G	5.15	1 Button (Closed)	Stop	Stop
3/4	FS2910G	5.25	1 Button (Closed)	Stop	Stop
1/2	FS1910	6.15	2 Buttons (1 Open, 1 Closed)	Start	Start
3/4	FS2910	6.25	2 Buttons (1 Open, 1 Closed)	Stop	Stop
1/2	FS1910B	6.15	2 Buttons (Both Open)	Start	Start
3/4	FS2910B	6.25	2 Buttons (Both Open)	Start	Start
1/2	FS1910D	6.15	2 Buttons (Both Closed)	Stop	Stop
3/4	FS2910D	6.25	2 Buttons (Both Closed)	Stop	Stop

Type FSC

1/2	FSC1910F	\$5.25	1 Button (Open)	Start	Start
3/4	FSC2910F	5.40	1 Button (Open)	Start	Start
1/2	FSC1910G	5.25	1 Button (Closed)	Stop	Stop
3/4	FSC2910G	5.40	1 Button (Closed)	Stop	Stop
1/2	FSC1910	6.25	2 Buttons (1 Open, 1 Closed)	Start	Start
3/4	FSC2910	6.40	2 Buttons (1 Open, 1 Closed)	Stop	Stop
1/2	FSC1910B	6.25	2 Buttons (Both Open)	Start	Start
3/4	FSC2910B	6.40	2 Buttons (Both Open)	Start	Start
1/2	FSC1910D	6.25	2 Buttons (Both Closed)	Stop	Stop
3/4	FSC2910D	6.40	2 Buttons (Both Closed)	Stop	Stop

Other hub arrangements or hub sizes can be furnished by using any Condulet body of the regular FS Series. Prices upon application.

FS Series 2-Gang Shallow Type Condulets

Schedule CR

Threaded for Thick Wall Conduit

Take covers and shallow flush rectangular wiring devices. Overall dimensions of body, exclusive of hubs: Length, 4 1/2 inches; width, 4 3/8 inches; depth, 1 7/8 inches. Cadmium-galvanized is the standard finish.

Type FS



Type FSC



Threaded Thick Wall			
Size In.	Std. Pkg.	No.	Each
1/2	25	FS12	\$1.20
3/4	25	FS22	1.30
1	10	FS32	1.40

Threaded Thick Wall			
Size In.	Std. Pkg.	No.	Each
1/2	25	FSC 12	\$1.30
3/4	25	FSC222	1.40
1	10	FSC 32	1.55

2-Gang Condulet Covers

Schedule CR

For Condulets of the FS and FD Series, 2-Gang

Cadmium-galvanized is the standard finish. For Double Push Button, Double Push Button Momentary Contact, and Double Push Lock Switches

Image	No.	Each	Sheet Steel		Std. Pkg.
			Style		
	S82	\$.30	Surface		25
	SS82	.30	Flush		25
	S82g	\$.65	Surface		25
	SS82g	.65	Flush		25

For Arrow-H. & H., Bryant, G-E, and Hubbell Tumbler Flush Switches with Square Handles

Image	No.	Each	Sheet Steel		Std. Pkg.
			Style		
	S322	\$.30	Surface		25
	SS322	.30	Flush		25
	S322g	\$.65	Surface		25
	SS322g	.65	Flush		25

For Arrow-H. & H., Bryant, G-E, and Hubbell Tumbler Flush Switches with Square Handles; and for Standard Duplex Flush Receptacles

Image	No.	Each	Sheet Steel		Std. Pkg.
			Style		
	S32232	\$.50	Surface		25
	SS32232	.50	Flush		25

For Arrow-H. & H., Bryant, G-E, and Hubbell Tumbler Flush Switches with Square Handles; and for Round Plug Flush Receptacles

Image	No.	Each	Sheet Steel		Std. Pkg.
			Style		
	S32212	\$.50	Surface		25
	SS32212	.50	Flush		25

For Arrow-H. & H., Bryant, G-E, and Hubbell Tumbler Flush Switches with Square Handles; and for Pilot Lamp Flush Receptacles

Image	Sheet Steel				
	Furnished with ruby jewel.				
	No.	Each	Style		Std. Pkg.
	S32242	\$1.20	Surface		25
	SS32242	1.20	Flush		25

For Round Flush Receptacles

Image	No.	Each	Sheet Steel		Std. Pkg.
			Style		
	S212	\$.30	Surface		25
	SS212	.30	Flush		25

For Standard Duplex Flush Receptacles

Image	No.	Each	Sheet Steel		Std. Pkg.
			Style		
	S232	\$.30	Surface		25
	SS232	.30	Flush		25

2-Gang Condulet Covers

Schedule CR

For Condulets of the FS and FD Series, 2-Gang Cadmium-galvanized is the standard finish.



For Round Flush Receptacles and Standard Duplex Flush Receptacles

No.	Each	Sheet Steel		Std. Pkg.
		Material		
S21232	\$.50	Surface		25
SS21232	.50	Flush		25

Blank Covers

No.	Each	Sheet Steel		Std. Pkg.
		Material		
S1002	\$.20	Surface		25
SS1002	.20	Flush		25

Cast Feraloy—With Gasket

S1002g	\$.50	Surface		25
S1002g	.50	Flush		25



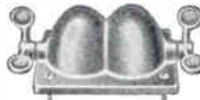
2-Gang Vaportight Covers

Schedule CR

With Switch Operating Mechanism

For Condulets of the FS and FD Series, 2-Gang Surface or flush. Furnished with gasket. Cadmium-galvanized is the standard finish.

*For External Operation of Double Push Button Switches



No.	Each	Furnished with Handle		Std. Pkg.
		Material		
DS1082	\$3.00	Feraloy		25

*For External Operation of Tumbler Switches



No.	Each	For Standard Operation On or Off		Std. Pkg.
		Material		
DS1282	\$3.00	Feraloy		25

*For Standard Tumbler Switches



No.	Each	For Standard Operation On or Off		Std. Pkg.
		Material		
DS1812	\$3.00	Feraloy		25

†For Standard Operation with Key



DS1822	\$3.00	Feraloy		25
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For Momentary Contact Switches



DS1832	\$3.00	Feraloy		25
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*Where the temperature exceeds 125°F., switches furnished with heat-resisting buttons should be used.

†Extra keys for No. DS1822 vaportight covers, No. 1 Key—list price, 20 cents.

FS Series 3-Gang Shallow Type Condulets

Schedule CR

Threaded for Thick Wall Conduit

Take covers and shallow flush rectangular wiring devices. Overall dimensions of body, exclusive of hubs: Length, 4 1/2 inches; width, 6 1/2 inches; depth, 1 7/8 inches. Cadmium-galvanized is the standard finish.

Type FS



Type FSC



Threaded Thick Wall				Threaded Thin Wall			
Size In.	Std. Pkg.	No.	Each	Size In.	Std. Pkg.	No.	Each
3/4	25	FS23	\$1.80	3/4	25	FSC23	\$1.90
1	10	FS33	1.95	1	10	FSC333	2.05
				1 1/4	10	FSC43	2.20

Condulets listed above can be furnished with flat face (4 1/2 x 6 1/2 x 2 1/8 inches) to take standard wall plates at the same list prices; add suffix "S24" to number.

3-Gang Condulet Covers

Schedule CR

For Condulets of the FS and FD Series, 3-Gang Cadmium-galvanized is the standard finish.

For Double Push Button, Double Push Button Momentary Contact, and Double Push Lock Switches

Sheet Steel				
No.	Each	Style	Std. Pkg.	
S83	\$.45	Surface	25	
SS83	.45	Flush	25	

For G-E, Arrow-H. & H., Bryant and Hubbell Tumbler Flush Switches with Square Handles

Sheet Steel				
No.	Each	Style	Std. Pkg.	
S323	\$.45	Surface	25	
SS323	.45	Flush	25	
Blank Covers				
Sheet Steel				
No.	Each	Style	Std. Pkg.	
S1003	\$.40	Surface	25	
SS1003	.40	Flush	25	

3-Gang Vaportight Covers

Schedule CR

With Switch Operating Mechanism

For Condulets of the FS and FD Series, 3-Gang

*For External Operation of Tumbler Switches and for Standard Operation On or Off

Surface or flush. Furnished with gasket. Cadmium-galvanized is the standard finish.



No.	Each	Material	Std. Pkg.
DS1283	\$4.75	Feraloy	25

*Where the temperature exceed 125°F., switches furnished with heat-resisting buttons should be used.

G-H Series Condulets

Schedule CR

With Adjustable Bar

Threaded for Thick Wall Conduit

Take covers or round base wiring devices.

Cadmium-galvanized is the standard finish.

Limiting Dimensions of Round Base Wiring Devices For Use with G-H Series Condulets with Adjustable Bar

	Form 5	Form 10
Diameter of Base.....inches	2 to 2 5/8	2 3/8 to 3
Fastening Screw Spacing Center to Center.....inches	5/8 to 1 1/8	5/8 to 1 1/8

Type G



Form 5			
Size In.	Std. Pkg.	No.	Each
1/2	100	G151	\$.55
3/4	50	G252	.65
1	25	G353	.90
Form 10			
1/2	50	G1101	\$.55
3/4	25	G2102	.65
1	25	G3103	.90

Type GL



Form 5			
Size In.	Std. Pkg.	No.	Each
1/2	100	GL151	\$.60
3/4	50	GL252	.70
1	25	GL353	.95
Form 10			
1/2	50	GL1101	\$.60
3/4	25	GL2102	.70
1	25	GL3103	.95

Type GT



Form 5			
Size In.	Std. Pkg.	No.	Each
1/2	100	GT151	\$.75
3/4	50	GT252	.85
1	25	GT353	1.10
Form 10			
1/2	50	GT1101	\$.75
3/4	25	GT2102	.85
1	25	GT3103	1.10

Type H



Form 5			
Size In.	Std. Pkg.	No.	Each
1/2	100	H15	\$.45
3/4	50	H25	.55
1	25	H35	.80
Form 10			
1/2	50	H110	\$.45
3/4	25	H210	.55
1	25	H310	.80

Forms 5 and 10 indicate sizes of Condulets which take covers and wiring devices correspondingly classified.

G-H Series Condulets

Schedule CR

Without Adjustable Bar—Threaded for Thick Wall Conduit Take covers or wiring devices. Drilled and tapped for 4 screws. Fastening screws furnished. Cadmium-galvanized.

Type G



Form 5				
Size In.	Std. Pkg.	No.	Each	
1/2	100	G157	\$.40	
3/4	50	G257	.50	
1	25	G357	.75	
Form 10				
1/2	50	G117	\$.40	
3/4	25	G217	.50	
1	25	G317	.75	

Type GT



Form 5				
Size In.	Std. Pkg.	No.	Each	
1/2	100	GT157	\$.60	
3/4	50	GT257	.70	
1	25	GT357	.95	
Form 10				
1/2	50	GT117	\$.60	
3/4	25	GT217	.70	
1	25	GT317	.95	



Type H

Forms 5 and 10 indicate sizes of Condulets which take covers and wiring devices correspondingly classified.

Form 5				
Size In.	Std. Pkg.	No.	Each	
1/2	100	H157	\$.30	
3/4	50	H257	.40	
1	25	H357	.65	
Form 10				
1/2	50	H117	\$.30	
3/4	25	H217	.40	
1	25	H317	.65	

GS Series Condulets

Schedule CR

With Fastening Strap for Wiring Devices

Take covers, fixtures, round base snap switches, vaportight fixtures, plug receptacle housings, or connection blocks. Cadmium-galvanized is the standard finish.

Type GS



Form 5				
Size In.	Std. Pkg.	No.	Each	
1/2	25	GS15	\$.90	
3/4	25	GS25	1.05	
1	10	GS35	1.25	
Form 10				
1/2	25	GS110	\$.90	
3/4	25	GS210	1.05	
1	10	GS310	1.25	
Form 20				
1/2	25	GS120	\$1.50	
3/4	25	GS220	1.65	
1	10	GS320	1.85	

Type GSC



Form 5			
Size In.	Std. Pkg.	No.	Each
1/2	25	GSC15	\$1.00
3/4	25	GSC25	1.15
1	10	GSC35	1.35
Form 10			
1/2	25	GSC110	\$1.00
3/4	25	GSC210	1.15
1	10	GSC310	1.35
Form 20			
1/2	25	GSC120	\$1.60
3/4	25	GSC220	1.75
1	10	GSC320	1.95

Forms 5, 10 and 20 indicate sizes of Condulets which take covers and wiring devices correspondingly classified.

GS Series Condulets with lugs, 15 cents extra.

Type GST



Form 5				
Size In.	Std. Pkg.	No.	Each	
1/2	25	GST15	\$1.20	
3/4	25	GST25	1.35	
1	10	GST35	1.55	
Form 10				
1/2	25	GST110	\$1.20	
3/4	25	GST210	1.35	
1	10	GST310	1.55	
Form 20				
1/2	25	GST120	\$1.80	
3/4	25	GST220	2.00	
1	10	GST320	2.30	

Type GSX



Form 5				
Size In.	Std. Pkg.	No.	Each	
1/2	25	GSX15	\$1.35	
3/4	25	GSX25	1.50	
1	10	GSX35	1.80	
Form 10				
1/2	25	GSX110	\$1.35	
3/4	25	GSX210	1.50	
1	10	GSX310	1.80	
Form 20				
1/2	25	GSX120	\$1.95	
3/4	25	GSX220	2.20	
1	10	GSX320	2.70	

Wiring Devices for G-H Series Condulets without Adjustable Bar

Schedule CR

Lamp Receptacles without Connection Block

Porcelain—One-Piece
600 Watts, 600 Volts

No.	With Shade Holder Groove		Without Shade Holder Groove		Std. Pkg.	Form
	Each	Each	Each	Each		
H556	\$.25	.....	.....	.....	100	5
H557	.....	\$.25	.....	.....	100	5

Covers for GS Series Condulets

Schedule CR

Cadmium-galvanized is the standard finish.

Vaportight Switch Covers

Furnished with gasket.

No.	Each	Std. Pkg.	Form
GS58	\$1.30	25	5
GS108	1.30	25	10
GS208	2.00	25	20

Blank Covers

Vaportight Only When Used with Flat Gaskets

No.	Each	Std. Pkg.	Form
GS50a	\$.40	25	5
GS100a	.50	25	10
GS200a	.75	25	20

Forms 5, 10, and 20 indicate sizes of Condulets which take covers and wiring devices correspondingly classified.

Accessories for GS Series Condulets

Schedule CR

Keyless Receptacles

Composition
660 Watts, 600 Volts

Consists of receptacle and gaskets.

No.	Without Lamp Grip Each	With Lamp Grip Each	Std. Pkg.	Form
GS59	\$.50	.....	25	5
GS569	.....	\$.60	25	5

Midget Guard Fixtures

100 Watts

Consists of No. GS111 holder, guard, receptacle with lamp grip No. GS1621M1 and gaskets.

Cadmium-galvanized is the standard finish.

No.	Comp. Each	Length Guard In.	Std. Pkg.	Form
GS1631	\$3.40	5 1/4	25	10

Connection Blocks

Composition
5-Wire
20 Amperes, 125 Volts

No.	Each	Std. Pkg.	Form
CF210	\$.65	25	10 and 20

Forms 5, 10, and 20 indicate sizes of Condulets which take covers and wiring devices correspondingly classified.

If specified, lamp receptacle with lamp grip will be furnished at advance of 10 cents in list price.

SE Series Condulets

Schedule CR

Take covers or 3/4-inch outlet box round base wiring devices.

Maximum diameter of wiring device is 3/8 inches. Screw holes are spaced 2 3/4 inches apart, center to center. Fastening screw holes are tapped in lugs 1/4 inch thick, providing a firm and rigid mounting for wiring device.

Cadmium-galvanized is the standard finish.

Type SE



Type SEC



Size In.	Std. Pkg.	No.	Each	Size In.	Std. Pkg.	No.	Each
1/2	50	SE1	\$.80	1/2	50	SEC1	\$.95
3/4	25	SE2	.90	3/4	25	SEC2	1.05
1	25	SE3	1.10	1	25	SEC3	1.25

SEH Series Condulets

Schedule CR

Take covers or 4-inch outlet box round base wiring devices.

Maximum diameter of wiring device is 4 inches. Screw holes are spaced 3 1/2 inches apart, center to center. The fastening screw holes are tapped in lugs 3/16 inch thick, providing a firm and rigid mounting for wiring device.

Cadmium-galvanized is the standard finish.

Type SEH



Type SEHC



Size In.	Std. Pkg.	No.	Each	Size In.	Std. Pkg.	No.	Each
1/2	50	SEH1	\$.80	1/2	50	SEHC1	\$.95
3/4	25	SEH2	.90	3/4	25	SEHC2	1.05
1	25	SEH3	1.10	1	25	SEHC3	1.25

W Series Condulets

Schedule CR

Take covers and attachment plug receptacles.

For installations in shops, over work benches, for extension cords, or low amperage heating devices such as soldering irons and glue pots.

Hubs are cast solid with body and have an integral bushing and tapered thread.

Cadmium-galvanized is the standard finish.

Limiting Dimensions of Attachment Plug Receptacles

Size Condulet.....	inches	1/2	3/4	1
Height of Pillars and Receptacle.....	inches	0	1/4	1/8

Type W



Type WC



Size In.	Std. Pkg.	No.	Each	Size In.	Std. Pkg.	No.	Each
1/2	50	W1	\$.50	1/2	50	WC1	\$.60
3/4	50	W2	.60	3/4	50	WC2	.65
1	25	W3	.70	1	25	WC3	.80

Covers for W Series Condulets

Schedule CR
Sheet Steel

Blank sheet steel covers are provided for Condulets of this series, permitting them to be used as pull or junction boxes.

Cadmium-galvanized is the standard finish.

Covers for Attachment Plug Receptacles

No.	Each	Std. Pkg.
0	\$.10	50
0b	\$.10	50

Blank Covers

SK Series Condulets

Schedule CR

For Concealed Installations in Concrete

Take covers, vaportight fixtures, or 3/4-inch outlet box round base wiring devices with 2 3/4-inch screw centers.

A gasket is made for use with blank covers, so that when used with Series SK Condulets, an excellent watertight junction is provided.

Cadmium-galvanized is the standard finish.

Type SK



Size In.	Std. Pkg.	2-Inch Depth		3-Inch Depth	
		No.	Each	No.	Each
1/2	50	SK12	\$1.00	SK13	\$1.15
3/4	25	SK22	1.10	SK23	1.25
1	10	SK32	1.20	SK33	1.35

Type SKC



1/2	50	SKC12	\$1.10	SKC13	\$1.25
3/4	25	SKC22	1.20	SKC23	1.35
1	10	SKC32	1.30	SKC33	1.45

Type SKL



1/2	50	SKL12	\$1.10	SKL13	\$1.25
3/4	25	SKL22	1.20	SKL23	1.35
1	10	SKL32	1.30	SKL33	1.45

Type SKT



1/2	50	SKT12	\$1.20	SKT13	\$1.35
3/4	25	SKT22	1.30	SKT23	1.45
1	10	SKT32	1.40	SKT33	1.55

Type SKX



1/2	50	SKX12	\$1.30	SKX13	\$1.45
3/4	25	SKX22	1.40	SKX23	1.55
1	10	SKX32	1.50	SKX33	1.65

Covers and Gaskets

Schedule CR

For SK Series Condulets

Cadmium-galvanized is the standard finish.

Blank Covers



No.	Each	Material	Size Hub In.	Std. Pkg.
SK809	\$.30	Cast Feraloy	...	50

Hub Covers



SK83	\$.65	Cast Feraloy	3/8	50
SK84	.65	Cast Feraloy	1/2	50
SK86	.75	Cast Feraloy	3/4	50

Gaskets



For use between Condulets and wiring devices or covers.				
Gask208	\$.25	.....	..	50

Type ARB Vaportight Industrial Lighting Fixtures

Schedule CR

For SK Series Condulets, or 3/4 or 4-Inch Outlet Boxes

When mounted on SK series Condulets or outlet boxes mounted flush with the wall or ceiling, Type ARB is for use with concealed conduit.

Body of fixture is sufficiently large to cover the uneven line of plaster around edge of Condulet or outlet box, and will cover corners of 4-inch octagonal box.

Guards are made of cast aluminum; Condulets of cast Feraloy.

Cadmium-galvanized is the standard finish.

Clamp Guard Type

Form 100

Furnished with globe V75 and guard V97 and takes 50, 60, 75, or 100-watt lamps.



No.	Each	Style	Std. Pkg.
ARB43	\$4.10	With Globe and Guard...	25
ARB44	1.50	Without Globe and Guard.	25

Form 200

Furnished with Globe V200 and Guard VH99, and takes 150 or 200-watt lamps.

ARB41	\$4.75	With Globe and Guard...	25
ARB42	1.70	Without Globe and Guard.	25

Screw Guard Type

Form 100

Furnished with globe V75 and guard V911, and takes 50, 60, 75, or 100-watt lamps.



ARB31	\$4.10	With Globe and Guard....	25
ARB32	1.50	Without Globe and Guard.	25

Form 200

Furnished with globe V200 and guard V912, and takes 150 or 200-watt lamps.

ARB33	\$4.75	With Globe and Guard...	25
ARB34	1.70	Without Globe and Guard.	25

If specified, lamp receptacle with lamp grip will be furnished at advance of 10 cents in list price.

If specified, pigtail receptacle will be furnished at advance of 45 cents in list price.

P Series Condulets

Schedule CR

Form 6

For use in exposed conduit systems. Take standard canopies and standard canopy insulating rings from 4 to 6-inch diameters.

Take electric lighting fixtures having 4 to 6-inch canopies. Hubs are cast solid with body and have an integral bushing and tapered thread.

Cadmium-galvanized is the standard finish.

Type P



Type PC



Size In.	Std. Pkg.	No.	Each	Size In.	Std. Pkg.	No.	Each
1/2	25	P1	\$1.40	1/2	25	PC1	\$1.50
3/4	25	P2	1.55	3/4	25	PC2	1.65
1	10	P3	1.70	1	10	PC3	1.80

J-K Series Condulets

Schedule CR

Threaded for Thick Wall Conduit

Take wiring devices or blank cover.

Rigid conduit installations exposed to the weather require wiring devices that will prevent rain, ice, sleet, and snow from coming in contact with the current carrying parts. J-K Series Condulets meet all such requirements.

Type J



Type K



Size In.	Std. Pkg.	No.	Each	Size In.	Std. Pkg.	No.	Each
1/2	100	J1	\$.60	1/2	100	K1	\$.50
3/4	50	J2	.75	3/4	50	K2	.65
1	25	J3	1.05	1	25	K3	.95

Condulet Wiring Devices

Schedule CR

For J-K Series Condulets

Weatherproof wiring devices; installed either in or out of doors.

Made of porcelain and furnished with gasket.

Attachment Plug Receptacles

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

2-Pole

With Double T Slots



With IT Slots



No.	Each	Std. Pkg.	No.	Each	Std. Pkg.
CC5	\$.50	100	CC35	\$.50	100

3-Pole



3-Wire

No.	Each	Std. Pkg.	No.	Each	Std. Pkg.
CC13	\$.70	100	CC17	\$.75	100

2-Wire—Extra Pole Grounded

2-Pole Plug Receptacles

20 Amperes, 250 Volts

Polarity



Twist Lock



No.	Each	Std. Pkg.	No.	Each	Std. Pkg.
CC20	\$.65	100	CC16	\$.75	100

Lamp Receptacles

660 Watts, 600 Volts

With Shade Holder Groove



Without Shade Holder Groove



No.	Each	Std. Pkg.	No.	Each	Std. Pkg.
CC227g	\$.45	100	CC227	\$.40	100

Cord Rosettes

660 Watts, 250 Volts

CC332	\$.50	100
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Prices for receptacles listed, do not include attachment plugs.

If specified on the order, lamp receptacles with lamp grip will be furnished at an advance of 10 cents.

Vaportight Industrial Lighting Condulets

Schedule CR

V Series, Screw Guard Type

Guards are made of cast aluminum. Condulets are made of cast Feraloy. Cadmium-galvanized is the standard finish on Condulets.

Form 100

Form 100 is furnished with globe V75 and guard V911, and takes 50, 60, 75 or 100-watt lamps.

Form 200

Form 200 is furnished with globe V200 and guard V912, and takes 150 or 200-watt lamps.

Type V

Form 100

WITH GLOBE AND GUARD

WITHOUT GLOBE AND GUARD

Size In.	Cat. No.	Each	Cat. No.	Each
1/2	V1759	\$4.50	V175	\$1.90
3/4	V2759	4.55	V275	1.95
1	V3759	4.60	V375	2.00

Form 200

1/2	V12009	\$5.40	V1200	\$2.35
3/4	V22009	5.45	V2200	2.40
1	V32009	5.50	V3200	2.45

Type V

Type VA

Form 100

1/2	VA1759	\$4.50	VA175	\$1.90
3/4	VA2759	4.55	VA275	1.95
1	VA3759	4.60	VA375	2.00

Form 200

1/2	VA12009	\$5.40	VA1200	\$2.35
3/4	VA22009	5.45	VA2200	2.40
1	VA32009	5.50	VA3200	2.45

Type VA

Type VC

Form 100

1/2	VC1759	\$4.60	VC175	\$2.00
3/4	VC2759	4.70	VC275	2.10
1	VC3759	4.80	VC375	2.20

Form 200

1/2	VC12009	\$5.50	VC1200	\$2.45
3/4	VC22009	5.60	VC2200	2.55
1	VC32009	5.65	VC3200	2.60

Type VC

Type VDA

Form 100

1/2	VDA1759	\$4.50	VDA175	\$1.90
3/4	VDA2759	4.55	VDA275	1.95
1	VDA3759	4.60	VDA375	2.00

Form 200

1/2	VDA12009	\$5.40	VDA1200	\$2.35
3/4	VDA22009	5.45	VDA2200	2.40
1	VDA32009	5.50	VDA3200	2.45

Type VDA

Forms 100 and 200 indicate sizes of Condulets. Accessories and parts are correspondingly classified.

If specified on the order, lamp receptacle with lamp grip will be furnished at an advance of 10 cents in the list price.

If specified on the order, pigtail receptacle will be furnished at an advance of 45 cents in the list price.

These Condulets can be equipped with externally operated switch at an advance of \$1.00 in the list price.

Vaportight Industrial Lighting Condulets

Schedule CR

V and VH Series, Clamp Guard Type

Guards are made of cast aluminum. Condulets are made of cast Feraloy. Cadmium-galvanized is the standard finish on Condulets.

Form 100

Form 100 is furnished with globe V75 and guard V97, and takes 50, 60, 75 or 100-watt lamps.

Form 200

Form 200 is furnished with globe V200 and guard VH99, and takes 150 or 200-watt lamps.



Types V and VH

Size In.	WITH GLOBE AND GUARD		WITHOUT GLOBE AND GUARD	
	Cat. No.	Each	Cat. No.	Each
1/2	V189	\$4.50	V1	\$1.90
3/4	V289	4.55	V2	1.95
1	V389	4.60	V3	2.00

Size In.	Type VH Form 200		Cat. No.	Each
	Cat. No.	Each		
1/2	VH189	\$5.40	VH1	\$2.35
3/4	VH289	5.45	VH2	2.40
1	VH389	5.50	VH3	2.45



Types VA and VHA

Size In.	Type VA Form 100		Cat. No.	Each
	Cat. No.	Each		
1/2	VA189	\$4.50	VA1	\$1.90
3/4	VA289	4.55	VA2	1.95
1	VA389	4.60	VA3	2.00

Size In.	Type VHA Form 200		Cat. No.	Each
	Cat. No.	Each		
1/2	VHA189	\$5.40	VHA1	\$2.35
3/4	VHA289	5.45	VHA2	2.40
1	VHA389	5.50	VHA3	2.45



Types VC and VHC

Size In.	Type VC Form 100		Cat. No.	Each
	Cat. No.	Each		
1/2	VC1189	\$4.60	VC11	\$2.00
3/4	VC2289	4.70	VC22	2.10
1	VC3389	4.80	VC33	2.20

Size In.	Type VHC Form 200		Cat. No.	Each
	Cat. No.	Each		
1/2	VHC1189	\$5.50	VHC11	\$2.45
3/4	VHC2289	5.60	VHC22	2.55
1	VHC3389	5.65	VHC33	2.60



Types VDA and VHDA

Size In.	Type VDA Form 100		Cat. No.	Each
	Cat. No.	Each		
1/2	VDA189	\$4.50	VDA1	\$1.90
3/4	VDA289	4.55	VDA2	1.95
1	VDA389	4.60	VDA3	2.00

Size In.	Type VHDA Form 200		Cat. No.	Each
	Cat. No.	Each		
1/2	VHDA189	\$5.40	VHDA1	\$2.35
3/4	VHDA289	5.45	VHDA2	2.40
1	VHDA389	5.50	VHDA3	2.45

Forms 100 and 200 indicate sizes of Condulets. Accessories and parts are correspondingly classified.

If specified on the order, lamp receptacle with lamp grip will be furnished at an advance of 10 cents in the list price.

If specified on the order, pigtail receptacle will be furnished at an advance of 45 cents in the list price.

These Condulets can be equipped with externally operated switch at an advance of \$1.00 in the list price.

Vaportight Industrial Lighting Condulets

Schedule CR

V and VH Series, Clamp Guard Type

Guards are made of cast aluminum. Condulets are made of cast Feraloy. Cadmium-galvanized is the standard finish on Condulets.

Form 100

Furnished with globe V75 and guard V97, and takes 50, 60, 75, or 100-watt lamps.

Form 200

Furnished with globe V200 and guard VH99, and takes 150 or 200-watt lamps.



Size In.	Type VJ Form 100		Without Globe and Guard	
	With Globe and Guard No.	Each	No.	Each
1/2	VJ1189	\$5.15	VJ11	\$2.55
3/4	VJ2289	5.25	VJ22	2.65
1	VJ3389	5.35	VJ33	2.75

Size In.	Type VHJ Form 200		Cat. No.	Each
	Cat. No.	Each		
1/2	VHJ1189	\$5.90	VHJ11	\$2.85
3/4	VHJ2289	6.00	VHJ22	2.95
1	VHJ3389	6.10	VHJ33	3.05

Size In.	Type VG Form 100		Cat. No.	Each
	Cat. No.	Each		
1/2	VG189	\$4.75	VG1	\$2.15
3/4	VG289	4.85	VG2	2.25
1	VG389	4.95	VG3	2.35

Size In.	Type VHG Form 200		Cat. No.	Each
	Cat. No.	Each		
1/2	VHG189	\$5.50	VHG1	\$2.45
3/4	VHG289	5.60	VHG2	2.55
1	VHG389	5.70	VHG3	2.65

V Series, Screw Guard Type

Form 100

Furnished with globe V75 and guard V911, and takes 50, 60, 75, or 100-watt lamps.

Form 200

Furnished with globe V200 and guard V912, and takes 150 or 200-watt lamps.



Size In.	Type VJ Form 100		Without Globe and Guard	
	With Globe and Guard No.	Each	No.	Each
1/2	VJ1759	\$5.15	VJ175	\$2.55
3/4	VJ2759	5.25	VJ275	2.65
1	VJ3759	5.35	VJ375	2.75

Size In.	Type VJ Form 200		Cat. No.	Each
	Cat. No.	Each		
1/2	VJ12009	\$5.90	VJ1200	\$2.85
3/4	VJ22009	6.00	VJ2200	2.95
1	VJ32009	6.10	VJ3200	3.05

Size In.	Type VG Form 100		Cat. No.	Each
	Cat. No.	Each		
1/2	VG1759	\$4.75	VG175	\$2.15

Size In.	Type VG Form 200		Cat. No.	Each
	Cat. No.	Each		
1/2	VG12009	\$5.50	VG1200	\$2.45

Forms 100 and 200 indicate sizes of Condulets. Accessories and parts are correspondingly classified.

If specified on order, lamp receptacle with lamp grip will be furnished at advance of 10 cents in list price.

If specified on order, pigtail receptacle will be furnished at advance of 45 cents in list price.

These Condulets can be equipped with externally operated switch at advance of \$1.00 in list price.

Accessories and Parts

Schedule CR

For V and VH Series Condulets, Clamp Guard Type and V Series Condulets, Screw Guard Type

Globes



Description	Form 100—5 3/8 In. Long		Form 100—6 3/4 In. Long		Form 200—9 1/4 In. Long	
	Cat. No.	Each	Cat. No.	Each	Cat. No.	Each
Clear	V15	\$.80	V75	\$.80	V200	\$.80
Opal	VN51	1.10	VN71	1.10	VO201	1.70
Green	VN52	1.70	VN72	1.70	VO202	2.35
Blue	VN53	1.70	VN73	1.70	VO203	2.35
Orange	VN54	1.70	VN74	1.70	VO204	2.35
Ruby	VN55	1.70	VN75	1.70	VO205	2.35
Amber	VN56	1.70	VN76	1.70	VO206	2.35

Prismatic Diffusing Globes

Clear	.....	.....	V103	\$.80	.....	.....
Clear	V153	\$1.25	V63	\$1.25	V93	\$2.00

For V and VH Series Clamp Guard Type

Guards



Cast aluminum.

Cat. No.	Each	Form	For Globe In.
V95	\$1.80	100	5 3/8
V97	1.80	100	6 3/4
VH99	2.25	200	9 1/4

Guards for Use with Pear-Shaped Globes



Cat. No.	Each	Form	For Globe In.
V913	\$1.80	100	6 3/4
VH949	2.25	200	9 1/4

Guards with Reflector Holders



Cat. No.	Each	Form	For Globe In.
V913	\$1.80	100	6 3/4
VH914	2.25	200	9 1/4

*Reflector Holders



V625	\$.50	100	.....
VH626	.65	200	.....

*For clamping reflector to Condulet when guard is not used.

For V Series Screw Guard Type



Cast aluminum.

Cat. No.	Each	Form	For Globe In.
V910	\$1.80	100	5 3/8
V911	1.80	100	6 3/4
V912	2.25	200	9 1/4

Guards for Use with Pear-Shaped Globes



Cat. No.	Each	Form	For Globe In.
V946	\$1.80	100	.....
V947	2.25	200	.....

Guards with Reflector Holders



Cat. No.	Each	Form	For Globe In.
V911	\$1.80	100	6 3/4
V912	2.25	200	9 1/4

*Reflector Holders



V623	\$.50	100	.....
V624	.65	200	.....

Accessories and Parts

Schedule CR

For V and VH Series Condulets, Clamp Guard Type and V Series Condulets, Screw Guard Type

Reflectors are green porcelain enamel outside and white porcelain enamel inside.

Pear-Shaped Globes

Cannot be used with straight guards.



Description	Watts	No.	Each
Clear, Plain	50, 60, 75, 100	V105	\$.80
Clear, Pyrex	50, 60, 75, 100	V108	2.15
Clear, Plain	150, 200	V205	\$.80
Clear, Pyrex	150, 200	V208	2.75

Dome Reflectors



Takes Lamps	Watts	Diameter Inches	Depth Inches	No.	Each
50, 60, 75, 100		12	5 1/8	SH27	\$2.75
150		14	6 1/4	SH28	\$3.25
200		16	7 3/8	SH29	3.75

Shallow Bowl Reflectors



Takes Lamps	Watts	Diameter Inches	Depth Inches	No.	Each
50, 60, 75, 100		12	3 3/8	SH57	\$2.25
150		14	4 1/8	SH58	\$2.75
200		16	4 15/16	SH59	3.25

30° Angle Reflectors



Takes Lamps	Watts	Diameter Inches	Depth Inches	No.	Each
50, 60, 75, 100		10	8 1/4	*SH67	\$2.00
150, 200		12	10 3/4	†SH68	\$3.50

*Center line of Condulet must be located 4 3/8 inches from the wall for mounting angle reflector.

†Center line of Condulet must be located 4 1/8 inches from the wall for mounting angle reflector.

Keyless Receptacles

660 Watts, 600 Volts



No. GS126M2

No.	Each	Material Composition
GS126M2	\$.65	Porcelain



No. CCV337

Form 100V series and Form 200 VH series, clamp guard type, and Forms 100 and 200 V series, screw guard type were previously furnished with receptacle CCV337. Listed above for the convenience of customers wishing to order parts for these Condulets.

Type VXHA Vaportight Industrial Lighting Condulets

Schedule CR

Clamp Guard Type—With 5 Hubs

Form 100

Type VXHA is a V series, having threaded conduit hubs flush with the outside of the body. One hub is in center of the top; all hubs open or with one hub open and others closed with four flush type threaded pipe plugs.

One or more conduits may be used with the Condulet in various ways by removing or changing the plugs to suit requirements.

Furnished with GS126M2 lamp receptacle and gasket.

Furnished with globe V75 and guard V97 and takes accessories and parts, for V and VH series Condulets, clamp guard type, and 50, 60, 75, or 100-watt lamps.

Guards are made of cast aluminum. Condulets are made of cast Feraloy; cadmium-galvanized is the standard finish.



Size In.	With Globe and Guard		Without Globe and Guard	
	No.	Each	No.	Each
1/2	VXHA112	\$5.19	VXHA11	\$2.59
3/4	VXHA212	5.57	VXHA21	2.97
1	VXHA312	5.95	VXHA31	3.35

Form 100 indicates size of Condulets. Accessories and parts are correspondingly classified.

If specified, lamp receptacle with lamp grip will be furnished at advance of 10 cents in list price.

If specified, pigtail receptacle will be furnished at advance of 45 cents in list price.

These Condulets can be equipped with externally operated switch at advance of \$1.00 in list price.

Type VDB Vaportight Industrial Lighting Fixtures with Reflectors

Schedule R

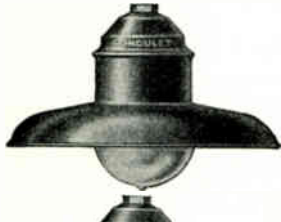
Type VDB is a cast aluminum fixture of the vaportight type, designed to meet the need for a simple, effective, and inexpensive vaportight industrial lighting fixture.

Made so that dust or vapor cannot enter the conduit system even if the globe is removed or broken. The opening into the conduit system is entirely closed by the lamp receptacle.

Furnished with a clear, plain pear-shaped globe, and a porcelain enameled reflector. The reflector is held to the body by four screws.

Form 3 is furnished with pear-shaped globe VDB3, reflector, and medium base lamp receptacle.

Form 5 is furnished with pear-shaped globe VDB5, reflector, and mogul base lamp receptacle.



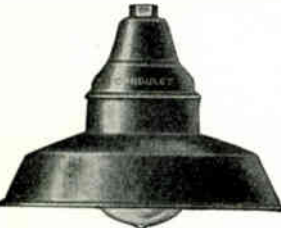
Complete with Shallow Bowl Reflector Form 3

Size In.	Takes Lamps Watts	No.	Each
1/2	150	VDB13	\$6.75
3/4	150	VDB23	6.75
1/2	200	VDB17	8.25
3/4	200	VDB27	8.25



Complete with Dome Reflector Form 3

Size In.	Takes Lamps Watts	No.	Each
1/2	150	VDB138	\$6.75
3/4	150	VDB238	6.75
1/2	200	VDB139	8.25
3/4	200	VDB239	8.25



Complete with Dome Reflector Form 5

Size In.	Takes Lamps Watts	No.	Each
1/2	300 or 500	VDB15	\$10.75
3/4	300 or 500	VDB25	10.75



***Complete with 30° Angle Reflector**

Size In.	Takes Lamps Watts	No.	Each
1/2	300 or 500	VDB145	\$10.00
3/4	300 or 500	VDB245	10.00

*Center line of Condulet must be located 5 inches from wall for mounting angle reflector.

Type VDB Fixtures unless otherwise specified, are shipped completely assembled and packed in individual cartons.

In locations where excessive vibration occurs, a bail is recommended for use with Type VDB Fixtures; if specified on order, it will be furnished at an advance of 75 cents list for form 3, and \$1.00 for Form 5.

Form 200 reflectors of the angle type may be used with VDB Form 3 vaportight fixtures listed above.



Pear-Shaped Globes

Takes Lamps Watts	Description	No.	Each
150 or 200	Form 3 Clear, Plain	VDB3	\$1.20
300 or 500	Form 5 Clear, Plain	VDB5	\$1.60



Basket Wire Guards

Steel, tinned finish.

For use with reflectors listed above; also with reflectors for V and VH series Condulets.

No.	V932	V934	V936	V938
Each	\$1.50	1.80	2.10	2.50
For Size Reflector	12	14	16	18

Type VS Vaportight Portable Hand Lamps

Schedule CR

Type VS portable hand lamps are suited for use in refineries, bakeries, flour mills, grain elevators, marine work or wherever inflammable vapor, dust or moisture is present. They are not intended for use in hazardous, combustible, or explosive atmospheres such as gasoline vapor, grain dust, or coal dust.

A composition one-piece receptacle is used. An additional binding screw terminal is provided for a safety circuit wire in the connecting cord or cable, for grounding the holder, guard, and other non-current, carrying metal parts.

Type VS, Clamp Guard Type With Rubber Handle

The guard and globe holder are made of cast aluminum; the handle of moulded rubber; and the gland nut of moulded composition. The rubber handle provides a comfortable grip for the hand, yet has sufficient flexibility to prevent breakage when subjected to rough usage.

The improved clamp for fastening the globe to the holder grips it throughout its entire circumference.

Furnished complete with globe, guard, receptacle, gasket, and vaportight gland in handle.



Size Lamp Watts	Size Globe Inches	Size Cable Inches	Cat. No.	Each
60	5 3/8	.250 to .625	VS20	\$6.15
100	6 3/4	.250 to .625	VS30	6.15

Type VS, Screw Guard Type

With Cast Metal Handle

The handle is cast as an integral part of the guard and globe holder, and is made of cast aluminum. The handle is provided with a stuffing box, consisting of a gland nut and tapered rubber bushing for the cord.

The globe screws into the holder and is protected by a guard which also screws into the same holder.

Furnished complete with globe, guard, receptacle, gasket, cord guard spring, and vaportight gland in handle.



Size Lamp Watts	Size Globe Inches	Size Cable Inches	Cat. No.	Each
60	5 3/8	.250 to .625	VS61	\$6.15
100	6 3/4	.250 to .625	VS71	6.15

Guards for Type VS Portable Hand Lamps

Clamp Guard Type

Screw Guard Type



Steel Wire



Steel Wire

Cat. No.	Each	For Globe Inches	Cat. No.	Each	For Globe Inches
VS95	\$2.00	5 3/8	VS910	\$2.00	5 3/8
VS97	2.00	6 3/4	VS911	2.00	6 3/4

Globes for Type VS Portable Hand Lamps



Size Inches	Cat. No.	Each	Cat. No.	Each
5 3/8	V15	\$.80	V153	\$1.25
6 3/4	V75	.80	V63	1.25

If specified on order, lamp receptacle with lamp grip will be furnished at an advance of 10 cents in the list price.

Type VS Vaportight Portable Hand Lamps

Schedule CR



Handle and globe holder are made of moulded rubber in one piece. Handle provides a comfortable, insulated grip for hand and has sufficient flexibility to prevent breakage when subjected to rough usage. This flexibility also cushions the lamp and globe from direct shock. One end of handle is provided with a tapered rubber bushing and moulded composition gland nut. Bushing clamps the cord and protects it where it leaves the handle. The other end of handle is enlarged to hold the lamp receptacle and globe.

Body of lamp receptacle is one piece of moulded composition, held in position in handle by a retaining snap ring. Globe is pear-shaped of clear, Pyrex glass. Guard is fabricated from heavy steel wire, bright tinned. It screws on a threaded metal ring around the handle and when in place, also clamps globe in handle to prevent it from working loose.

Furnished with guard and pear-shaped globe.

Globe Watts	Lamp Watts	Cord In.	Without Hook		Without Interchangeable Hook	
			No.	Each	No.	Each
*100	100	.250 to .625	VS121	\$11.25	VS120	\$11.50
† 60	60	.250 to .625	VS126	12.75	VS125	13.00

*Heat-resisting.

†Impact-resisting.

If specified, these lamps can be furnished with handle and globe holder made of DuPrene compound, which resists heat, oil, and gasoline and gives longer service under such conditions. Add to number suffix "SI," and \$2.00 to list price.

If specified, lamp receptacle with lamp grip will be furnished at advance of 10 cents in list price.

Safety Hand Lamps

Schedule CR

Take 15 to 75-Watt Lamps



Type LPG

Types LPG and LPH Safety Hand Lamps are constructed to withstand the severe service encountered in railroad shops, garages, industrial plants, storehouses, etc.

Special attention has been given to safety circuit requirements. A terminal is provided for a safety circuit wire in the connecting cord for grounding the guard and other metal parts not connected with the electrical circuit.

The handle is maple, black enameled. A metal bracket on which the ground terminal is mounted also provides a cord strain relief and support for the lamp socket as a unit. The strain relief, being a unit with the lamp socket assembly,

provides a more secure support for the cord entirely independent of the handle and the unit is accessible for making the splice between the lamp cord and the socket terminal wires.

The guard and half shade are made of aluminum alloy, light in weight, but strong; they will resist bending or breaking.

The hook, which is large and strong, can be turned so that when the half shade is used the light can be directed as desired.

A compression washer prevents a twisted lamp cord from turning the lamp out of a set position.

Type LPG, with Guard

Cat. No. LPG24.....each \$3.00

Type LPH, with Guard and Half Shade

Cat. No. LPH24.....each \$3.15



Type LPH

AL Series Flexible Fixture Hanger Condulets

Schedule CR

For Pendent Fixtures

AL series Condulets provide a flexible suspension for electrical fixtures. The fixtures are suspended from a universal joint which assures that the fixture will hang plumb. It also prevents breaking the fixture stem at the point of suspension, due to strains set up by the wind or by accidental impact. This universal joint permits the fixture to swing through an angle of about 20 degrees in any direction from the perpendicular.

To remove a fixture as a unit it is necessary only to take off the cover of the Condulet, disconnect the fixture wires, and slide the supporting nipple out of the groove in the Condulet. A specially designed terminal block may be used, thereby facilitating connecting and disconnecting.

The fixture stem cannot twist in the joint in such a manner as to injure the wires or connections.

The cushion fixture hanger differs from the ball fixture hanger in that it is provided with a spring which carries the weight of the fixture and absorbs any shocks due to vibration or other causes.

Cadmium-galvanized is the standard finish.



Type ALA Ball

Type ALA Ball Hangers

Cat. No.	Thick Wall Each	Wt. Fixture Lbs.	Size, In.		Std. Pkg.
			Fixture Stem	Conduit	
ALA1	\$.65	.....	1/2	1/2	25
ALA21	.75	.....	1/2	3/4	25
ALA22	.85	.....	3/4	3/4	25



Type ALA Cushion

Type ALA Cushion Hangers

Cat. No.	Price	Qty.	Size, In.		Std. Pkg.
			Fixture Stem	Conduit	
ALA14	\$1.40	3 to 6	1/2	1/2	25
ALA214	1.50		1/2	3/4	25
ALA224	1.60		3/4	3/4	25
ALA18	1.40	6 to 12	1/2	1/2	25
ALA218	1.50		1/2	3/4	25
ALA228	1.60		3/4	3/4	25
ALA116	1.40	12 to 24	1/2	1/2	25
ALA2116	1.50		1/2	3/4	25
ALA2216	1.60		3/4	3/4	25



Type ALC Ball

Type ALC Ball Hangers

Cat. No.	Price	Qty.	Size, In.		Std. Pkg.
			Fixture Stem	Conduit	
ALC1	\$.75	.....	1/2	1/2	25
ALC21	.85	.....	1/2	3/4	25
ALC31	.95	.....	1/2	1	10
ALC22	.95	.....	3/4	3/4	25
ALC32	1.05	.....	3/4	1	10



Type ALC Cushion

Type ALC Cushion Hangers

Cat. No.	Price	Qty.	Size, In.		Std. Pkg.
			Fixture Stem	Conduit	
ALC14	\$1.50	3 to 6	1/2	1/2	25
ALC214	1.60		1/2	3/4	25
ALC314	1.70		1/2	1	10
ALC224	1.70	6 to 12	3/4	3/4	25
ALC324	1.80		3/4	1	10
ALC18	1.50		12 to 24	1/2	1/2	25
ALC218	1.60	1/2		3/4	25
ALC318	1.70	1/2		1	10
ALC228	1.70	24 to 36	3/4	3/4	25
ALC328	1.80		3/4	1	10
ALC116	1.50		36 to 48	1/2	1/2	25
ALC2116	1.60	1/2		3/4	25
ALC3116	1.70	1/2		1	10
ALC2216	1.70	48 to 60	3/4	3/4	25
ALC3216	1.80		3/4	1	10

2-Wire Connection Blocks

Schedule CR

For AL Series Fixture Hanger Condulets

20 Amperes, 125 Volts



Provides a convenient means for connecting line and fixture wires, without splices. Entire fixture and stem can be assembled and wired on the bench. It can then be hung by sliding the supporting nipple into the groove of the Condulet body and connecting fixture wires to two binding terminals of the connection block. Fixture can easily be removed at any time for changes and replacements.

Designed so that it can be placed in the Condulet without any fastenings, yet, it supports itself and remains out of interference with swinging nipple.

No.	Each	Material	Std. Pkg.
CB308	\$.30	Porcelain	25

Flexible Fixture Hangers

Schedule CR

For Pendent Fixtures

For supporting pendent fixtures so that they will always hang plumb, even though supported from an inclined surface. The hangers can be used in conjunction with Condulets.

The flexibility of these joints also prevents breaking the fixture at the point of suspension, due to strains set up by the wind or by accidental impact.

The construction is such that the wires pass through the hanger joint, consequently no wires are exposed.

They will allow the fixture to swing through an angle of 20° in any direction from the perpendicular.

Cadmium-galvanized is the standard finish.



Type UNJ Ball Hangers

SIZE, INCHES		Wt.	Std. Pkg.	No.	Each
Fix. Stem	Hub	Fix. Lb.			
3/8	1/2	1 1/2 to 3	50	UNJ1308	\$.65
1/2	1/2	3 to 6	50	UNJ1	.65

Type UNJC Cushion Hangers

Type UNJC is provided with a spring which carries the weight of the fixture and absorbs any shocks due to vibration or other causes.



SIZE, INCHES		Wt.	Std. Pkg.	No.	Each
Fix. Stem	Hub	Fix. Lb.			
1/2	1/2	1 1/2 to 3	25	UNJC12	\$1.35
1/2	1/2	3 to 6	25	UNJC14	1.35
1/2	1/2	6 to 12	25	UNJC18	1.35
1/2	1/2	12 to 24	25	UNJC116	1.35

Type ARB Flexible Fixture Hangers

Schedule CR

For 4-Inch Outlet Boxes, Fixtures with 1/2-Inch Stem, and Pendent Fixtures

For use on concealed conduit systems. Provide flexible suspension for pendent fixtures with 1/2-inch conduit stem.

Means are provided to prevent the twisting of the fixture stem in such a manner as to injure the wires or connections.

Fastening screws spaced 3 1/2 inches center to center are provided for use on standard 4-inch outlet boxes.

Cadmium-galvanized is the standard finish.



Ball Hangers

Arranged with a ball-and-socket joint that permits a free swing of 11° in any direction from the perpendicular.

No.	Each	Std. Pkg.
ARB6	\$.55	25

Cushion Hangers

Provided with a spring which carries the weight of the fixture and absorbs any shocks due to vibration or from other causes, and permits a free swing of 8° in any direction from the perpendicular.



Wt. Fix. Lb.	Std. Pkg. Assorted	No.	Each
2 to 4	25	ARB14	\$.65
4 to 8	25	ARB8	.65
8 to 16	25	ARB10	.65

Flexible Fixture Hangers

Schedule CR

For Pendent Fixtures

Hangers and loops have an opening to provide a smooth passageway for the wires; opening is through the center and out the side. Hooks are so proportioned that accidental disengagement of parts is eliminated.

Made of malleable iron.



Size Fix. Stem, In.	Std. Pkg.
1/2	25
3/4	25

Male



Female

Type UNH Rigid Hangers

Male		Female	
No.	Each	No.	Each
UNH16	\$.30	UNH1	\$.25
UNH26	.35	UNH2	.30



Type UNE Fixture Loops

Male		Female	
No.	Each	No.	Each
UNE16	\$.30	UNE1	\$.25
UNE26	.35	UNE2	.30



Female

AR Series Condulets

Schedule CR

Take Arkkite receptable housings.

Cadmium-galvanized is the standard finish.

Form B Condulets take 20 and 30-ampere housings.

Form C Condulets take 60-ampere housings.

Type ARRH

Size In.	Form B		Form C	
	No.	Each	No.	Each
1/2	ARRH13	\$.90	ARRH16	\$1.30
3/4	ARRH23	1.00	ARRH26	1.40
1	ARRH33	1.10	ARRH36	1.50
1 1/4	.....	.....	ARRH46	1.60
1 1/2	.....	.....	ARRH56	1.70

Type ARRC

1/2	ARRC13	\$1.00	ARRC16	\$1.40
3/4	ARRC23	1.10	ARRC26	1.50
1	ARRC33	1.20	ARRC36	1.60
1 1/4	.....	.....	ARRC46	1.70
1 1/2	.....	.....	ARRC56	1.80

Type ARE

1/2	ARE13	\$1.00	ARE16	\$1.45
3/4	ARE23	1.10	ARE26	1.55
1	ARE33	1.20	ARE36	1.65
1 1/4	.....	.....	ARE46	1.75
1 1/2	.....	.....	ARE56	1.85

Type ARDF

1/2	ARDF13	\$1.15	ARDF16	\$1.60
3/4	ARDF23	1.25	ARDF26	1.70
1	ARDF33	1.35	ARDF36	1.80
1 1/4	.....	.....	ARDF46	1.90
1 1/2	.....	.....	ARDF56	2.00

Type ARJ

1/2	ARJ13	\$1.30	ARJ16	\$1.75
3/4	ARJ23	1.40	ARJ26	1.85
1	ARJ33	1.50	ARJ36	1.95
1 1/4	.....	.....	ARJ46	2.05
1 1/2	.....	.....	ARJ56	2.15

Type ARD

1/2	ARD13	\$1.45	ARD16	\$1.90
3/4	ARD23	1.55	ARD26	2.00
1	ARD33	1.65	ARD36	2.10
1 1/4	.....	.....	ARD46	2.20
1 1/2	.....	.....	ARD56	2.30

AJ Series Condulets

Schedule CR

A square Condulet, and can, therefore, be mounted with the hubs at top, bottom, right, or left.

With 60 and 100-ampere angle adapter; forms C and D.

Cadmium-galvanized is the standard finish.



Type AJ

Size In.	Type AJ		Type AJC	
	No.	Each	No.	Each
3/4	AJ27	\$7.65	AJC27	\$7.80
1	AJ37	7.70	AJC37	7.90
1 1/4	AJ47	7.75	AJC47	8.00
1 1/2	AJ57	7.80	AJC57	8.10
2	AJ67	7.85	AJC67	8.20



Type AJC

Arktite Receptacle Housings

Schedule CR
20, 30, 60, and 100-Ampere
250 Volts D.C., 600 Volts A.C.

Arktite Receptacle Housings



Spring Door



Plain

Types AP and APJ Plugs



With Cable Clamp



With Rubber Cable Grip

Receptacles will take any of the plugs grouped in the bracket opposite the receptacle listings.

Cadmium-galvanized is the standard finish.

Description	Spring Door		Plain		*20-Ampere For AR Series—Form B Style 1—Grounded through Shell With Cable Clamp				With Rubber Cable Grip			
	No.	Each	No.	Each	Diam. Cable Inches		No.	Each	Diam. Cable Inches		No.	Each
2-Wire, 2-Pole	AR221	\$5.45	AR223	\$4.75	.313 to .500	.500 to .750	AP2211	\$4.85	.250 to .500	.500 to .875	APJ2251	\$5.50
2-Wire, 2-Pole	AR321	\$6.25	AR323	\$5.55	.438 to .750	.688 to .938	AP3212	\$5.50	.500 to .875	.500 to .875	APJ3253	\$6.15
3-Wire, 3-Pole	AR331	6.75	AR333	6.05	.438 to .750	.688 to .938	AP3312	6.15	.500 to .875	.500 to .875	APJ3353	6.80
4-Wire, 4-Pole	AR341	7.55	AR343	6.85	.438 to .750	.688 to .938	AP3412	6.95	.500 to .875	.500 to .875	APJ3453	7.60
5-Wire, 5-Pole	AR351	8.75	AR353	8.05	.438 to .750	.688 to .938	AP3513	8.20	.500 to .875	.500 to .875	APJ3553	8.85
2-Wire, 3-Pole	AR332	\$7.75	AR334	\$7.05	*30-Ampere For AR Series—Form B Style 1—Grounded through Shell Extra Pole and Shell				Style 2—Grounded through Extra Pole and Shell			
3-Wire, 4-Pole	AR342	8.55	AR344	7.85	.438 to .750	.688 to .938	AP3322	\$7.15	.500 to .875	.500 to .875	APJ3363	\$7.80
4-Wire, 5-Pole	AR352	10.30	AR354	9.60	.438 to .750	.688 to .938	AP3324	7.15	.500 to .875	.500 to .875	APJ3463	8.60
2-Wire, 2-Pole	AR621	\$10.00	AR623	\$8.75	.438 to .750	.688 to .938	AP3422	7.95	.500 to .875	.500 to .875	APJ3563	10.50
3-Wire, 3-Pole	AR631	11.00	AR633	9.75	.438 to .750	.688 to .938	AP3424	7.95	.500 to .875	.500 to .875	APJ6253	\$8.75
4-Wire, 4-Pole	AR641	13.00	AR643	11.75	.438 to .750	.688 to .938	AP3425	7.95	.500 to .875	.500 to .875	APJ6255	8.75
2-Wire, 3-Pole	AR632	\$12.25	AR634	\$11.00	.438 to .750	.688 to .938	AP6213	\$7.75	.500 to .875	.500 to .875	APJ6255	8.75
3-Wire, 4-Pole	AR642	14.25	AR644	13.00	.438 to .750	.688 to .938	AP6215	7.75	.500 to .875	.500 to .875	APJ6353	9.50
2-Wire, 2-Pole	AR1021	\$13.00	AR1023	\$11.50	.500 to .875	.750 to 1.188	AP6313	8.50	.500 to .875	.500 to .875	APJ6355	9.50
3-Wire, 3-Pole	AR1031	14.00	AR1033	12.50	.500 to .875	.750 to 1.188	AP6315	8.50	.500 to .875	.500 to .875	APJ6453	10.50
4-Wire, 4-Pole	AR1041	16.00	AR1043	14.50	.500 to .875	.750 to 1.188	AP6414	9.50	.500 to .875	.500 to .875	APJ6455	10.50
2-Wire, 3-Pole	AR1032	\$15.50	AR1034	\$14.00	.500 to .875	.750 to 1.188	AP6416	9.50	.500 to .875	.500 to .875	APJ6363	\$10.75
3-Wire, 4-Pole	AR1042	17.50	AR1044	16.00	.500 to .875	.750 to 1.188	AP6325	9.75	.500 to .875	.500 to .875	APJ6365	10.75
2-Wire, 2-Pole	AR1021	\$13.00	AR1023	\$11.50	.500 to .875	.750 to 1.188	AP6424	10.75	.500 to .875	.500 to .875	APJ6463	11.75
3-Wire, 3-Pole	AR1031	14.00	AR1033	12.50	.500 to .875	.750 to 1.188	AP6426	10.75	.500 to .875	.500 to .875	APJ6465	11.75
4-Wire, 4-Pole	AR1041	16.00	AR1043	14.50	.500 to .875	.750 to 1.188	AP10215	\$12.50	.500 to .875	.500 to .875	AP10253	\$14.00
2-Wire, 3-Pole	AR1032	\$15.50	AR1034	\$14.00	.500 to .875	.750 to 1.188	AP10217	12.50	.500 to .875	.500 to .875	AP10255	14.00
3-Wire, 4-Pole	AR1042	17.50	AR1044	16.00	.500 to .875	.750 to 1.188	AP10315	13.50	.500 to .875	.500 to .875	AP10257	14.00
2-Wire, 2-Pole	AR1021	\$13.00	AR1023	\$11.50	.500 to .875	.750 to 1.188	AP10317	13.50	.500 to .875	.500 to .875	AP10353	15.00
3-Wire, 3-Pole	AR1031	14.00	AR1033	12.50	.500 to .875	.750 to 1.188	AP10416	15.50	.500 to .875	.500 to .875	AP10355	15.00
4-Wire, 4-Pole	AR1041	16.00	AR1043	14.50	.500 to .875	.750 to 1.188	AP10417	15.50	.500 to .875	.500 to .875	AP10357	15.00
2-Wire, 3-Pole	AR1032	\$15.50	AR1034	\$14.00	.500 to .875	.750 to 1.188	AP10426	17.00	.500 to .875	.500 to .875	AP10453	17.00
3-Wire, 4-Pole	AR1042	17.50	AR1044	16.00	.500 to .875	.750 to 1.188	AP10427	17.00	.500 to .875	.500 to .875	AP10455	17.00
2-Wire, 2-Pole	AR1021	\$13.00	AR1023	\$11.50	.500 to .875	.750 to 1.188	AP10325	\$15.00	.500 to .875	.500 to .875	AP10363	\$16.50
3-Wire, 3-Pole	AR1031	14.00	AR1033	12.50	.500 to .875	.750 to 1.188	AP10327	15.00	.500 to .875	.500 to .875	AP10365	16.50
4-Wire, 4-Pole	AR1041	16.00	AR1043	14.50	.500 to .875	.750 to 1.188	AP10426	17.00	.500 to .875	.500 to .875	AP10367	16.50
2-Wire, 3-Pole	AR1032	\$15.50	AR1034	\$14.00	.500 to .875	.750 to 1.188	AP10427	17.00	.500 to .875	.500 to .875	AP10463	18.50
3-Wire, 4-Pole	AR1042	17.50	AR1044	16.00	.500 to .875	.750 to 1.188	AP10427	17.00	.500 to .875	.500 to .875	AP10465	18.50

*20-ampere plugs and receptacles are interchangeable with former 15-ampere plugs and receptacles; 30-ampere (except the 2-wire, 2-pole), with former 15-ampere; 60-ampere, with former 30-ampere; 100-ampere, with former 60-ampere.

†100-ampere, also furnished with auxiliary metal cable clamp.
‡20-ampere, 2-pole plugs and receptacles have binding screw terminals, all others have soldered terminals.

Arktite Receptacle Housings

Schedule CR

20, 30, 60, and 100-Ampere
250 Volts D.C., 600 Volts A.C.

Arktite Receptacle Housings



Threaded



With Cap

**Types AP and APJ Plugs
With Fastening Ring**



With Cable Clamp



With Rubber Cable Grip

Receptacles will take any of the plugs grouped in the bracket opposite the receptacle listings.

Cadmium-galvanized is the standard finish.

***20-Ampere**

For AR Series—Form B

Style 1—Grounded through Shell

Description	Threaded		With Cap		With Cable Clamp			With Rubber Cable Grip		
	No.	Each	No.	Each	Diam. Cable Inches	No.	Each	Diam. Cable Inches	No.	Each
2-Wire, 2-Pole	AR 225	\$5.00	AR 227	\$5.80	.500 to .750	AP2232	\$5.45	.250 to .500	APJ2271	\$6.10
					.500 to .875			APJ2273			6.10

***30-Ampere**

For AR Series—Form B

Style 1—Grounded through Shell

2-Wire, 2-Pole	AR 325	\$5.80	AR 327	\$6.60	.438 to .750	AP 3232	\$6.10	.500 to .875	APJ3273	\$6.75
					.688 to .938	AP 3234	6.10			
3-Wire, 3-Pole	AR 335	6.30	AR 337	7.10	.438 to .750	AP 3332	6.75	.500 to .875	APJ3373	7.40
					.688 to .938	AP 3334	6.75			
4-Wire, 4-Pole	AR 345	7.10	AR 347	7.90	.875 to 1.188	AP 3335	6.75	.500 to .875	APJ3473	8.20
					.438 to .750	AP 3432	7.55			
5-Wire, 5-Pole	AR 355	8.30	AR 357	9.10	.688 to .938	AP 3434	7.55	.500 to .875	APJ3573	9.45
					.875 to 1.188	AP 3435	7.55			

Style 2—Grounded through Extra Pole and Shell

2-Wire, 3-Pole	AR 336	\$7.30	AR 338	\$8.10	.438 to .750	AP 3342	\$7.75	.500 to .875	APJ3383	\$8.40
					.688 to .938	AP 3344	7.75			
3-Wire, 4-Pole	AR 346	8.10	AR 348	8.90	.875 to 1.188	AP 3345	7.75	.500 to .875	APJ3483	9.20
					.438 to .750	AP 3442	8.55			
4-Wire, 5-Pole	AR 356	9.75	AR 358	10.55	.688 to .938	AP 3444	8.55	.500 to .875	APJ3583	11.10
					.875 to 1.188	AP 3445	8.55			

***60-Ampere**

For AR and AJ Series—Form C

Style 1—Grounded through Shell

2-Wire, 2-Pole	AR 625	\$9.10	AR 627	\$10.20	.500 to .875	AP 6233	\$8.75	.500 to .875	APJ6273	\$9.75
					.750 to 1.188	AP 6235	8.75			
3-Wire, 3-Pole	AR 635	10.10	AR 637	11.20	.500 to .875	AP 6333	9.50	.500 to .875	APJ6373	10.50
					.750 to 1.188	AP 6335	9.50			
4-Wire, 4-Pole	AR 645	12.10	AR 647	13.20	.688 to 1.000	AP 6434	10.50	.500 to .875	APJ6473	11.50
					.938 to 1.469	AP 6436	10.50			

Style 2—Grounded through Extra Pole and Shell

2-Wire, 3-Pole	AR 636	\$11.35	AR 638	\$12.45	.500 to .875	AP 6343	\$10.75	.500 to .875	APJ6383	\$11.75
					.750 to 1.188	AP 6345	10.75			
3-Wire, 4-Pole	AR 646	13.35	AR 648	14.45	.688 to 1.000	AP 6444	11.75	.500 to .875	APJ6483	12.75
					.938 to 1.469	AP 6446	11.75			

***100-Ampere**

For AJ Series—Form D

Style 1—Grounded through Shell

2-Wire, 2-Pole	AR1025	\$12.00	AR1027	\$14.00	.750 to 1.188	AP10235	\$14.00	.500 to .875	AP10273	\$15.50
					1.188 to 1.813	AP10237	14.00			
3-Wire, 3-Pole	AR1035	13.00	AR1037	15.00	.750 to 1.188	AP10335	15.00	.500 to .875	AP10373	16.50
					1.188 to 1.813	AP10337	15.00			
4-Wire, 4-Pole	AR1045	15.00	AR1047	17.00	.938 to 1.313	AP10436	17.00	.500 to .875	AP10473	18.50
					1.313 to 2.063	AP10437	17.00			

Style 2—Grounded through Extra Pole and Shell

2-Wire, 3-Pole	AR1036	\$14.50	AR1038	\$16.50	.750 to 1.188	AP10345	\$16.50	.500 to .875	AP10383	\$18.00
					1.188 to 1.813	AP10347	16.50			
3-Wire, 4-Pole	AR1046	16.50	AR1048	18.50	.938 to 1.313	AP10446	18.50	.500 to .875	AP10483	20.00
					1.313 to 2.063	AP10447	18.50			

*20-ampere plugs and receptacles are interchangeable with former 15-ampere plugs and receptacles; 30-ampere (except the 2-wire, 2-pole), with former 15-ampere; 60-ampere, with former 30-ampere; 100-ampere, with former 60-ampere.

†100-ampere, also furnished with auxiliary metal cable clamp.

‡20-ampere, 2-pole plugs and receptacles have binding screw terminals, all others have soldered terminals.

Type BP Plugs

Schedule CR

For use with types BRD and BRME, plug receptacle housings.

The 30-ampere plugs are arranged for soldered terminals. The 20-ampere plugs are equipped with binding screw terminals. Plugs so equipped with binding screw will not take wires larger than No. 12; consequently, these plugs are rated at 20 amperes. Otherwise, the 20 and 30-ampere plugs are exactly alike.

GROUNDING.—Provision is made for an extra grounding wire in the cable for grounding frame of portable device to shell of plug. Grounding or safety circuit is completed through shell of plug, detent spring, receptacle housing, and conduit system. Detent spring in receptacle has three branches, two of which make contact before and break contact after the main circuit contacts. This method of grounding is N. E. C. standard.

Cadmium-galvanized is the standard finish.

For Flexible Cable

Furnished with cable clamp. With composition handle (non-watertight). Standard package quantity, 25.



2-Pole		Diam. Opening in Cable Clamp, In.	
Cat. No.	Each		
BP22	\$3.60	.500 to .844 (a)	
†30 Amperes, 250 Volts A.C.			
BP32	\$3.60	.500 to .844 (a)	

For Flexible Conductor, Flexible Conduit, or Armored Conductor Without Clamping Nut



Furnished with cable clamp, cast aluminum handle (non-watertight). Standard package quantity, 25.

Diam. Opening in Cable Clamp, In.	2-Pole		3-Pole		4-Pole	
	Cat. No.	Each	Cat. No.	Each	Cat. No.	Each
.500 to .875(b)	BP522	\$2.85				
.625 to 1.125(c)			BP523	\$3.75	BP524	\$4.50
†30 Amperes, 250 Volts A.C.						
.500 to .875(b)	BP532	\$2.85				
.625 to 1.125(c)			BP533	\$3.75	BP534	\$4.50

With Clamping Nut



Furnished with cable clamp, cast aluminum handle (non-watertight). Standard package quantity, 25.

*20 Amperes, 250 Volts A.C.			
.500 to .875(b)	BP722	\$3.35	
.625 to 1.125(c)			BP724 \$5.50
†30 Amperes, 250 Volts A.C.			
.500 to .875(b)	BP732	\$3.35	
.625 to 1.125(c)			BP734 \$5.50

*Can be used on 20-ampere, 125-volt d.c. circuits; or on 20-ampere, 250-volt d.c. circuits if circuit is broken before plug is withdrawn.

†Can be used on 25-ampere, 125-volt d.c. circuits; or on 30-ampere, 250-volt d.c. circuits if circuit is broken before plug is withdrawn.

(a) Clamp opening 1/2 to 7/16 inch takes most of the 2-wire and 3-wire rubber sheathed, fabric sheathed, and deck cables No. 14 to No. 8.

(b) Clamp opening 1/2 to 7/8 inch takes 3/8 and 1/2-inch flexible conduit, No. 14 to No. 8 two or three-conductor armored cable, and most of the 2-wire and 3-wire rubber sheathed, fabric sheathed, and deck cables No. 14 to No. 8.

(c) Clamp opening 5/8 to 1 1/8 inch takes 1/2 and 3/4-inch flexible conduit, No. 10 to No. 6 three-conductor armored cable, and most of the 3-wire and 4-wire rubber sheathed, fabric sheathed, and deck cables No. 12 to No. 6.

Type BP Plugs

Schedule CR

For Flexible Cable

For use with Types BRD, and BRME plug receptacle housings.

Furnished with gland nut, tapered rubber bushing, and cast aluminum handle.

Cadmium-galvanized is the standard finish. Standard package quantity, 25.

Without Clamping Nut



Diam. Clamp Opening, In.	*20 Amperes, 250 Volts A.C.					
	2-Pole		3-Pole		4-Pole	
	No.	Each	No.	Each	No.	Each
.375 to .500	BP6422	\$3.40	BP6423	\$4.15	BP6424	\$4.90
.500 to .625	BP6522	3.60	BP6523	4.35	BP6524	5.10
.625 to .750	BP6622	3.80	BP6623	4.55	BP6624	5.30
.750 to .875	BP6722	4.00	BP6723	4.75	BP6724	5.50
.875 to 1.000			BP6823	4.95	BP6824	5.70
†30 Amperes, 250 Volts A.C.						
.375 to .500	BP6432	\$3.40	BP6433	\$4.15	BP6434	\$4.90
.500 to .625	BP6532	3.60	BP6533	4.35	BP6534	5.10
.625 to .750	BP6632	3.80	BP6633	4.55	BP6634	5.30
.750 to .875	BP6732	4.00	BP6733	4.75	BP6734	5.50
.875 to 1.000			BP6833	4.95	BP6834	5.70

With Clamping Nut (Watertight)



Diam. Clamp Opening, In.	*20 Amperes, 250 Volts A.C.					
	2-Pole		3-Pole		4-Pole	
	No.	Each	No.	Each	No.	Each
.375 to .500	BP8422	\$3.90	BP8423	\$4.90	BP8424	\$5.90
.500 to .625	BP8522	4.10	BP8523	5.10	BP8524	6.10
.625 to .750	BP8622	4.30	BP8623	5.30	BP8624	6.30
.750 to .875	BP8722	4.50	BP8723	5.50	BP8724	6.50
.875 to 1.000			BP8823	5.70	BP8824	6.70
†30 Amperes, 250 Volts A.C.						
.375 to .500	BP8432	\$3.90	BP8433	\$4.90	BP8434	\$5.90
.500 to .625	BP8532	4.10	BP8533	5.10	BP8534	6.10
.625 to .750	BP8632	4.30	BP8633	5.30	BP8634	6.30
.750 to .875	BP8732	4.50	BP8733	5.50	BP8734	6.50
.875 to 1.000			BP8833	5.70	BP8834	6.70

*Can be used on 20-ampere, 125-volt d.c. circuits; or on 20-ampere, 250-volt d.c. circuits if circuit is broken before plug is withdrawn.

†Can be used on 25-ampere, 125-volt d.c. circuits; or on 30-ampere, 250-volt d.c. circuits if circuit is broken before plug is withdrawn.

Type BRC Extension Cable Connectors

Schedule CR

With Rubber Bushing (Watertight)—Cast Aluminum

*30 Amperes, 250 Volts A.C.



Diameter Cable, In.	2-Pole		Furnished with Receptacle
	No.	Each	
.375 to .500	BRC8432	\$7.40	BR2302 30-Ampere 250-Volt
.500 to .625	BRC8532	7.65	
.625 to .750	BRC8632	8.05	
.750 to .875	BRC8732	8.45	
3-Pole			
.375 to .500	BRC8433	\$8.85	BR2303 30-Ampere 250-Volt
.500 to .625	BRC8533	9.10	
.625 to .750	BRC8633	9.50	
.750 to .875	BRC8733	9.90	
.875 to 1.000	BRC8833	10.30	
4-Pole			
.375 to .500	BRC8434	\$10.30	BR2304 30-Ampere 250-Volt
.500 to .625	BRC8534	10.55	
.625 to .750	BRC8634	10.95	
.750 to .875	BRC8734	11.35	
.875 to 1.000	BRC8834	11.75	

*Can be used on 25-ampere, 125-volt d.c. circuits; or on 30-ampere, 250-volt d.c. circuits if circuit is broken before plug is withdrawn.

RS Series Junction Condulets

Schedule CR



Take conduit hub plates. Furnished with cast Feraloy cover, screws and gaskets for cover and hub plates.

The use of these Condulets provides an easy method of tapping a conduit system, where a Condulet body of this series has been installed in the line.

Cover, hub plates, and blank side plates are gasketed, making the Condulet watertight. Cap screws and gaskets are furnished with the Condulet body and not with the cover or hub plates.

Cadmium-galvanized is the standard finish.

Type	Approx. Inside Dimen. Inches	Std. Pkg.	No.	Each
RS	8 1/2 x 8 1/2 x 4	10	RS 1	\$9.25
RSM	8 1/2 x 4 1/2 x 4	10	RSM1	7.85
RSS	4 1/2 x 4 1/2 x 4	10	RSS 1	6.75

RSP Series Conduit Hub Plates

Schedule CR

For RS Series Condulets

For 8 1/2 x 4-Inch Sides of Types RS and RSM Condulets

Without gaskets or cap screws.

Approximate outside dimensions: 8 1/2 x 3 1/2 inches.

Cadmium-galvanized is the standard finish.

Standard package assorted, 40.

With One Hub



*Size Inches	No.	Each
1/2	RSP1	\$1.00
3/4	RSP2	1.05
1	RSP3	1.10
1 1/4	RSP4	1.15
1 1/2	RSP5	1.20
2	RSP6	1.25
2 1/2	RSP7	1.40
3	RSP8	1.65

With Two Hubs



*Size Inches	No.	Each
1/2-1/2	RSP11	\$1.10
3/4-3/4	RSP22	1.20
1-1/2	RSP31	1.30
1-1	RSP33	1.30
1 1/4-3/4	RSP42	1.40
1 1/4-1 1/4	RSP44	1.40
1 1/2-3/4	RSP52	1.55
1 1/2-1	RSP53	1.55
1 1/2-1 1/4	RSP54	1.55
1 1/2-1 1/2	RSP55	1.55
2-3/4	RSP62	1.75
2-1	RSP63	1.75
2-1 1/4	RSP64	1.75
2-1 1/2	RSP65	1.75
2-2	RSP66	1.75
2 1/2-1	RSP73	1.95

With Three Hubs



1/2-1/2-1/2	RSP111	\$1.20
3/4-3/4-3/4	RSP222	1.35
1-1-1/2	RSP331	1.50
1-1-1	RSP333	1.50
1 1/4-1 1/4-3/4	RSP442	1.65
1 1/4-1 1/4-1 1/4	RSP444	1.65
1 1/2-1 1/2-1	RSP553	1.90
1 1/2-1 1/2-1 1/2	RSP555	1.90

Blank



.....	RSP0	\$.95
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*Sizes are given from left to right in illustrations.

RSPM Series Conduit Hub Plates

Schedule CR

For 4 1/2 x 4-Inch Sides of Types RSM and RSS Condulets

Without gaskets or cap screws.

Approximate outside dimensions, 3 1/2 x 3 1/2 inches.

Cadmium-galvanized is the standard finish.

Standard assorted package quantity, 40.

Size In.	With One Hub		Blank	
	No.	Each	No.	Each
1/2	RSMP1	\$.50	.....	.....
3/4	RSMP2	.55	.....	.....
1	RSMP3	.60	.....	.....
1 1/4	RSMP4	.65	RSMP0	\$.45
1 1/2	RSMP5	.70	.....	.....
2	RSMP6	.75	.....	.....
2 1/2	RSMP7	.90	.....	.....

Y Series Condulets

Schedule CR

For Cutouts

Take main line fuse cutouts. Furnished with sheet steel door and cutout fastening plate.

Designed to take wire which will enter grooves or terminals of fuse cutout of the same rating as the Condulet. Hubs are cast solid with and are tangent to back of Condulet.

Cadmium-galvanized is the standard finish.



Size Inches	Std. Pkg.	2-Wire		3-Wire	
		No.	Each	No.	Each
1/2	15	Y1302	\$2.35	.....	.....
3/4	15	Y2302	2.45	Y2303	\$2.95



Size Inches	Std. Pkg.	Type YC		30 Amperes, 250 Volts	
		No.	Each	No.	Each
1/2	15	YC1302	\$2.50	YC1303	\$3.00
3/4	15	YC2302	2.60	YC2303	3.10
1	10	YC3302	2.70	YC3303	3.20
1 1/4	10	YC4302	2.80	YC4303	3.30
60 Amperes, 250 Volts					
3/4	15	YC2602	\$3.80	YC2603	\$4.20
1	10	YC3602	3.90	.....	.....
1 1/4	10	.....	.....	YC4603	4.40

Drilled for seal wire at 10 cents advance in price.

Type YAC Watertight Condulets

Schedule CR

For Cutouts

Take connection blocks, or 2-wire, 30-ampere, 250-volt main line fuse cutouts.

Furnishes compact housing for cutouts or connection blocks. No cutout fastening plate is used, the wiring device being attached directly to bottom of Condulet.

Hubs are cast solid with body and have an integral bushing and tapered thread.

Gasketed doors and adjustable hinges.

Cadmium-galvanized is the standard finish.



Size In.	Std. Pkg.	No.	Each
1/2	15	YAC1302	\$4.00
3/4	15	YAC2302	4.10
1	10	YAC3302	4.20

Type YYC Watertight Condulets

Schedule CR

With Hub Plates—For Cutouts

30 Amperes, 250 Volts

Type YYC



Size Inches	Std. Pkg.	2-Wire		3-Wire	
		No.	Each	No.	Each
1/2	15	YYC1302	\$4.30	.....	.....
3/4	15	YYC2302	4.50	YYC2303	\$5.40
1	10	.....	.....	YYC3303	5.60

Take main line fuse cutouts.

Have doors and hinges of cast Feraloy, and spring catches. Furnished with removable conduit hub plates, and cutout fastening plate.

The removable conduit hub plates provide flexibility in installing.

Cadmium-galvanized is the standard finish.

Type YWC Watertight Condulets

Schedule CR

With Hub Plates—For Cutouts

30 Amperes, 250 Volts



Take main line fuse cutouts.

Furnished with cast Feraloy door, removable conduit hub plates, gaskets, and cutout fastening plate.

These Condulets are watertight. They have gasketed doors with adjustable eyebolt hinges; an eyebolt with a wing nut clamps the door tight. A tubular gasket

is cemented in the door which, when closed, is watertight. Removable conduit hub plates, thoroughly gasketed, are secured to the cast Feraloy body by four screws.

Cadmium-galvanized is the standard finish.

Size Inches	Std. Pkg.	2-Wire		3-Wire	
		No.	Each	No.	Each
1/2	15	YWC1302	\$5.30	YWC2303	\$6.55
3/4	15	YWC2302	5.50	YWC3303	6.75
1	10				

Type YKC Condulets

Schedule CR

For Fusible Knife Switches



Take fusible knife switches.

A removable switch fastening plate permits mounting switch and making connections before it is installed in Condulet. Two accessible fastening screws quickly and effectually secure switch fastening

plate in Condulet. Switch fastening plates are slotted so that most standard makes of switches can be mounted thereon by means of the bolts and nuts furnished with switch fastening plates.

Door is furnished with spring catch. Hubs are cast solid with body and have an integral bushing and tapered thread.

Cadmium-galvanized is the standard finish.

With Sheet Steel Door

30 Amperes, 250 Volts

Size In.	Std. Pkg.	2-Pole		3-Pole	
		No.	Each	No.	Each
1/2	10	YKC1302	\$4.15	YKC1303	\$6.35
3/4	10	YKC2302	4.30	YKC2303	6.50
1	10	YKC3302	4.45	YKC3303	6.65
1 1/4	10	YKC4302	4.60	YKC4303	6.80
1 1/2	10	YKC5302	4.75	YKC5303	6.95

With Cast Feraloy Door

60 Amperes, 250 Volts

Size In.	Std. Pkg.	2-Pole		3-Pole	
		No.	Each	No.	Each
3/4	10	YKC2602	\$11.60	YKC2603	\$12.50
1	10	YKC3602	11.75	YKC3603	12.65
1 1/4	10	YKC4602	11.90	YKC4603	12.80
1 1/2	10	YKC5602	12.05	YKC5603	12.95
2	10	YKC6602	12.20	YKC6603	13.10

Type YKK Knife Switches

Schedule CR

For Type YKC Condulets

Arranged for 250-Volt, N.E.C. Cartridge Fuses



Cap. Amps.	Std. Pkg.	2-Pole		3-Pole	
		No.	Each	No.	Each
30	10	YKK302	\$2.25	YKK303	\$3.75
60	10	YKK602	3.50	YKK603	5.25

Type YKWC Watertight Condulets

Schedule CR

For Fusible Knife Switches



Protect the switches and fuses from mechanical injury and the weather.

A cast Feraloy door, a tubular gasket cemented in a groove, adjustable hinges, and eyebolt and wing nut fastening device make Condulet watertight. Provision is

made for a padlock whereby door can be locked to prevent unauthorized persons tampering with switch. Provision consists of strap with a large hole in it for padlock. When door is closed, end of strap projects through slot in door.

Furnished with removable switch fastening plate which is slotted so that most standard makes of switches can be mounted on it by means of bolts and nuts furnished with switch fastening plate.

Hubs are cast solid with body and have an integral bushing and tapered thread.

Cadmium-galvanized is the standard finish.

Size In.	Std. Pkg.	2-Pole		3-Pole	
		No.	Each	No.	Each
1/2	10	YKWC1302	\$9.75	YKWC1303	\$10.65
3/4	10	YKWC2302	9.90	YKWC2303	10.80
1	10	YKWC3302	10.05	YKWC3303	10.95
1 1/4	10	YKWC4302	10.20	YKWC4303	11.10
1 1/2	10	YKWC5302	10.35	YKWC5303	11.25
60 Amperes, 250 Volts					
3/4	10	YKWC2602	\$12.70	YKWC2603	\$14.70
1	10	YKWC3602	12.85	YKWC3603	14.85
1 1/4	10	YKWC4602	13.00	YKWC4603	15.00
1 1/2	10	YKWC5602	13.15	YKWC5603	15.15
2	10	YKWC6602	13.30	YKWC6603	15.30

FA Series Safety Switch Condulets

Schedule CR

FA Series Condulets are furnished with Crouse-Hinds tumbler switch, cover and gasket.

They are for use in industrial plants or wherever switches would be subjected to unusually severe conditions. The switches are enclosed in Condulets and are externally operated, affording the switch maximum protection from mechanical injury.

The watertight covers are especially adapted for use out-of-doors or wherever dust, moisture, or gases are present. They are provided with a handle for external operation of the switch.

The non-watertight cover is provided with a rim to protect the switch handle which projects through a slot in the cover. The handle is self-indicating and can be furnished with a luminous finder at an advance of 50 cents in the list price.

Cadmium-galvanized is the standard finish.

Type FA

With Guarded Cover

With Watertight Cover



2-Pole, 30-Ampere, 250-Volt or 5-Ampere, 600-Volt



2-Pole, 30-Ampere, 250-Volt or 5-Ampere, 600-Volt

Size In.	Std. Pkg.	"ON" AND "OFF"		Size In.	Std. Pkg.	"ON" AND "OFF"	
		No.	Each			No.	Each
1/2	10	FA129	\$6.25	1/2	10	FA128	\$8.90
3/4	10	FA229	6.35	3/4	10	FA228	9.00
1	10	FA329	6.45	1	10	FA328	9.10
3-Way, 20-Ampere, 125-Volt or 10-Ampere, 250-Volt				3-Way, 20-Ampere, 125-Volt or 10-Ampere, 250-Volt			
1/2	10	FA169	\$6.50	1/2	10	FA168	\$9.15
3/4	10	FA269	6.60	3/4	10	FA268	9.25
1	10	FA369	6.70	1	10	FA368	9.35

FA Series Safety Switch Condulets

Schedule CR

Furnished with Crouse-Hinds tumbler switch, cover and gasket.

Cadmium-galvanized is the standard finish.

Type FAC

With Guarded Cover



2-Pole, 30-Ampere, 250-Volt or 5-Ampere, 600-Volt

With Watertight Cover



2-Pole, 30-Ampere, 250-Volt or 5-Ampere, 600-Volt

"On" AND "Off"			
Size In.	Std. Pkg.	No.	Each
1/2	10	FAC129	\$6.35
3/4	10	FAC229	6.45
1	10	FAC329	6.55

3-Way, 20-Ampere, 125-Volt or 10-Ampere, 250-Volt

1/2	10	FAC169	\$6.60
3/4	10	FAC269	6.70
1	10	FAC369	6.80

"On" AND "Off"			
Size In.	Std. Pkg.	No.	Each
1/2	10	FAC128	\$9.00
3/4	10	FAC228	9.10
1	10	FAC328	9.20

3-Way, 20-Ampere, 125-Volt or 10-Ampere, 250-Volt

1/2	10	FAC168	\$9.25
3/4	10	FAC268	9.35
1	10	FAC368	9.45

Type MK Safety Switch Condulets Without Hub Plates

Schedule CR

250 Volts, 500 Volts A.C.



Take conduit hub plates.

With this safety switch Condulet installed at each motor, repairs can be made to compensator, the motor, or machinery driven by motor, in full confidence that all apparatus beyond switch is completely isolated from power circuit, and will remain so as long as repair man or men may desire, since switch can be locked in off position with either one or two padlocks.

Consists of a line of fusible knife switches in cast Feraloy housings, operated by an outside handle. Door over fuse compartment gives access to fuses, but as this door is interlocked with handle, fuses are accessible only when dead.

Provision for locks has been made so that it is possible to lock switch in off or running position and also to prevent unauthorized persons from opening switch case.

Detachable hub plates make possible various conduit hub arrangements and often facilitate installation.

Furnished with fusible knife switch.

Cadmium-galvanized is the standard finish.

Take Hub Plates Series	Std. Pkg.	30-Ampere		3-Pole	
		No.	Each	No.	Each
MK	5	MK302	\$22.00	MK303	\$28.00
MF	1	.....	.....	MK3035	44.50
60-Ampere					
MF	1	MK602	\$29.50	MK603	\$38.50
MF	1	.....	.....	MK6035	44.50
100-Ampere					
MF	1	MK1002	\$44.50	MK1003	\$75.00
MF	1	.....	.....	MK10035	79.00

Type MKS Condulets without Hub Plates

Schedule CR

Interlocking Safety Switch and Plug Receptacle Condulets

Switch Arranged for Cartridge Fuses

250 Volts, 500 Volts A.C.



Take conduit hub plates and Type DP interlocking plugs.

For use with portable electrical appliances such as welding machines, rivet heaters, motor-driven machines, or for similar purposes where switches and plugs are used.

Consists of a safety switch and a plug receptacle. Receptacle and switch are so interlocked that plug cannot be withdrawn unless switch is open, nor can switch be closed unless plug is fully inserted. Wing nut and eyebolt on housing engage a forked lug on plug handle, so that plug cannot be withdrawn accidentally or due to weight of cable even when switch is open.

Plug contacts are protected by a shell or sleeve which is cast as an integral part of aluminum handle.

Plugs and receptacles are polarized, and contacts are self-aligning. Insulating parts of both plug and receptacle are held in place without use of screws, and cannot become loosened by vibration.

Any type and size of round flexible cable, armored cable, or flexible conduit can be used with any interlocking plug if outside diameter comes within limits specified for that plug. A clamp on plug grips cable or flexible conduit, thereby relieving terminals of any tension.

Not weatherproof and when installed out-of-doors or where exposed to weather, a weatherproof housing should be built around Condulet.

Furnished with fusible knife switch and interlocking plug receptacle with spring door housing.

Cadmium-galvanized is the standard finish.

No.	2-Pole		30-Ampere		Std. Pkg.
	Each	No.	Each	3-Pole	
MKS1632	\$39.00	MKS1633	\$45.80	5	
.....	.....	MKS16335	62.70	1
60-Ampere					
MKS1662	\$47.00	MKS1663	\$56.70	1	
.....	.....	MKS16635	62.70	1
100-Ampere					
MKS16102	\$84.00	MKS16103	\$116.30	1	
.....	.....	MKS161035	120.30	1

If specified, will be furnished without spring door at the following reductions in list prices: 30-ampere, 125 or 250-volt, \$1.25; 30-ampere, 500-volt a.c., \$1.75; 60-ampere, \$1.75; 100-ampere, \$2.50.

Type DP Plugs

Schedule CR

Interlocking—For Type MKS Condulets



For Small Cable



For Large Cable

Furnished with clamp for cord, cable, flexible conduit, or armored conductor, and handles.

Cadmium-galvanized is the standard finish.

30 Amperes, *250 Volts

O.D. Cable, Flex. Conduit, or Armored Conductor, In.	Std. Pkg.	2-Pole		3-Pole	
		No.	Each	No.	Each
.500 to .875	5	DP132	\$6.50	DP133	\$7.00
.750 to 1.188	5	DP332	6.50	DP333	7.00
60 Amperes, 250 Volts					
.750 to 1.188	5	DP162	\$7.50	DP163	\$8.00
1.188 to 1.813	5	DP362	7.50	DP363	8.00
100 Amperes, 250 Volts					
.938 to 1.469	1	DP1102	\$20.00	DP1103	\$22.00
1.313 to 2.063	1	DP3102	20.00	DP3103	22.00

*Use 250-volt plugs with 125-volt receptacles.

Conduit Hub Plates

Schedule CR

For Types MK and MKS Condulets

Cadmium-galvanized is the standard finish.

MK Series has dimensions of 2 3/8 x 5 inches. For 60, 100, 125 and 250-volt Condulets.

MF Series has dimensions of 2 5/8 x 6 1/8 inches. For 60, 100, and 200-ampere, 250-volt and all 500-volt a.c. Condulets.

With One Hub

Size In.	Std. Pkg.	MK Series No.	Each	MF Series No.	Each
1/2	15	MK1	\$.45	MF1	\$.95
3/4	15	MK2	.55	MF2	1.05
1	15	MK3	.65	MF3	1.15
1 1/4	15	MK4	.75	MF4	1.25
1 1/2	15	MK5	.85	MF5	1.35
...	15	Blank	\$.30	MF00	\$.85



Type FSQ Interlocking Safety Switch Condulets

Schedule CR

For use with small portable electrical appliances such as hand lamps and portable tools, or for similar purposes where interlocked switches and plugs are desirable.

Switch is a standard 20-ampere, 2-pole, single-throw tumbler switch which operates in a vaportight compartment.

Switch operating handle interlocks with receptacle compartment cover so that cover cannot be opened and plug inserted or withdrawn unless switch is in off position.

Third or grounded terminal of receptacle and plug are for connection of third wire, which can be included in cable as a grounding wire for portable device.

In addition to twist lock feature of plug, adjusting screw is provided in receptacle compartment cover so that when cover is closed, plug cannot be pulled out of full contact by cable, even though twist lock feature is not utilized. Plug is provided with effective cable grip and strain relief.

Furnished with tumbler switch, vaportight cover, Hubbell 3-pole twist lock receptacle, and Hubbell 3-pole twist lock plug.

Cadmium-galvanized is the standard finish.

Size, In.	Std. Pkg.	No.	Each
3/4	10	FSQ28	\$12.00

ZT Series Watertight Safety Switch Condulets without Hub Plates

Schedule CR

Take plug or cartridge fuses, and conduit hub plates or plug receptacle housings.

Handle is so interlocked with fused door of Type ZT that door cannot be opened until switch is opened, nor can switch be closed until door is closed. As machine operator can change fuses in this Condulet with perfect safety, its use prevents loss in productive time which is unavoidable when electrician

must be sent for to replace fuses.

Furnished with tumbler switch, cover with fuse door, and gaskets for hub plates.

Cadmium-galvanized is the standard finish.

Standard package, 5.



No.	Each	Max. Line Voltage	Max. Hp. Motor	Max. Amp. Non-Inductive Poles No.	No. AND KIND OF FUSES Description	Take Hub Plates No.	Take Plug Receptacle Housings No.
ZT12	\$20.00	125	{*3 D.C.}	30	2 2	1 Plug	YYP7 BRY7
ZT13	25.00	125	{3/4 A.C.}	30	3 3		
ZT22	20.00	250	{*5 D.C.}	30	2 2	250-V. Cart.	YYP7 BRY7
ZT23	25.00	250	{2 A.C.}	30	3 3		
ZT235	30.00	500 A.C.	2	30	3 3	600-V. Cart.	YYP7 BRY7
ZT237	30.00	600 A.C.	2	20	3 3		

*Maximum hp. when used with d. c. starting box.

If specified, will be furnished with key-operated interlock release at advance of \$2.50. This permits authorized persons to operate switch for inspection with fuse door open.

Type LG Gauge Lamps

Schedule CR

Take lamps in A17, S14, or S17 bulb.

For housing the lamps illuminating steam and air gauges (single and multiple), water glass, and lubricator.

With hinged doors held in place by a spring catch, giving access to the interior. Bottom is tapped for 5/8-inch bolt for attaching to a bracket on the boiler head or in the cab.

Cast aluminum.

Furnished with composition lamp receptacle with lamp grip.

A—Size of hub for rigid conduit.

B—Outside diameter of round cord or cable. (Gauge lamp furnished with tapered rubber bushing and gland nut.)



Water Glass Lamps

Vertical Slot

Size Inches	Std. Pkg.	No.	Each
A—1/2	10	LG21	\$3.50
B—.375 to .438	10	LG23	3.50



Lubricator Lamps

13-Inch Slot

Size Inches	Std. Pkg.	No.	Each
A—1/2	10	LG31	\$5.00
B—.375 to .438	10	LG33	5.00



Single Steam and Air Gauge Lamps

Round Opening

Size Inches	Std. Pkg.	No.	Each
A—1/2	10	LG11	\$3.50
B—.375 to .438	10	LG13	3.50

Type AF Mine Signal Switches

Schedule CR

A single-pole, double make, quick break, mine signal pull switch. The normal position is open. Spring is packed in grease and will support the weight indicated in the column Initial Pull without starting to close the switch. The weight indicated in the column Final Pull is required to operate the switch, but this includes the weight of pull rope.

Switch is enclosed in a sturdy water-shedding housing and is fastened to it by four cap screws.

Wires enter through clearance holes in flange on switch mechanism.

All insulating parts are of high grade material.

Cadmium-galvanized is the standard finish.

No.	Each	*Initial Pull Lb.	†Final Pull Lb.	Total Wt. Pounds Pull Rope Including Moisture	Additional Pull Req. to Operate Switch Pounds	Std. Pkg. Assorted
AF7	\$10.00	7	10	7 to 0	3 to 10	10
AF10	10.00	10	15	10 to 0	5 to 15	10
AF15	10.00	15	25	15 to 0	10 to 25	10
AF25	10.00	25	50	25 to 0	25 to 50	10

*Or initial compression of spring. This is the weight of rope that the spring will support without movement. The weight of the moisture in rope must be considered in estimating its weight.

†Or total pull necessary to compress spring against its stop, including weight of pull-rope. Plunger moves about 1/2 inch between its stops.



Type CGB Connectors

Schedule CR

Straight—Male Thread



The smaller sizes of connectors are made of steel; larger sizes, of cast Feraloy. Cadmium-galvanized is the standard finish for cast Feraloy.

With Tapered Rubber Bushing

*SCHEDULE 1.—For connecting round flexible cord or cable to Condulets, outlet boxes, plug handles, or rigid conduit. Cord or cable will pass entirely through the connector without removing outer covering.

No.	Each	SIZE, INCHES			Std. Pkg.
		A	B	C	
CGB3892	\$.65	†.125 to .250	3/8	15/32	50
CGB192	.65	†.125 to .250	1/2	19/32	50
CGB292	.65	†.125 to .250	3/4	11/16	50
CGB3893	.65	†.250 to .375	3/8	15/32	50
CGB193	.65	†.250 to .375	1/2	19/32	50
CGB293	.65	†.250 to .375	3/4	11/16	50
CGB3894	.65	†.375 to .438	3/8	15/32	50
CGB194	.65	†.375 to .500	1/2	19/32	50
CGB294	.65	†.375 to .500	3/4	11/16	50
CGB295	.65	†.500 to .625	3/4	11/16	50
CGB395	1.00	†.500 to .625	1	15/16	50
CGB396	1.00	†.625 to .750	1	15/16	50
CGB397	1.00	†.750 to .875	1	15/16	25

With Tapered Rubber Bushing

*SCHEDULE 2.—For connecting round flexible cord or cable to Condulets, outlet boxes, or rigid conduit. Cord or cable will not pass through the connector without removing outer covering.

No.	Each	SIZE, INCHES			Std. Pkg.
		A	B	C	
CGB3894	\$.65	†.438 to .500	3/8	15/32	50
CGB195	.65	†.500 to .625	1/2	19/32	50
CGB196	1.00	†.625 to .750	1/2	19/32	50
CGB296	1.00	†.625 to .750	3/4	11/16	50
CGB197	1.00	†.750 to .875	1/2	19/32	25
CGB297	1.00	†.750 to .875	3/4	11/16	25
CGB298	1.45	†.875 to 1.000	3/4	11/16	25
CGB398	1.45	†.875 to 1.000	1	15/16	25
CGB299	1.45	†1.000 to 1.188	3/4	11/16	25
CGB399	1.45	†1.000 to 1.188	1	15/16	25

With Tapered Split Lead Sleeve

*SCHEDULE 3.—For connecting armored cable or flexible conduit to Condulets, outlet boxes, plug handles, or rigid conduit. Armored cable or flexible conduit will pass entirely through the connector.

No.	Each	SIZE, INCHES			Std. Pkg.
		A	B	C	
CGB3884	\$.65	†.375 to .438	3/8	15/32	50
CGB184	.65	†.375 to .500	1/2	19/32	50
CGB284	.65	†.375 to .500	3/4	11/16	50
CGB185	.65	†.500 to .563	1/2	19/32	50
CGB285	.65	†.500 to .625	3/4	11/16	50
CGB386	1.00	†.625 to .781	1	15/16	50
CGB387	1.00	†.781 to .938	1	15/16	25

With Tapered Split Lead Sleeve

*SCHEDULE 4.—For connecting armored cable or flexible conduit to Condulets, outlet boxes, plug handles, or rigid conduit. Armored cable or flexible conduit will not pass through the connector without removing outer covering.

No.	Each	SIZE, INCHES			Std. Pkg.
		A	B	C	
CGB3884	\$.65	†.438 to .500	3/8	15/32	50
CGB3885	.65	†.500 to .625	3/8	15/32	50
CGB185	.65	†.563 to .625	1/2	19/32	50
CGB186	1.00	†.625 to .781	1/2	19/32	50
CGB286	1.00	†.625 to .781	3/4	11/16	50
CGB187	1.00	†.781 to .938	1/2	19/32	25
CGB287	1.00	†.781 to .938	3/4	11/16	25
CGB289	1.45	†.938 to 1.156	3/4	11/16	25
CGB389	1.45	†.938 to 1.156	1	15/16	25

*Use schedule numbers for identification of connectors when consulting Underwriters' Laboratories' list of inspected electrical appliances.

†A—Inside diameter in inches of rubber bushing which takes round flexible cord or cable.

†A—Inside diameter in inches of split lead sleeve which takes armored cable, or flexible conduit.

§B—Size in inches of Condulet hub with which connectors can be used.

||C—Inside diameter of hole through nipple of connectors.

Type CG Watertight Stuffing Boxes

Schedule CR

A watertight stuffing box for the passage of conduit through the decks or bulkheads of ships, or where vapor, moisture, or gases are present.

Can be used with bulkheads or partitions from 1/4 to 1 1/8 inches in thickness.

Gasket between flange of stuffing box and bulkhead and the packing around the conduit in stuffing box, make joints watertight.

Conduit passes through stuffing box and is not threaded into it.

Furnished with nuts, washer, double canvas gasket, and flax packing.

Cadmium-galvanized is the standard finish.



Size In.	Std. Pkg.	No.	Each
1/4	25	CG1	\$1.25
3/4	25	CG2	1.50
1	25	CG3	1.75

Type CCB Flexible Conduit Couplings

Schedule CR

Male Thread

For connecting flexible conduit to Condulets.

A—Size in inches of flexible conduit with which coupling can be used.

B—Size in inches of Condulet hub with which coupling can be used.

C—Inside diameter of hole through nipple of coupling.

A	SIZE, INCHES			Std. Pkg.	No.	Each
	B	C				
3/8	3/8	11/32	100	CCB30838	\$.30	
3/8	1/2	7/16	100	CCB138	.30	
1/2	1/2	7/16	100	CCB11	.30	
1/2	3/4	5/8	50	CCB21	.40	
3/4	3/4	5/8	50	CCB22	.40	
*1 S.S. 1		13/16	25	CCB33	.50	
†1 D.S. 1		13/16	25	CCB332	.50	

*Take 1-inch Flexsteel single strip, 1-inch Triangle single strip, and 1-inch Federal metal hose.

†Takes 1-inch Greenfield single and double strip, and 1-inch Flexsteel double strip.

Threaded Condulet Reducers

Schedule CR



Made of cast Feraloy and steel. Cadmium-galvanized is the standard finish.

Size In.	Std. Pkg.	No.	Each	Size In.	Std. Pkg.	No.	Each
1/4-1/8	50	RE2818	\$.15	1 1/4-1	50	RE43	\$.30
3/8-1/8	50	RE3818	.15	1 1/2-1/2	50	RE51	.40
3/8-1/4	50	RE3828	.15	1 1/2-3/4	50	RE52	.40
1/2-1/8	50	RE1108	.15	1 1/2-1	50	RE53	.40
1/2-1/4	50	RE1208	.15	1 1/2-1 1/4	50	RE54	.40
1/2-3/8	50	RE1308	.15	2-1/2	25	RE61	.50
3/4-1/2	50	RE21	.15	2-3/4	25	RE62	.50
1-1/2	50	RE31	.20	2-1	25	RE63	.50
1-3/4	50	RE32	.20	2-1 1/4	25	RE64	.50
1 1/4-1 1/2	50	RE41	.30	2-1 1/2	25	RE65	.50
1 1/4-3/4	50	RE42	.30				

Threadless Condulet Reducers

Schedule CR

For Threadless Condulets



To assemble threadless reducer with a threadless Condulet, remove grip ring from nut of the Condulet, and substitute reducer for it.

Made of cast Feraloy and steel. Cadmium-galvanized is the standard finish.

Size Inches	Std. Pkg.	Thick Wall		Thin Wall	
		No.	Each	No.	Each
3/4-1/2	50	RE291	\$.29	RE241	\$.24
1-1/2	50	RE391	.38	RE341	.34
1-3/4	50	RE392	.43	RE342	.43

Threadless Connectors and Couplings

Schedule CM

Cast Feraloy and steel. Cadmium-galvanized is the standard finish.



1/2 to 1 Inch

1/4 to 2 Inch

Type UCA Connectors

Watertight Connectors—Thin Wall

Size In.	Std. Pkg.	Car-ton	No.	Per 100
1/2	200	50	UCA174	.....
3/4	100	25	UCA274	.....
1	50	10	UCA374	.....
1 1/4	25	5	UCA474	.....
1 1/2	10	5	UCA574	.....
2	5	2	UCA674	.....

Super Watertight Connectors—Thin Wall

1/2	200	50	UCA164	.....
3/4	100	25	UCA264	.....
1	50	10	UCA364	.....
1 1/4	25	5	UCA464	.....
1 1/2	10	5	UCA564	.....
2	5	2	UCA664	.....

Regular Connectors—Thick Wall

1/2	100	50	UCA1	.....
3/4	50	25	UCA2	.....
1	25	5	UCA3	.....



1/2 to 1 Inch

1/4 to 2 Inch

Type UCC Couplings

Watertight Couplings—Thin Wall

1/2	200	50	UCC14	.....
3/4	100	25	UCC24	.....
1	50	10	UCC34	.....
1 1/4	25	5	UCC44	.....
1 1/2	10	5	UCC54	.....
2	5	2	UCC64	.....

Super Watertight Couplings—Thin Wall

1/2	200	50	UCC164	.....
3/4	100	25	UCC264	.....
1	50	10	UCC364	.....
1 1/4	25	5	UCC464	.....
1 1/2	10	5	UCC564	.....
2	5	2	UCC664	.....

Regular Couplings—Thick Wall

1/2	100	50	UCC1	.....
3/4	50	25	UCC2	.....
1	25	5	UCC3	.....



Thin Wall

Thick Wall

Type UCB Connectors

Thin Wall

1/2	200	50	UCB14	.....
3/4	100	25	UCB24	.....
1	50	10	UCB34	.....
1 1/4	25	5	UCB44	.....
1 1/2	10	5	UCB54	.....

Thick Wall

1/2	100	50	UCB1	.....
3/4	50	25	UCB2	.....
1	25	5	UCB3	.....

Type EL Condulet Elbows

Schedule CR

Female—For Threadless Conduit

Cadmium-galvanized is the standard finish.



Size In.	For Thick Wall		For Thin Wall	
	No.	Each	No.	Each
1/2	EL191	\$.40	EL192	\$.40
3/4	EL291	.50	EL292	.50

Type UCT Adapters

Schedule CR

For electrical metallic tubing which has the same inside diameter as the corresponding size of standard rigid conduit; therefore, the outside diameter of E.M.T. is considerably less than corresponding sizes of standard rigid conduit. This gives an opportunity for use of an adapter in standard Condulet threaded hubs. Type UCT screws into tapered threaded hub of Condulet and securely grips E.M.T.

May be used to connect electrical metallic tubing not only to Condulets, but also to Condulet elbows, Condulet unions, Condulet reducers, threaded pipe couplings, or to any fitting that has a standard female tapered pipe thread of the corresponding size. Thus, a standard conduit coupling and two Type UCT adapters make a coupling suitable for use with electrical metallic tubing.

Cadmium-galvanized is the standard finish.

Size In.	Std. Pkg.	No.	Per 100
1/2	200	UCT1	\$4.50
3/4	100	UCT2	6.80
1	50	UCT3	11.20

Type UCE Conduit End Bushings

Schedule CR

Cadmium-galvanized is the standard finish.

Size In.	Std. Pkg.	Threaded		Threadless			
		For Thick Wall	For Thin Wall	For Thick Wall	For Thin Wall		
1/2	100	UCE1	\$.25	UCE19	\$.35	UCE14	\$.35
3/4	75	UCE2	.35	UCE29	.45	UCE24	.45
1	50	UCE3	.50	UCE39	.65	UCE34	.65
1 1/4	40	UCE4	.65	UCE49	.90	UCE44	.90
1 1/2	20	UCE5	.90	UCE59	1.25	UCE54	1.25
2	15	UCE6	1.20	UCE69	1.80	UCE64	1.80
2 1/2	10	UCE7	1.65	UCE79	2.55	.....	.....
3	5	UCE8	4.00	UCE89	5.15	.....	.....

Condulet Unions

Schedule CR

Cadmium-galvanized is the standard finish.

Type UNY—Male

For connecting conduit to a Condulet.

Size Inches	Std. Pkg.	DIMEN., IN.		No.	Each
		Length	Diam.		
1/2	50	2 1/8	1 1/2	UNY1	\$.45
3/4 to 1/2	50	2 1/8	1 3/4	UNY21	.45
3/4	50	2 1/8	1 3/4	UNY2	.50
1	25	2 5/8	2 1/8	UNY3	.75
1 1/4	25	2 5/8	2 1/8	UNY4	1.20
1 1/2	25	3 1/8	3 1/8	UNY5	1.80
2	10	3 1/4	3 1/8	UNY6	2.75

Type UNF—Female

For connecting conduit to conduit.

1/2	50	UNF1	\$.45
3/4 to 1/2	50	UNF21	.45
3/4	50	UNF2	.50
1	25	UNF3	.75
1 1/4	25	UNF4	1.20
1 1/2	25	UNF5	1.80
2	10	UNF6	2.75

*Male end is given first.

Type UNA Connectors and Unions

Schedule CE

A convenient coupling or union for conduit joints made at angles from 90° to 180°. A single clamping nut provides a union feature as well as easy adjustment to required angles.

Unless a Type UNA universal union is placed at or near an outlet, or unless it is installed at an angle of about 140° to 180°, it may prove to be difficult to fish wires through union. For this reason, these devices are not approved as conduit unions for general use.

Cadmium-galvanized is the standard finish.

Box Connectors—Male

For use only if adjacent to a Condulet. Explosion-proof and dust-tight.



Size In.	Std. Pkg.	DIMEN., IN.		No.	Each
		Length	Width		
1/2	25	2 1/2	2 1/2	UNA16	\$1.45
3/4	25	4 1/2	2 7/8	UNA26	1.75
1	10	5 1/4	3 1/2	UNA36	2.00

Universal Unions—Female

1/2	25	UNA1	\$1.30
3/4	25	UNA2	1.45
1	10	UNA3	1.75

Wedgtite Pipe Hangers

Schedule CR

***Furnished with Wedge CHWI**

Wedgtite Pipe Hangers are quickly and easily installed as only a few blows of a hammer are necessary. They can be used with any I-beam, channel, or other structural shape having a lower flange $\frac{1}{8}$ to $\frac{3}{8}$ inch thick. They consist of two pieces, a hook and a wedge, which is provided with saw teeth so that vibration will not loosen it. The wedge is interchangeable with all types and sizes of hooks.

Also may be used in connection with water pipes, steam pipes, and sprinkler systems.

Made so that one end hooks under pipe and other over flange of supporting steel beam. End that hooks over flange has a groove into which the wedge is driven, tightly drawing pipe against flange and securely holding it in position.

Hanger is made of malleable iron, the wedge of hardened steel.

Type CHP Hangers



For pipe running parallel with supporting steel beam.

Size In.	Std. Pkg.	No.	Each
$\frac{1}{2}$	100	CHP1	\$.40
$\frac{3}{4}$	100	CHP2	.45
1	100	CHP3	.50
$1\frac{1}{4}$	100	CHP4	.55
$1\frac{1}{2}$	100	CHP5	.60
2	100	CHP6	.65

Type CHR Hangers



For pipe running at right angles to supporting steel beam.

Size In.	Std. Pkg.	No.	Each
$\frac{1}{2}$	100	CHR1	\$.40
$\frac{3}{4}$	100	CHR2	.45
1	100	CHR3	.50
$1\frac{1}{4}$	100	CHR4	.55
$1\frac{1}{2}$	100	CHR5	.60
2	100	CHR6	.65

*Teeth of wedge must be installed against girder.

If specified, wedge CHW2 furnished at same list price.

Type CUC Sign Condulets

Schedule CR

Used for lighting a bracket support on sign posts or arms. Has a malleable iron clamp held by two screws for securing Condulet to pipe. Gasket provided makes a watertight joint between the Condulet and pipe. A threaded dome cover provides access to wires and splices and makes a watertight enclosure. Has a bushing that extends into pipe through a $\frac{1}{16}$ -inch hole drilled in pipe.

Cadmium-galvanized is the standard finish.



Support Pipe	Bracket Arms	Std. Pkg.	No.	Each
1	$\frac{1}{2}$	10	CUC13	\$1.00
$1\frac{1}{4}$	$\frac{1}{2}$	10	CUC14	1.05
$1\frac{1}{2}$	$\frac{1}{2}$	10	CUC15	1.10
2	$\frac{1}{2}$	10	CUC16	1.15
$2\frac{1}{2}$	$\frac{1}{2}$	10	CUC17	1.20
1	$\frac{3}{4}$	10	CUC23	1.10
$1\frac{1}{4}$	$\frac{3}{4}$	10	CUC24	1.15
$1\frac{1}{2}$	$\frac{3}{4}$	10	CUC25	1.20
2	$\frac{3}{4}$	10	CUC26	1.25

Type PED Condulet Pedestals

Schedule CR
Threaded

Furnish a rigid support with threaded hub for feeder conduit which comes through floor. Feeder conduit threads into lower hub inside pedestal. Upper hub of pedestal may be used to take a connector such as Type CGB with flexible conduit or armored cable for connection to control switch Condulet mounted on frame of machine, or upper hub of pedestal may be used to take a threaded stem of conduit for independent support of a control switch Condulet at a convenient height from floor. Flange of Condulet pedestal has four holes for fastening bolts or screws.

Cadmium-galvanized is the standard finish.



Size In.	Height In.	Std. Pkg.	No.	Each
$\frac{3}{4}$	3	25	PED223	\$1.20
1	3	25	PED333	1.45
$1\frac{1}{4}$	3	25	PED443	1.70

Groundulet Safety Circuit Equipment

Schedule CM

Cadmium-galvanized is the standard finish.

Type GCH

For Threaded Heavy Wall Conduit—With Swivel Feature

For use where conduit is employed to protect the grounding conductor. Grounding conductor is connected to conduit-hub part by swivel bolt. Conduit can be brought in from any angle. Malleable.



SIZE, INCHES		O.D. Grounding Electrode	Car-ton	Std. Pkg.	No.	Per 100
Conduit	Water Pipe	$\frac{1}{2}$ to 1	5	25	GCH1	....

Type GCH With Clamp Connection for Ground Conductor

For Nos. 8, 6, or 4 Armored or Unarmored Ground Conductor

In this type the grounding conductor passes through the bolt and is clamped between the under side of bolthead and upper face of square cavity. A set screw holds armor in place and effectively grounds it to clamp. Malleable.



SIZE, INCHES		O.D. Grounding Electrode	Car-ton	Std. Pkg.	No.	Per 100
Water Pipe	$\frac{1}{2}$ to 1	$\frac{1}{2}$ to 1	5	25	GCH08	....

For Nos. 8, 6, or 4 Unarmored Ground Conductor or Insulated Building Wire

$\frac{1}{2}$ to 1	$\frac{1}{2}$ to 1	5	25	GCH91
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Type GCA

For Threaded Heavy Wall Conduit



Malleable.

Conduit or Wire	Water Pipe	Grounding Electrode	Straps	Car-ton	Std. Pkg.	No.	Per 100
$\frac{1}{2}$	$\frac{1}{2}$ to 2	$\frac{5}{8}$ to 1	1	5	25	GCA172	....

Type GCD Angle Adjustment

For Threaded Heavy Wall Conduit



Malleable.

$\frac{1}{2}$	$\frac{1}{2}$ to 2	$\frac{5}{8}$ to 1	1	5	25	GCD172	....
$\frac{3}{4}$	$\frac{1}{2}$ to 2	$\frac{5}{8}$ to 1	2	5	20	GCD22	....
1	$\frac{1}{2}$ to 2	$\frac{5}{8}$ to 1	3	5	10	GCD32	....

Type GC

For Open Ground Wire



Malleable.

4	$\frac{1}{2}$ to 1	$\frac{5}{8}$ to 1	1	10	50	GC91	....
4	$\frac{1}{2}$ to 2	$\frac{5}{8}$ to 1	1	10	50	GC92	....
00	$\frac{1}{2}$ to 2	$\frac{5}{8}$ to 1	2	5	25	GC922	....

Type GC Strap Clamps

For bonding and grounding equipment in interior wiring systems.



Steel brass.	Per 100	Carton	Std. Pkg.
No.			
GC101	25	100
GC102	25	100

Type GC Grounding Straps

For bonding and grounding equipment in interior wiring systems.

Flexible copper, tinned.
Length coil, 50 feet.



No. GC100.....per coil

*For use also on lead pipe in sizes $\frac{1}{2}$ and $\frac{3}{4}$ -inch Grades AA and AAA, and 1-inch Grades A, AA, and AAA.

Groundulet Safety Circuit Equipment

Schedule CM

All conduits entering a service box must be properly bonded to it by bonding jumpers, ground clamps, lugs or devices approved for the purpose.

Type GC Groundulet bushings and jumpers make dependable and approved bonding connections. The bushings provide a means for connecting bonding jumpers to them.

The bonding jumpers being within the cabinet, are protected from mechanical injury and all fire hazard is confined within the cabinet.

Cadmium-galvanized is the standard finish.

Type GC Bushings

Brass—Without Cap Screw, Lug or Wire Clip

Size In.	Car-ton	Std. Pkg.	No.	Per 100
1/2	50	100	GC151	.....
3/4	50	100	GC152	.....
1	25	50	GC153	.....
1 1/4	25	50	GC154	.....
1 1/2	25	50	GC155	.....
2	10	25	GC156	.....



Without Cap Screw, Lug, or Wire Clip

Brass—With Cap Screw and Wire Clip

Size In.	Car-ton	Std. Pkg.	No.	Per 100
1/2	50	100	GC251	.....
3/4	50	100	GC252	.....
1	25	50	GC253	.....
1 1/4	25	50	GC254	.....
1 1/2	25	50	GC255	.....



With Cap Screw and Wire Clip

Malleable—With Cap Screw and Wire Clip

Size In.	Car-ton	Std. Pkg.	No.	Per 100
1/2	50	100	GC231	.....
3/4	50	100	GC232	.....
1	25	50	GC233	.....
1 1/4	25	50	GC234	.....
1 1/2	25	50	GC235	.....

Brass—With Cap Screw and Lug

Size In.	Car-ton	Std. Pkg.	No.	Per 100
2	10	25	GC256	.....
2 1/2	5	10	GC277	.....
3	5	10	GC278	.....



With Cap Screw and Lug

Malleable—With Cap Screw and Lug

Size In.	Car-ton	Std. Pkg.	No.	Per 100
2	10	25	GC236	.....
2 1/2	5	10	GC237	.....
3	5	10	GC238	.....

Malleable—With Grounding Screw

For bonding without jumper wires.

Size In.	Car-ton	Std. Pkg.	No.	Per 100
1/2	50	100	GC61	.....
3/4	50	100	GC62	.....
1	25	50	GC63	.....
1 1/4	25	50	GC64	.....
1 1/2	25	50	GC65	.....
2	10	25	GC66	.....



With Grounding Screw

Type GCE Strap Clamp Terminals

Water Pipe	Size, Inches	Grounding Electrode	Car-ton	Std. Pkg.	No.	Per 100
1/2 to 2	5/8 to 1	10	50	GCE012	.....	.....
1/2 to 4	5/8 to 1	10	50	GCE014	.....	.....
1/2 to 6	5/8 to 1	10	50	GCE016	.....	.....



Service Entrance Conduit Fittings

Schedule CM

For Threaded Heavy Wall Conduit

Cadmium-galvanized is the standard finish.

*Type F Service Entrance Caps Form 8



Furnished with split composition cover with holes for 2-wire service, and knock-outs for 3 or 4-wire service.

Size In.	Car-ton	Std. Pkg.	No.	Per 100
1/2	5	50	F184	.....
3/4	5	50	F284	.....
1	2	20	F384	.....
1 1/4	1	10	F484	.....
1 1/2	1	5	F584	.....
2	1	5	F684	.....

*Type F Service Entrance Caps Form 6



Furnished with composition cover for 2 or 3-wire service. Four-wire covers can be furnished at the same price.

Size In.	Car-ton	Std. Pkg.	No.	Per 100
2 1/2	1	1	F763	.....
3	1	1	F863	.....
3 1/2	1	1	F963	.....
4	1	1	F1063	.....

*For any wiring arrangement differing from those listed, information will be furnished upon request.

Type LB Service Entrance Elbows Form 6



Furnished with blank cast Feraloy cover and break neck locking screw.

Size In.	Car-ton	Std. Pkg.	No.	Per 100
1/2	5	50	LB16	.....
3/4	5	50	LB26	.....
1	5	25	LB36	.....
1 1/4	5	10	LB46	.....
1 1/2	1	5	LB56	.....
2	1	1	LB666	.....
2 1/2	1	1	LB76	.....

Type LBC Service Entrance Tees Form 6



For driven grounds. Furnished with blank cast Feraloy cover and break neck locking screw. Hubs in illustration are 1/2 inch.

Size In.	Car-ton	Std. Pkg.	No.	Per 100
3/4	10	25	LBC216	.....
1	10	25	LBC316	.....
1 1/4	5	10	LBC416	.....

Service Entrance and End Fittings

Schedule CM

For Threaded Heavy Wall Conduit

Cadmium-galvanized is the standard finish.

Type FBA End Fittings



Furnished with composition cover for 2, 3, or 4-wire service.

Size In.	Car-ton	Std. Pkg.	No.	Per 100
1/2	25	100	FBA1	.....
3/4	25	100	FBA2	.....
1	5	50	FBA3	.....
1 1/4	5	25	FBA4	.....

Type FBB End Fittings



Furnished with composition cover for 2, 3, or 4-wire service.

Size In.	Car-ton	Std. Pkg.	No.	Per 100
1/2	5	50	FBB1	.....
3/4	5	50	FBB2	.....
1	5	30	FBB3	.....
1 1/4	5	25	FBB4	.....

Service Entrance Conduit Fittings

Schedule CM

For Threaded Heavy Wall Conduit

Type LBY Elbows

Furnished with cast screw cover.
Cadmium-galvanized is the standard finish.

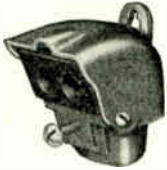


Size In.	Car-ton	Std. Pkg.	No.	Per 100
1/2	5	50	LBY1	....
3/4	5	50	LBY2	....
1	5	25	LBY3	....
1 1/4	5	10	LBY4	....
1 1/2	2	5	LBY5	....

Type FEE Service Entrance Caps

Schedule CM

Caps for 3-conductor oval or 2-conductor round bare neutral service entrance concentric cable.



Cast aluminum.

No.	Per 100	*MAX. DIMEN. OF CABLE, IN.		†DIMEN. OF CABLE, IN.		Car-Std. Min. ton Pkg.				
		Oval	Round	Oval	Round					
FEE8594x	.781	.594	.531x	.718	.250	5	50	
FEE4750x	1.000	.750	.687x	.937	.687	.375	5	50
FEE2844x	1.281	.844	.750x	1.187	.750	.500	2	5

*Over insulation.

†Over armor or concentric bare neutral after removing outer insulation.

Type CGY Service Entrance Connectors

Schedule CM

2-Screw Compression Clamp Type



This connector meets the requirements of watertightness and resistance to corrosion, the two most important requirements of a service entrance cable connector.

Screws are reversible which means they may be threaded in from either direction, making heads accessible under all conditions of installation.

Non-ferrous metal, corrosion-resistant alloy, and chromium-plated steel clamping screws.

No.	Per 100	Round Cable				Size Thrd. Nipple In.	No. of Cap	Car-ton	Std. Pkg.
		TYPE SE CABLE WITH ARMORED OR UNARMORED BARE NEUTRAL CONDUCTORS		*Size					
		No. Insulated	Uninsulated	Size	*Size				
CGY2282	2	8	8	3/4	FEE8	10	100	
CGY3412	2	8	8	1	FEE8	10	100	
CGY2282	2	6	8	3/4	FEE4	10	100	
CGY3412	2	6	8	1	FEE4	10	100	
CGY2272	2	6	6	3/4	FEE4	10	100	
CGY2412	3	12 or 10	12 or 10	3/4	FEE8	10	100	
CGY2352	3	8	8	3/4	FEE8	10	100	
CGY3402	3	8	8	1	FEE8	10	100	
CGY3352	3	6	8 or 6	1	FEE4	10	100	

Threaded Compression Nut Type



For use with cables where they enter the service box or meter cabinet in the building, or the bases for outdoor meters that have recently become popular in connection with this type of service entrance cable.
Made of malleable iron.

No.	Per 100	Round Cable				Size Thrd. Nipple In.	No. of Cap	Car-ton	Std. Pkg.
		TYPE SE CABLE WITH ARMORED BARE NEUTRAL CONDUCTORS		*Size					
		No. Insulated	Uninsulated	Size	*Size				
CGY221	2	12	12	3/4	FEE8	10	100	
CGY229	2	10	10	3/4	FEE8	10	100	
CGY228	2	8	8	3/4	FEE8	10	100	
CGY227	2	6	8	3/4	FEE4	10	100	
CGY342	2	6	8 or 6	1	FEE4	10	100	
CGY227	2	6	6	3/4	FEE4	10	100	
CGY241	3	12 or 10	12 or 10	3/4	FEE8	10	100	
CGY235	3	8	8	3/4	FEE8	10	100	
CGY340	3	8	8	1	FEE8	10	100	
CGY335	3	6	8 or 6	1	FEE4	10	100	

*Neutral concentric conductor.

Type FEA Service Entrance Condulets

Schedule CR

For Third Rail Feeder

Takes composition cover.

Single conductor feed wires or cables such as are required in third rail systems and overhead trolley lines, when enclosed in conduit, require an outlet that is water-shedding, and of easy access for installing the cable.



Body of Type FEA Condulet is designed so as to form a drip loop in cable, thus preventing water seeping into conduit and eventually breaking down the insulation and causing trouble.

A removable cap permits easy installation of cable.

Composition cover protects cable from abrasion or grounding. Cadmium-galvanized is the standard finish.

Size, In.	Std. Pkg.	No.	Each
2 1/2	5	FEA7	\$7.00

Covers for Type FEA Condulet

Schedule CR



Material Composition	Diam. Hole In.	Std. Pkg.	No.	Each
	1 3/4	5	CF174	\$.75

GUA Series Junction Condulets

Schedule CF

Explosion-Proof and Dust-Tight

For general wiring purposes in hazardous locations. May serve two purposes: As a pull box or to make taps or splices, and as a sealing fitting.

Seal wire applied by drilling hole through cover boss and passing seal wire through it and around conduit or hub.

Furnished with all hubs threaded for rigid conduit, or with all hubs provided with explosion-proof and dust-tight unions for rigid conduit. Furnished with surface cover.

Cadmium-galvanized is the standard finish.

Type GUA



Size In.	Nom. Diam. Cover In.	OUTSIDE DIMEN. OF BODY, IN.		With Threaded Hubs No.	With Union Hubs No.	Each	Each
		Depth	Depth				
1/2	2	2 1/2	1 3/4	GUA14	.....	.....	.....
1/2	2	2 1/2	1 15/16	.....	GUA645	\$1.80	.....
3/4	2	2 1/2	1 15/16	GUA24	.....	1.50	.....
1/2	3	3 1/2	1 15/16	GUA16	.....	1.80	.....
3/4	3	3 1/2	1 15/16	GUA26	.....	1.85	GUA765 2.15
1	3	3 1/2	2 1/4	GUA36	.....	1.90	GUA865 2.40
1 1/4	3 3/8	4 1/4	2 5/8	GUA47	.....	3.15	.....

Type GUAC



1/2	2	2 1/2	1 3/4	GUAC14	\$1.55	.....	.....
1/2	2	2 1/2	1 15/16	.....	.....	.....	GUAC645 \$2.25
3/4	2	2 1/2	1 15/16	GUAC24	1.65	.....	GUAC745 2.25
1/2	3	3 1/2	1 15/16	GUAC16	1.90	.....	.....
3/4	3	3 1/2	1 15/16	GUAC26	2.00	.....	GUAC765 2.60
1	3	3 1/2	2 1/4	GUAC36	2.10	.....	GUAC865 3.10
1 1/4	3 3/8	4 1/4	2 5/8	GUAC47	3.40	.....	.....

Prices for combinations of threaded and union hubs upon request.

GUA Series Junction Condulets

Schedule CE

Explosion-Proof and Dust-Tight

Furnished with surface cover.

Cadmium-galvanized is the standard finish.

Type GUAB



Size In.	Nom. Diam. Cover Open., In.	OUTSIDE DIMEN. OF BODY, IN.		With Threaded Hubs		With Union Hubs	
		Diam.	Depth	No.	Each	No.	Each
1/2	2	2 1/2	1 3/4	GUAB14	\$1.55	.....	.....
1/2	2	2 1/2	1 15/16	.....	.....	GUAB645	\$2.25
3/4	2	2 1/2	1 15/16	GUAB24	1.65	GUAB745	2.25
1/2	3	3 1/2	1 15/16	GUAB16	1.90	GUAB665	2.60
3/4	3	3 1/2	1 15/16	GUAB26	2.00	GUAB765	2.60
1	3	3 1/2	1 15/16	GUAB36	2.10	.....	.....
1 1/4	3 5/8	4 1/4	2 5/8	GUAB47	3.40	.....	.....
1 1/2	5	5 5/8	2 15/16	GUAB59	7.10	.....	.....

Type GUAD



Size In.	Nom. Diam. Cover Open., In.	OUTSIDE DIMEN. OF BODY, IN.		With Threaded Hubs		With Union Hubs	
		Diam.	Depth	No.	Each	No.	Each
1/2	2	2 1/2	1 3/4	GUAD14	\$1.65	.....	.....
1/2	2	2 1/2	1 15/16	.....	.....	GUAD645	\$2.70
3/4	2	2 1/2	1 15/16	GUAD24	1.80	GUAD745	2.70
1/2	3	3 1/2	1 15/16	GUAD16	2.00	GUAD665	3.05
3/4	3	3 1/2	1 15/16	GUAD26	2.15	GUAD765	3.05

Type GUAL



Size In.	Nom. Diam. Cover Open., In.	OUTSIDE DIMEN. OF BODY, IN.		With Threaded Hubs		With Union Hubs	
		Diam.	Depth	No.	Each	No.	Each
1/2	2	2 1/2	1 3/4	GUAL14	\$1.55	.....	.....
1/2	2	2 1/2	1 15/16	.....	.....	GUAL645	\$2.25
3/4	2	2 1/2	1 15/16	GUAL24	1.65	GUAL745	2.25
3/4	3	3 1/2	2 1/4	GUAL26	2.00	.....	.....
1	3	3 1/2	2 1/4	GUAL36	2.10	GUAL865	3.10
1 1/4	3 5/8	4 1/4	2 5/8	GUAL47	3.40	.....	.....

Type GUAM



Size In.	Nom. Diam. Cover Open., In.	OUTSIDE DIMEN. OF BODY, IN.		With Threaded Hubs		With Union Hubs	
		Diam.	Depth	No.	Each	No.	Each
1/2	2	2 1/2	1 3/4	GUAM14	1.65	.....	.....
1/2	2	2 1/2	1 15/16	.....	.....	GUAM645	\$2.70
3/4	2	2 1/2	1 15/16	GUAM24	1.80	GUAM745	2.70
1/2	3	3 1/2	1 15/16	GUAM16	2.00	GUAM665	3.05
3/4	3	3 1/2	1 15/16	GUAM26	2.15	GUAM765	3.05

Prices for combinations of threaded and union hubs upon request.

GUA Series Junction Condulets

Schedule CE

Explosion-Proof and Dust-Tight

Furnished with surface cover.

Cadmium-galvanized is the standard finish.

Type GUAN



Size In.	Nom. Diam. Cover Open., In.	OUTSIDE DIMEN. OF BODY, IN.		With Threaded Hubs		With Union Hubs	
		Diam.	Depth	No.	Each	No.	Each
1/2	2	2 1/2	1 3/4	GUAN14	\$1.55	.....	.....
1/2	2	2 1/2	1 15/16	.....	.....	GUAN645	\$2.25
3/4	2	2 1/2	1 15/16	GUAN24	1.65	GUAN745	2.25
1	3	3 1/2	2 1/4	GUAN36	2.10	GUAN865	3.10
1 1/4	3 5/8	4 1/4	2 5/8	GUAN47	3.40	.....	.....

Type GUAT



Size In.	Nom. Diam. Cover Open., In.	OUTSIDE DIMEN. OF BODY, IN.		With Threaded Hubs		With Union Hubs	
		Diam.	Depth	No.	Each	No.	Each
1/2	2	2 1/2	1 3/4	GUAT14	\$1.65	.....	.....
1/2	2	2 1/2	1 15/16	.....	.....	GUAT645	\$2.70
3/4	2	2 1/2	1 15/16	GUAT24	1.80	GUAT745	2.70
1/2	3	3 1/2	1 15/16	GUAT16	2.00	GUAT665	3.05
3/4	3	3 1/2	1 15/16	GUAT26	2.15	GUAT765	3.05
1	3 5/8	4 1/4	2 1/4	GUAT37	3.50	GUAT875	5.00
1 1/4	5	5 5/8	2 5/8	GUAT49	7.25	.....	.....
1 1/4	5	5 5/8	3	.....	.....	GUAT995	11.00

Type GUAW



Size In.	Nom. Diam. Cover Open., In.	OUTSIDE DIMEN. OF BODY, IN.		With Threaded Hubs		With Union Hubs	
		Diam.	Depth	No.	Each	No.	Each
1/2	2	2 1/2	1 3/4	GUAW14	\$1.75	.....	.....
1/2	2	2 1/2	1 15/16	.....	.....	GUAW645	\$3.15
3/4	2	2 1/2	1 15/16	GUAW24	1.95	GUAW745	3.15
1/2	3	3 1/2	1 15/16	GUAW16	2.10	GUAW665	3.50
3/4	3	3 1/2	1 15/16	GUAW26	2.30	GUAW765	3.50

Type GUAX



Size In.	Nom. Diam. Cover Open., In.	OUTSIDE DIMEN. OF BODY, IN.		With Threaded Hubs		With Union Hubs	
		Diam.	Depth	No.	Each	No.	Each
1/2	2	2 1/2	1 3/4	GUAX14	\$1.75	.....	.....
1/2	2	2 1/2	1 15/16	.....	.....	GUAX645	\$3.15
3/4	2	2 1/2	1 15/16	GUAX24	1.95	GUAX745	3.15
1/2	3	3 1/2	1 15/16	GUAX16	2.10	GUAX665	3.50
3/4	3	3 1/2	1 15/16	GUAX26	2.30	GUAX765	3.50
1	3 5/8	4 1/4	2 1/4	GUAX37	3.70	GUAX875	5.70
1 1/4	5	5 5/8	2 5/8	GUAX49	7.50	.....	.....
1 1/4	5	5 5/8	3	.....	.....	GUAX995	12.50

Prices for combinations of threaded and union hubs upon request.

GUA Series Junction Condulets

Schedule CE

**Explosion-Proof and Dust-Tight
With Union Hubs—Without Nuts and Sleeves**

Outside dimensions of body: Length, 3 3/4 inches; depth, 1 15/16 inches at corners, 3 1/8 inches over covers; nominal diameter of cover opening, 3 inches. Width, Type GUAQ, 5 5/8 inches; other types, 3 3/4 inches.

Can be furnished with additional hubs on the sides or in the back at an additional price per hub.

Cadmium-galvanized is the standard finish.

Type GUAG



Hub Sizes, In. A-B-C	No.	Each
1/2-1/2-1/2	GUAG706	\$2.75
3/4-3/4-3/4		
1/2-3/4-3/4		
3/4-1/2-1/2		
1/2-3/4-1/2		
1/2-3/4-1/2		

Type GUAP



Hub Sizes, In. A-B-C-D-E	No.	Each
1/2-1/2-1/2-3/4-1/2	*GUAP 706	\$3.15
1/2-1/2-1/2-1-1/2		
1/2-1/2-3/4-3/4-3/4		
1/2-1/2-3/4-1-3/4		
3/4-3/4-3/4-3/4-3/4		
3/4-3/4-3/4-1-3/4		
1/2-1/2-1-1-1	†GUAP 7806	3.35
3/4-3/4-1-1-1		

Type GUAH



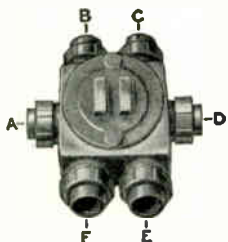
Hub Sizes, In. A-B-C-D	No.	Each
1/2-1/2-1/2-1/2	GUAH706	\$2.95
3/4-3/4-3/4-3/4		
1/2-1/2-3/4-3/4		
3/4-1/2-3/4-3/4		
1/2-1/2-3/4-1/2		
1/2-1/2-3/4-1/2		

Type GUAQ



Hub Sizes, In. A-B-C-D-E	No.	Each
1/2-1/2-1/2-3/4-1/2	*GUAQ 706	\$3.70
1/2-1/2-1/2-1-1/2		
1/2-1/2-3/4-3/4-3/4		
1/2-1/2-3/4-1-3/4		
3/4-3/4-3/4-3/4-3/4		
3/4-3/4-3/4-1-3/4		

Type GUAF



Hub Sizes, In. A-B-C-D-E-F	No.	Each
1/2-1/2-1/2-1/2-1/2-1/2	GUAF706	\$3.90
1/2-3/4-3/4-1/2-3/4-3/4		
1/2-1/2-1/2-1/2-3/4-3/4		
3/4-3/4-3/4-3/4-3/4-3/4		
3/4-1/2-1/2-3/4-1/2-1/2		
3/4-1/2-1/2-3/4-3/4-3/4		

*The D hub requires the use of a 1-inch nut for 1/2, 3/4, and 1-inch sleeve.

†The C, D, and E hubs require the use of a 1-inch nut for 1/2, 3/4, and 1-inch sleeve.

GUF Series Junction Condulets

Schedule CE

Explosion-Proof and Dust-Tight

Furnished with surface cover and threaded hubs. Cadmium-galvanized is the standard finish.

Type GUFC



Size In.	Cover Opening In.	DIMENSIONS OF BODY, In.		No.	Each
		Diam.	Depth		
1/2	3	3 1/2	1 15/16	GUFC16	\$2.30
3/4	3	3 1/2	1 15/16	GUFC26	2.40
1	3	3 1/2	2 1/4	GUFC36	2.60
1	5	5 5/8	2 1/4	GUFC39	7.75

Type GUFL



1/2	3	3 1/2	1 15/16	GUFL16	\$2.30
3/4	3	3 1/2	1 15/16	GUFL26	2.40

Type GUFT



1/2	3	3 1/2	1 15/16	GUFT16	\$2.50
3/4	3	3 1/2	1 15/16	GUFT26	2.60

Type GUFX



1/2	3	3 1/2	1 15/16	GUFX16	\$2.70
3/4	3	3 1/2	1 15/16	GUFX26	2.80

Threaded Covers and Canopies

Schedule CE

For Condulets of the GUA and GUF Series

The sealing cover is provided with a removable plug making it possible to fill the Condulet with sealing compound after installation.

The fixture canopy is intended especially for mounting pendant lighting fixtures, such as Type EVA. Body canopy is cast Feraloy.

The fixture cover is intended for mounting pendant lighting fixtures with 3/4-inch stem, such as Type EVA, especially where there is not enough head room for No. GUA068 canopy. Covers are made of aluminum alloy.

Surface Covers



Cover Open. In.	No.	Each
2	GUA04	\$.65
3	GUA06	.75
3 5/8	*GUA07	1.10

Fixture Canopies



Cover Open. In.	Fix. Stem In.	No.	Each
3	3/4	GUA068	\$3.10
3	†1 1/4	GUA0684	3.10

Sealing Covers



2	GUA041	\$.80
3	GUA062	1.00
3 5/8	*GUA072	1.30

Fixture Covers

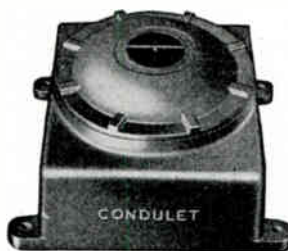


3	3/4	GUA0682	\$3.10
3	1/2	GUA0681	3.10

*Can also be used on Types GU and GUE Condulets.
†For 500-watt Type EVA.

Types GU, GUE, GUEC, and GUB Junction Condulets

Explosion-Proof and Dust-Tight



Type GU
4 1/8 x 4 1/8 x 3 7/16 Inches
3 5/8-Inch Cover Opening

Type GUE
4 5/8 x 4 5/8 x 3 1/4 Inches
3 5/8-Inch Cover Opening

Type GUEC
4 5/8 x 4 5/8 x 3 5/8 Inches
3 5/8-Inch Cover Opening

Type GUB01
6 1/2 x 7 x 5 1/2 Inches
5 1/2-Inch Cover Opening

Type GUB02
8 x 10 x 5 1/2 Inches
7-Inch Cover Opening

Type GUB03
11 x 12 x 9 Inches
9 5/8-Inch Cover Opening

Type GUB04
11 x 12 x 9 Inches
9 5/8-Inch Cover Opening

Dimensions are given in the following order: Width x Length x Depth. Depth includes cover, except for Type GUEC.

Cadmium-galvanized is the standard finish.

Types GU, GUE, GUEC, and GUB Junction Condulets without Hubs

Schedule CE

Explosion-Proof and Dust-Tight

Types GU, GUE, GUEC, and GUB Condulets Take Threaded or Union Hubs

First Division of No.	Each	OVERALL DIMENSIONS IN INCHES OF BODY INCLUDING COVER			Diam. Cover Opening Inches	SYMBOL NUMBERS AND LETTERS FOR MAXIMUM SIZE HUBS THAT CAN BE USED											
		Width	Length	Depth		ON TOP AND BOTTOM			ON EACH SIDE			ON BACK					
GU	\$2.00	4 1/8	4 1/8	3 7/16	3 5/8	4	4	1	—	4	4	1	—	4	4	4	
GUE	2.00	4 5/8	4 5/8	4 1/4	3 5/8	Y	Y	—	—	Y	Y	—	—	R	Y	Y	
GUEC	2.00	4 5/8	4 5/8	*3 5/8	3 5/8	6	5	2	—	6	5	2	—	4	5	5	
GUB01	12.70	6 1/2	7	5 1/2	5 1/2	T	R	W	—	T	R	W	—	R	R	R	
GUB02	18.50	8	10	5 1/2	7	Y	Y	W	—	Y	Y	W	—	R	R	R	
GUB03	40.00	11	12	9	9 5/8	7	6	4	2	7	6	4	2	10	7	6	
GUB04	40.00	11	12	9	9 5/8	U	S	Y	W	U	S	Y	W	V	T	S	
						7	7	5	3	7	7	6	5	10	9	7	
						U	U	R	X	U	U	S	Y	V	V	U	
						10	10	7	5	10	9	7	5	10	10	9	
						V	V	T	Y	V	V	T	R	V	V	V	
						10	8	5	4	10	10	7	5	10	10	10	
						V	U	S	Y	V	V	T	S	V	V	V	

*Depth of body only.

Threaded and Union Hubs

Union Hub Nuts and Sleeves

Size inches	Threaded		Union	
	Sym- bol	Each	Sym- bol	Each
1/2	1	\$.60	W	\$1.00
3/4	2	.65	X	1.00
1	3	.75	Y	1.20
1 1/4	4	.90	R	1.75
1 1/2	5	1.15	S	3.00
2	6	1.50	T	4.00
2 1/2	7	2.25	U	5.50
3	8	3.25	V	7.00
3 1/2	9	4.50	WD	9.00
4	10	6.00	XD	11.00

No.	Each	Nut In.	Sleeve In.
GUH215	\$.25	3/4	1/2
GUH25	.25	3/4	3/4
GUH315	.35	1	1/2
GUH325	.35	1	3/4
GUH35	.35	1	1
GUH425	.75	1 1/4	3/4
GUH45	.75	1 1/4	1 1/4
GUH525	1.25	1 1/2	3/4
GUH55	1.25	1 1/2	1 1/2
GUH635	2.25	2	1
GUH65	2.25	2	2
GUH75	3.25	2 1/2	2 1/2
GUH85	4.25	3	3

Type ECT Transformer Condulets

Schedule CE

Explosion-Proof and Dust-Tight

Class I, Group D, and Classes II, III, and IV



Arranged for connection to primary circuits of 230, 460, or 575 volts and reduce the voltage of the secondary circuit to 115 volts.

Particularly adapted for use in connection with the FS series explosion-proof pilot light Condulets, when the supply current is 230, 460, or 575 volts, 50 to 133 cycles.

Outside dimensions, exclusive of hubs: Length, 7 inches; width, 6 1/2 inches; depth, 5 1/2 inches; diameter of cover opening, 5 1/2 inches.

Cadmium-galvanized is the standard finish.

Rating Watts	Hub Size, In.	No.	Each
15	3/4	ECT211	\$14.80
50	3/4	ECT215	28.50

Industrial Signal Condulets

Schedule CE

Explosion-Proof and Dust-Tight
Class I, Group D; and Classes II, III, and IV

For use in hazardous locations.

Housings for each of these signals have sealing hubs at the bottom. Leads from the signal operating means are sealed in these hubs and brought through short pieces of conduit into GUA series junction Condulets where they can be spliced to the line wires.

Cadmium-galvanized is the standard finish.



Type ETR Bell Signals
Continuous Vibration
110-Volt Universal Motor Operation

Diam. Bell In.	Size Hub In.	No.	Each
6	3/4	ETR283	\$71.00
8	3/4	ETR285	71.00

Single Stroke
110-Volt, 60-Cycle A.C. Solenoid Operation

Diam. Bell In.	Size Hub In.	No.	Each
6	3/4	ETR284	\$71.00
8	3/4	ETR286	71.00

Type ETH Howler Signals

Also for use as telephone call signal units.

6 to 250-Volt A.C. Vibrator Type

Specify number of cycles desired.

Volume of Sound in Decibels at 6 Yards	Size Hub In.	No.	Each
92	3/4	ETH230	\$58.00
104	3/4	ETH231	70.00

6 to 250-Volt D.C. Vibrator Type

Volume of Sound in Decibels at 6 Yards	Size Hub In.	No.	Each
92	3/4	ETH240	\$70.00
102	3/4	ETH241	80.00



Type ETH Siren Signals

Motor Operated
*6 to 250-Volt A.C. or D.C.
For Plain Signals

No.	Each	Size Hub In.
ETH260	\$175.00	3/4

For Code Signals

No.	Each	Size Hub In.
ETH280	\$225.00	3/4

*Specify voltage desired.



Type TCH Electric Clock Condulets

Schedule CE

Explosion-Proof and Dust-Tight

115-Volt, 60-Cycle A.C.

Class I, Groups C and D; and Classes II, III, and IV

For the use of electric clocks in hazardous locations without danger of explosions from electrical causes.

Case or body is cast aluminum with a heavy, clear glass disc sealed into the front over the face of the clock. A round opening in the back permits mounting or removal of the clock mechanism. This opening is equipped with a cast aluminum threaded cover. There is a mounting lug with fastening hole on each side of the hub at the top of the body.

A Seth Thomas self-starting synchronous electric clock mechanism is mounted in the Condulet and an external knob is provided for setting the hands.

Pigtail leads from the clock motor are brought into the splicing and sealing chamber at the top and sealed in place. The splicing chamber has a round opening in the front,

equipped with a threaded cover, through which circuit wires can be spliced to motor leads after complete unit has been installed. Explosion-proof and dust-tight union hub is provided at top to permit easy connection to threaded conduit line.

Furnished with clock.

Outside dimensions: Length, 13 1/4 inches; width, 7 1/2 inches; depth, 4 inches.



No.	Each	Size Hub In.
TCH151	\$65.00	1 1/2
TCH251	65.00	3/4

EV Series Lighting Fixture Condulets

Schedule R

Explosion-Proof

Class I, Groups C and D

For use in hazardous locations where with ordinary lighting fixtures a broken lamp or a ground or short circuit in the receptacles or wires might cause an explosion. They are so designed that any explosion occurring within the fixture will not be communicated to the surrounding atmosphere.

Hoods are cast aluminum with aluminum inner reflectors. Globe holder assembly consists of clear, Pyrex, impact-resisting, glass globe, equipped with sheet aluminum gasket and cast aluminum mounting and retaining rings. Cast aluminum guards are held to globe mounting rings by three machine screws.

Furnished without reflectors.

Type EVA—Pendent Type



Complete with a Condulet body for pendent mounting on a conduit stem. A set screw in hub may be tightened against unthreaded part of conduit to prevent unscrewing from conduit when relamping. May be suspended by a conduit stem from GUA or GUF series Condulets with three-inch cover opening and GUA fixture covers or canopies.

Watts	Size In.	OVERALL DIMEN.			With Guard		Without Guard	
		In.	Lgth. In.	Width In.	No.	Each	No.	Each
60	1/2	...	...	...	EVA140	\$13.00	EVA104	\$12.25
		10 3/8	5 3/4	...	EVA240	13.10	EVA204	12.35
100	1/2	...	...	...	EVA110	19.40	EVA101	18.40
		12 7/16	6 7/8	...	EVA210	19.50	EVA201	18.50
150	3/4	...	...	...	EVA115	19.40	EVA105	18.40
		12 15/16	7 1/8	...	EVA215	19.50	EVA205	18.50
200	1/2	...	...	...	EVA120	27.90	EVA102	26.40
		14 3/16	8 1/2	...	EVA220	28.00	EVA202	26.50
300	3/4	...	...	...	EVA230	62.50	EVA203	56.70
		17 1/4	10	...	EVA450	73.50	EVA406	69.20
500	1 1/4	17 3/4	14	...	...	...	...

Type EVCX—Ceiling Type



For use where it is necessary to mount the fixture close to the ceiling.

For exposed or concealed conduit.

Has four threaded hubs, three of which are furnished with pipe plugs.

Watts	Size In.	Lgth. In.	Width In.	No.	Each	No.	Each
60	1/2	...	...	EVCX140	\$17.20	EVCX104	\$16.00
		10 3/8	5 3/4	EVCX240	17.50	EVCX204	16.00
100	1/2	...	...	EVCX110	23.70	EVCX101	22.00
		12 7/16	6 7/8	EVCX210	24.00	EVCX201	23.00
150	3/4	...	...	EVCX115	23.70	EVCX105	22.00
		13	7 1/8	EVCX215	24.00	EVCX205	23.00
200	1/2	...	...	EVCX120	32.20	EVCX102	30.00
		14 3/16	8 1/2	EVCX220	32.50	EVCX202	31.00
300	3/4	...	...	EVCX136	67.00	EVCX163	61.00
		16 3/4	10	EVCX236	67.10	EVCX263	61.00
500	1/2	...	...	EVCX150	78.00	EVCX106	73.00
		17 3/8	14	EVCX250	78.10	EVCX206	73.00

EV Series Lighting Fixture Condulets

Schedule R
Explosion-Proof
Class I, Groups C and D
Type EVBX—Bracket Type



For side wall mounting. Four hubs tapped for rigid conduit are provided, three of which are equipped with threaded pipe plugs. This arrangement permits the Condulet to be used as a dead end, through feed, L, T, or X.

Watts	OVERALL DIMEN., IN.			With Guard		Without Guard	
	Size In.	Lgth. In.	Width In.	No.	Each	No.	Each
60	1 1/2	.....	.....	EVBX140	\$19.20	EVBX104	\$18.45
	3/4	.....	.....	EVBX240	19.50	EVBX204	18.75
100	1 1/2	.....	.....	EVBX110	25.70	EVBX101	24.70
	3/4	.....	.....	EVBX210	26.00	EVBX201	25.00
150	1 1/2	.....	.....	EVBX115	25.70	EVBX105	24.70
	3/4	.....	.....	EVBX215	26.00	EVBX205	25.00
*200	1 1/2	.....	.....	EVBX120	34.20	EVBX102	32.70
	3/4	.....	.....	EVBX220	34.50	EVBX202	33.00

Type EVJ—Bulkhead Type

Intended for direct mounting on side walls, and has hubs for horizontal conduit. It is especially suitable for use in lubrication pits where general light distribution is desired.



60	1 1/2	.....	.....	EVJ140	\$16.35	EVJ104	\$15.60
	3/4	.....	.....	EVJ240	16.65	EVJ204	15.90
100	1 1/2	11 3/8	8 3/8	EVJ110	24.80	EVJ101	23.80
	3/4	.....	.....	EVJ210	25.00	EVJ201	24.00
150	1 1/2	13 3/4	9	EVJ115	24.80	EVJ105	23.80
	3/4	.....	.....	EVJ215	25.00	EVJ205	24.00
*200	1 1/2	14 1/4	9 1/4	EVJ120	33.50	EVJ102	32.00
	3/4	.....	.....	EVJ220	33.70	EVJ202	32.20

*Take deep bowl and 30° angle reflectors only.

Reflectors for EV Series Lighting Fixture Condulets

Schedule R



Reflectors are porcelain enameled steel, green outside and white inside.

Fixture Watts	Style	Diam. In.	No.	Each
60	Dome	10 1/4	EV481	\$2.50
	Deep	8 3/4	EV483	2.75
	Shallow	10 1/4	EV485	2.25
	30° Angle	8 3/4	EV487	2.75
100	Dome	12 3/8	EV181	2.75
	Deep	9 1/4	EV183	3.00
	Shallow	12 3/8	EV185	2.50
	30° Angle	10 1/4	EV187	3.00
150	Dome	13 3/4	EV581	3.25
	Deep	10 1/4	EV583	3.50
	Shallow	13 3/4	EV585	3.00
	30° Angle	12 3/8	EV587	3.50
200	Dome	16 1/16	EV281	3.75
	Deep	12 3/8	EV283	4.00
	Shallow	16 1/16	EV285	3.50
	30° Angle	13 3/4	EV287	4.50
300	Dome	20 7/16	EV381	6.50
	30° Angle	16 1/16	EV387	4.50
	Dome	20 1/2	EV681	6.50

EV Series Lighting Fixture Condulets

Schedule R
Explosion-Proof
Type EVA—Pendent Type
300 Watts
Class I



May be suspended by conduit stem from GUA and GUF series Condulets with three-inch cover opening and GUA fixture covers or canopies.

Not listed with reflectors, but porcelain enameled steel reflectors can be furnished in standard shapes.

Size Hub In.	With Medium Base Lamp Receptacle		With Mogul Base Lamp Receptacle	
	No.	Each	No.	Each
3/4	EVA234	\$62.50	EVA230	\$62.50
3/4	EVA243	\$56.75	EVA203	\$56.75

Type EVH Hand Lamps

Schedule R
Explosion-Proof
*Class I, Group D
40 Watts

Takes 25 or 40-watt lamps.

No.	Each	Diam. Cord Inches
EVH40M3	\$22.00	.375 to .625

100 Watts

No.	Each	Diam. Cord Inches
EVH100	\$45.00	.375 to .625

*No. EVH40M3 is also dust-tight; Class II, Group G, and Classes III and IV.

DL Series Lighting Fixture Condulets

Schedule R
Dust-Tight

For Class II, Group G Hazardous Locations When Mounted Vertically
For Classes III and IV Hazardous Locations When Mounted In Any Position

Bodies and hoods of cast aluminum.
Type DLA pendent type fixtures may be suspended from CPS series Condulets with hub covers.

Type DLC ceiling type is made to mount directly on CPS series Condulets.

With Shock-Absorbing Lamp Receptacle DL66 and Globe

100-Watt Lamps

Size In.	No. DLA		No. DLC	
	No.	Each	No.	Each
1 1/2	DLA161	\$9.70	DLC61F	\$9.70
3/4	DLA261	9.70	.....	.....

150 and 200-Watt Lamps

Type DLA Pendent Type	1 1/2	DLA162	\$11.35	DLC62F	\$11.35
	3/4	DLA262	11.35	.....	.....

With Porcelain Enameled Steel Reflector

Reflector is green porcelain enamel outside; and white porcelain enamel inside.

Type DLA (Dome) Pendent Type

Type DLC (Dome) Ceiling Type



100-Watt Lamps

100-Watt Lamps

No.	Each	REFLECTOR		No.	Each	REFLECTOR	
		No.	Size Diam. Hub In.			No.	Size Diam. Hub In.
DLA112	\$11.50	DL21	12 1/2	DLC12F	\$11.50	DL21	12
DLA212	11.50	DL21	12 3/4				
150 or 200-Watt Lamps							
DLA122	\$16.50	DL22	18 1/2				
DLA222	16.50	DL22	18 3/4				
150 or 200-Watt Lamps							
				DLC22F	\$16.50	DL22	18

EFS Series Tumbler Switch Condulets

Schedule CE

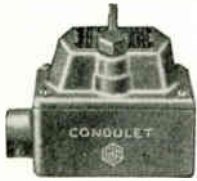
Explosion-Proof and Dust-Tight

For the control of lighting, appliance, and small motor circuits, or for push button remote control of magnetically operated motor controllers.

Meets requirements of the Underwriters' Laboratories for devices for Class I (explosion-proof) locations.

Furnished with tumbler switches.

Cadmium-galvanized is the standard finish.



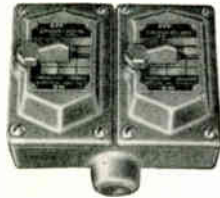
Style	AMPERES		Hp.	Size In.	No.	Each	Form
	125-V.	250-V.					
1-Pole	20	10	.....	1/2	EFS1129	\$5.45	29
2-Pole	20	20	2	1/2	EFS118	5.55	8
3-Way	15	10	.....	1/2	EFS1130	5.85	30
1-Pole	20	10	.....	3/4	EFS2129	5.50	29
2-Pole	20	20	2	3/4	EFS218	5.60	8
3-Pole	10	10	1/4 A.C.	3/4	EFS2123	8.60	23
3-Way	15	10	.....	3/4	EFS2130	5.90	30



Type EFSC

Outside dimensions, exclusive of hubs: Length, 5 1/8 inches; width, 3 1/2 inches; depth, 4 9/16 inches.

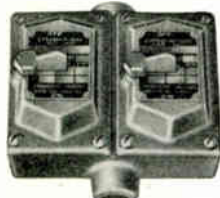
Style	AMPERES	125-V.	250-V.	Hp.	Size In.	No.	Each	Form
2-Pole	20	20	2	1/2	EFSC118	5.65	8	
3-Pole	10	10	1/4 A.C.	1/2	EFSC1123	8.65	23	
3-Way	15	10	.....	1/2	EFSC1130	5.95	30
1-Pole	20	10	.....	3/4	EFSC2129	5.65	29
2-Pole	20	20	2	3/4	EFSC218	5.75	8	
3-Pole	10	10	1/4 A.C.	3/4	EFSC2123	8.75	23	
3-Way	15	10	.....	3/4	EFSC2130	6.05	30



***†Type EFS 2-Gang**

Outside dimensions, exclusive of hubs: Length, 5 1/8 inches; width, 7 1/4 inches; depth, 4 9/16 inches.

Style	AMPERES	125-V.	250-V.	Hp.	Size In.	No.	Each	Form
1-Pole	20	10	3/4	EFS2229	11.00	29	
2-Pole	20	20	2	3/4	EFS228	11.20	8	
3-Way	15	10	.....	3/4	EFS2230	11.80	30
3-Pole	10	10	1/4 A.C.	1	EFS3223	17.30	23	



***†Type EFSC 2-Gang**

Outside dimensions, exclusive of hubs: Length, 5 1/8 inches; width, 7 1/4 inches; depth, 4 9/16 inches.

Style	AMPERES	125-V.	250-V.	Hp.	Size In.	No.	Each	Form
2-Pole	20	20	2	1/2	EFSC128	11.30	8	
3-Way	15	10	.....	1/2	EFSC1230	11.90	30
1-Pole	20	10	.....	3/4	EFSC2229	11.30	29
2-Pole	20	20	2	3/4	EFSC228	11.50	8	
3-Pole	10	10	1/4 A.C.	3/4	EFSC2223	17.50	23	
3-Way	15	10	.....	3/4	EFSC2230	12.10	30

*Combinations can be furnished, if specified.

†May be obtained in one-inch conduit size. Change first figure of number from 2 to 3. Add 10 cents per hub to list price of Type EFS 2-gang and 20 cents per hub to list price of Type EFSC 2-gang.

‡Order by catalog number. Use type and form number (rather than catalog number) for identification of Condulets for hazardous locations, when consulting Underwriters Laboratories' list of inspected electrical appliances.

EFS Series Tumbler Switch Condulets

Schedule CE

Explosion-Proof and Dust-Tight

For flush or surface mounting.

Meets requirements of the Underwriters' Laboratories for devices for Class I (explosion-proof) locations.

Provides controls for 1 or 2 circuits in a single-gang EFS series Condulet.

Furnished with tumbler switches.

Outside dimensions, exclusive of hubs: Length, 5 5/8 inches; width, 4 inches; depth, 3 1/2 inches.

Cadmium-galvanized is the standard finish.

Type EFS Single



Style	AMPERES	125-V.	250-V.	Size In.	Cast Feraloy Cover		Cast Brass Cover, Chromium-Plated	
					No.	Each	No.	Each
1-Pole	10	5	1/2	EFS1101	\$5.45	EFS1121	\$9.70	31
2-Pole	10	10	1/2	EFS1100	5.55	EFS1120	9.80	32
3-Way	10	5	1/2	EFS1107	5.85	EFS1119	10.10	33
1-Pole	10	5	3/4	EFS2101	5.50	EFS2121	9.75	31
2-Pole	10	10	3/4	EFS2100	5.60	EFS2120	9.85	32
3-Way	10	5	3/4	EFS2107	5.90	EFS2119	10.15	33

†Type EFSC Single



Style	AMPERES	125-V.	250-V.	Size In.	No.	Each	Form	
								1-Pole	10	5	1/2	EFSC1101	$5.55	EFSC1121	$9.80	31
2-Pole	10	10	1/2	EFSC1100	5.65	EFSC1120	9.90	32
3-Way	10	5	1/2	EFSC1107	5.95	EFSC1119	10.20	33
1-Pole	10	5	3/4	EFSC2101	5.65	EFSC2121	9.90	31
2-Pole	10	10	3/4	EFSC2100	5.75	EFSC2120	10.00	32
3-Way	10	5	3/4	EFSC2107	6.05	EFSC2119	10.30	33

***Type EFS Duplex**



For 2 like switches, but on special order any combination of 2 switches can be furnished.

1-Pole	10	5	1/2	EFS1109	\$6.95	EFS1125	\$11.20	31
1-Pole	10	5	3/4	EFS2109	7.00	EFS2125	11.25	31
2-Pole	10	10	3/4	EFS2110	7.80	EFS2126	12.05	32
3-Way	10	5	3/4	EFS2113	7.90	EFS2127	12.15	33

***Type EFSC Duplex**



1-Pole	10	5	1/2	EFSC1109	\$7.05	EFSC1125	\$11.30	31
2-Pole	10	10	1/2	EFSC1110	7.85	EFSC1126	12.10	32
3-Way	10	5	1/2	EFSC1113	7.95	EFSC1127	12.20	33
1-Pole	10	5	3/4	EFSC2109	7.15	EFSC2125	11.40	31
2-Pole	10	10	3/4	EFSC2110	7.95	EFSC2126	12.20	32
3-Way	10	5	3/4	EFSC2113	8.05	EFSC2127	12.30	33

*Combinations can be furnished, if specified.

†May be obtained in one-inch conduit size. Change first figure of number from 2 to 3 and add 20 cents to list price.

‡Order by catalog number. Use type and form number (rather than catalog number) for identification of Condulets for hazardous locations, when consulting Underwriters Laboratories' list of inspected electrical appliances.

EFS Series Push Button Switch Condulets

Schedule CE

Explosion-Proof and Dust-Tight With Rocker Type Operating Handle

Meets requirements of the Underwriters' Laboratories for devices for Class I (explosion-proof) locations.

Furnished with double push button switches.
Cadmium-galvanized is the standard finish.



Type EFS

Outside dimensions, exclusive of hubs:
Length, $5\frac{1}{8}$ inches; width, $3\frac{1}{2}$ inches;
depth, 4 inches.

Style	AMPERES		Hp.	Size In.	No.	Each	†Form
	125-V.	250-V.					
1-Pole	20	10	..	$\frac{1}{2}$	EFS1138	\$5.45	38
2-Pole	20	20	2	$\frac{1}{2}$	EFS114	5.55	4
3-Way	15	10	..	$\frac{1}{2}$	EFS1139	5.85	39
1-Pole	20	10	..	$\frac{3}{4}$	EFS2138	5.50	38
2-Pole	20	20	2	$\frac{3}{4}$	EFS214	5.60	4
3-Way	15	10	..	$\frac{3}{4}$	EFS2139	5.90	39



Type EFSC

Outside dimensions, exclusive of hubs: Length, $5\frac{1}{8}$ inches; width, $3\frac{1}{2}$ inches; depth, 4 inches.

1-Pole	20	10	..	$\frac{1}{2}$	EFSC1138	\$5.55	38
2-Pole	20	20	2	$\frac{1}{2}$	EFSC114	5.65	4
3-Way	15	10	..	$\frac{1}{2}$	EFSC1139	5.95	39
1-Pole	20	10	..	$\frac{3}{4}$	EFSC2138	5.65	38
2-Pole	20	20	2	$\frac{3}{4}$	EFSC214	5.75	4
3-Way	15	10	..	$\frac{3}{4}$	EFSC2139	6.05	39



*†Type EFS 2-Gang

Outside dimensions, exclusive of hubs: Length, $5\frac{1}{8}$ inches; width, $7\frac{1}{4}$ inches; depth, 4 inches.

1-Pole	20	10	..	$\frac{1}{2}$	EFS1238	\$10.90	38
1-Pole	20	10	..	$\frac{3}{4}$	EFS2238	11.00	38
2-Pole	20	20	2	$\frac{3}{4}$	EFS2204	11.20	4
3-Way	15	10	..	$\frac{3}{4}$	EFS2239	11.80	39



*†Type EFSC 2-Gang

Outside dimensions, exclusive of hubs: Length, $5\frac{1}{8}$ inches; width, $7\frac{1}{4}$ inches; depth, 4 inches.

1-Pole	20	10	..	$\frac{1}{2}$	EFSC1238	\$11.10	38
2-Pole	20	20	2	$\frac{1}{2}$	EFSC1204	11.30	4
3-Way	15	10	..	$\frac{1}{2}$	EFSC1239	11.90	39
1-Pole	20	10	..	$\frac{3}{4}$	EFSC2238	11.30	38
2-Pole	20	20	2	$\frac{3}{4}$	EFSC2204	11.50	4
3-Way	15	10	..	$\frac{3}{4}$	EFSC2239	12.10	39

*Combinations can be furnished, if specified.

†May be obtained in one-inch conduit size. Change first figure to number from 2 to 3. Add 10 cents per hub to list price of Type EFS 2-gang and 20 cents per hub to list price of Type EFSC 2-gang.

‡Order by catalog number. Use type and form number (rather than catalog number) for identification of Condulets for hazardous locations, when consulting Underwriters Laboratories' list of inspected electrical appliances.

Can be furnished with attachment for rod operation at no extra charge. Add suffix S33 to number.

EFS Series Push Button Switch Condulets

Schedule CE

Explosion-Proof and Dust-Tight

Meets more exacting requirements of the Underwriters' Laboratories for devices for Class I (explosion-proof) locations.

Furnished with front operated double push button switches.
Cadmium-galvanized is the standard finish.



Type EFS

Outside dimensions, exclusive of hubs: Length, $5\frac{1}{8}$ inches; width, $3\frac{1}{2}$ inches; depth, $4\frac{1}{4}$ inches.

Style	AMPERES		Hp.	Size In.	No.	Each	†Form
	125-V.	250-V.					
1-Pole	20	10	..	$\frac{1}{2}$	EFS1141	\$5.45	41
2-Pole	20	20	2	$\frac{1}{2}$	EFS1142	5.55	42
3-Way	15	10	..	$\frac{1}{2}$	EFS1143	5.85	43
1-Pole	20	10	..	$\frac{3}{4}$	EFS2141	5.50	41
2-Pole	20	20	2	$\frac{3}{4}$	EFS2142	5.60	42
3-Way	15	10	..	$\frac{3}{4}$	EFS2143	5.90	43



Type EFSC

Outside dimensions, exclusive of hubs: Length, $5\frac{1}{8}$ inches; width, $3\frac{1}{2}$ inches; depth, $4\frac{1}{4}$ inches.

1-Pole	20	10	..	$\frac{1}{2}$	EFSC1141	\$5.55	41
2-Pole	20	20	2	$\frac{1}{2}$	EFSC1142	5.65	42
3-Way	15	10	..	$\frac{1}{2}$	EFSC1143	5.95	43
1-Pole	20	10	..	$\frac{3}{4}$	EFSC2141	5.65	41
2-Pole	20	20	2	$\frac{3}{4}$	EFSC2142	5.75	42
3-Way	15	10	..	$\frac{3}{4}$	EFSC2143	6.05	43



*†Type EFS 2-Gang

Outside dimensions, exclusive of hubs: Length, $5\frac{1}{8}$ inches; width, $7\frac{1}{4}$ inches; depth, $4\frac{1}{4}$ inches.

1-Pole	20	10	..	$\frac{1}{2}$	EFS1241	\$10.90	41
1-Pole	20	10	..	$\frac{3}{4}$	EFS2241	11.00	41
2-Pole	20	20	2	$\frac{3}{4}$	EFS2242	11.20	42
3-Way	15	10	..	$\frac{3}{4}$	EFS2243	11.80	43



*†Type EFSC 2-Gang

Outside dimensions, exclusive of hubs: Length, $5\frac{1}{8}$ inches; width, $7\frac{1}{4}$ inches; depth, $4\frac{1}{4}$ inches.

1-Pole	20	10	..	$\frac{1}{2}$	EFSC1241	\$11.10	41
2-Pole	20	20	2	$\frac{1}{2}$	EFSC1242	11.30	42
3-Way	15	10	..	$\frac{1}{2}$	EFSC1243	11.90	43
1-Pole	20	10	..	$\frac{3}{4}$	EFSC2241	11.30	41
2-Pole	20	20	2	$\frac{3}{4}$	EFSC2242	11.50	42
3-Way	15	10	..	$\frac{3}{4}$	EFSC2243	12.10	43

*Combinations can be furnished, if specified.

†May be obtained in one-inch conduit size. Change first figure of number from 2 to 3. Add 10 cents per hub to list price of Type EFS 2-gang and 20 cents per hub to list price of Type EFSC 2-gang.

‡Order by catalog number. Use type and form number (rather than catalog number) for identification of Condulets for hazardous locations, when consulting Underwriters Laboratories' list of inspected electrical appliances.

EFS Series Push Button Station Condulets

Schedule CE

Explosion-Proof and Dust-Tight

15 Amperes, 230 Volts A.C.; 10 Amperes, 460 Volts A.C.; and 5 Amperes, 600 Volts A.C.

Meets more exacting requirements of the Underwriters' Laboratories for devices for Class I (explosion-proof) locations.

Furnished with motor control push button switches, front operated, with start and stop push buttons.

All two-button push button switches are furnished with a removable line connection jumper.

Cadmium-galvanized is the standard finish.

Types EFS and EFSC



Type EFS

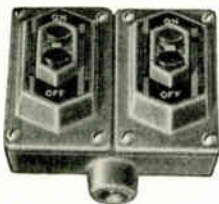


Type EFSC

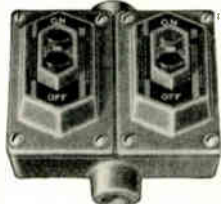
Outside dimensions, exclusive of hubs: Length, 5 1/8 inches; width, 3 1/2 inches; depth, 4 1/4 inches.

Style	Plate Marking	Size In.	Type EFS		Type EFSC		†
			No.	Each	No.	Each Form	
1 Button (Normally Open).....	Start	1/2	EFS111	\$7.15	EFSC111	\$7.25	1
		3/4	EFS211	7.20	EFSC211	7.35	1
1 Button (Normally Closed).....	Stop	1/2	EFS1102	7.15	EFSC1102	7.25	2
		3/4	EFS212	7.20	EFSC212	7.35	2
2 Buttons (1 Normally Open, 1 Normally Closed)....	Start	1/2	EFS115	8.40	EFSC115	8.50	5
		3/4	EFS215	8.45	EFSC215	8.60	5
2 Buttons (Both Normally Open).....	Start	1/2	EFS1103	8.40	EFSC1103	8.50	3
		3/4	EFS213	8.45	EFSC213	8.60	3
2 Buttons (Both Normally Closed)....	Stop	1/2	EFS1105	8.40	EFSC1105	8.50	05
		3/4	EFS2105	8.45	EFSC2105	8.60	05

*†Types EFS 2-Gang and EFSC 2-Gang



Type EFS



Type EFSC

Outside dimensions, exclusive of hubs: Length, 5 1/8 inches; width, 7 1/4 inches; depth, 4 1/4 inches.

Style	Plate Marking	Size In.	Type EFS		Type EFSC		†
			No.	Each	No.	Each Form	
1 Button (Normally Open).....	Start	1/2	EFS121	\$14.30	EFSC121	\$14.50	1/2
		3/4	EFS221	14.40	EFSC221	14.70	3/4
1 Button (Normally Closed).....	Stop	1/2	EFS122	14.30	EFSC122	14.50	1/2
		3/4	EFS222	14.40	EFSC222	14.70	3/4
2 Buttons (1 Normally Open, 1 Normally Closed)....	Start	1/2	EFS225	16.80	EFSC125	17.00	1/2
		3/4	EFS325	16.90	EFSC225	17.20	3/4
2 Buttons (Both Normally Open)....	Start	1/2	EFS2203	16.80	EFSC123	17.00	1/2
		3/4	EFS323	16.90	EFSC2203	17.20	3/4
2 Buttons (Both Normally Closed)....	Stop	1/2	EFS2205	16.80	EFSC1205	17.00	1/2
		3/4	EFS3205	16.90	EFSC2205	17.20	3/4

*Combinations can be furnished, if specified.

†May be obtained in one-inch conduit size. Change first figure of number 2 to 3. Add 10 cents per hub to list price of Type EFS 2-gang and 20 cents per hub to list price of Type EFSC 2-gang.

‡Order by catalog number. Use type and form number (rather than catalog number) for identification of Condulets for hazardous locations, when consulting Underwriters Laboratories' list of inspected electrical appliances.

EFS Series Manual Motor Starting Switch Condulets

Schedule CE

Explosion-Proof and Dust-Tight

Class I, Groups C and D; and Classes II, III, and IV

Types EFS and EFSC



Type EFS



Type EFSC

Furnished with G-E CR1061 motor starting switches (tumbler type) single phase motors, and take interchangeable heater units.

Outside dimensions, exclusive of hubs: Length, 5 1/8 inches; width, 3 1/2 inches; depth, 4 1/8 inches.

Cadmium-galvanized is the standard finish.

Poles Hp.	SWITCH	Volts	Size Hub In.	Type EFS		Type EFSC	
				No.	*Each	No.	*Each Form
1	3/4	115 to 220 A.C.	1/2	EFS1185	\$9.85	EFSC1185	\$9.95 85
1	3/4	115 to 220 A.C.	3/4	EFS2185	9.90	EFSC2185	10.05 85
1	3/4	115 to 220 A.C.	1	EFS3185	10.00	EFSC3185	10.20 85
1	1 1/2	115 to 230 D.C.	1/2	EFS1187	9.85	EFSC1187	9.95 87
1	1 1/2	115 to 230 D.C.	3/4	EFS2187	9.90	EFSC2187	10.05 87
1	1 1/2	115 to 230 D.C.	1	EFS3187	10.00	EFSC3187	10.20 87
2	3/4	110 to 220 A.C.	1/2	EFS1186	10.35	EFSC1186	10.45 86
2	3/4	110 to 220 A.C.	3/4	EFS2186	10.40	EFSC2186	10.55 86
2	3/4	110 to 220 A.C.	1	EFS3186	10.50	EFSC3186	10.70 86
2	3/4	115 to 230 D.C.	1/2	EFS1188	10.35	EFSC1188	10.45 88
2	3/4	115 to 230 D.C.	3/4	EFS2188	10.40	EFSC2188	10.55 88
2	3/4	115 to 230 D.C.	1	EFS3188	10.50	EFSC3188	10.70 88

*Price includes switch with one interchangeable heater.

EFS Series Pilot Light Condulets

Schedule CE

Explosion-Proof and Dust-Tight



Type EFS



Type EFSC

For use as an indicator light. Meets more exacting requirements of the Underwriters' Laboratories for devices for Class I (explosion-proof) locations.

Furnished with candelabra base receptacle; 6-watt, 115-volts, Type S-6 clear bulb lamp; jewel; and guard. Ten-watt, 230-volt type S-8 clear bulb lamps furnished in Condulets by adding suffix V2 to number, at advance in price of 75 cents per lamp.

Outside dimensions, exclusive of hubs: Length, 5 1/8 inches; width, 3 1/2 inches; depth, 4 1/8 inches.

Color of Jewel	Size In.	With Single Pilot Light			With Double Pilot Light		
		No.	Each	†Form	No.	Each	†Form
Ruby	1/2	EFS1524	\$8.00	524	EFS1561	\$11.50	561
Emerald	1/2	EFS1541	8.00	524	EFS1563	11.50	561
Clear	1/2	EFS1548	8.00	524	EFS1570	11.50	561
Ruby	3/4	EFS2524	8.05	524	EFS2561	11.55	561
Emerald	3/4	EFS2541	8.05	524	EFS2563	11.55	561
Clear	3/4	EFS2548	8.05	524	EFS2570	11.55	561
Type EFSC							
Ruby	1/2	EFSC1524	\$8.10	524	EFSC1561	\$11.60	561
Emerald	1/2	EFSC1541	8.10	524	EFSC1563	11.60	561
Clear	1/2	EFSC1548	8.10	524	EFSC1570	11.60	561
Ruby	3/4	EFSC2524	8.20	524	EFSC2561	11.70	561
Emerald	3/4	EFSC2541	8.20	524	EFSC2563	11.70	561
Clear	3/4	EFSC2548	8.20	524	EFSC2570	11.70	561
Ruby	1	EFSC3524	8.40	524	EFSC3561	11.90	561
Emerald	1	EFSC3541	8.40	524	EFSC3563	11.90	561
Clear	1	EFSC3548	8.40	524	EFSC3570	11.90	561

†When ordering, use the following symbol numbers for color of jewel: Ruby, J1; emerald, J3; and clear, J10.

‡Order by catalog number. Use type and form number (rather than catalog number) for identification of Condulets for hazardous locations, when consulting Underwriters Laboratories' list of inspected electrical appliances.

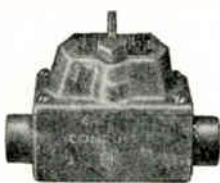
EFS Series Secondary Breaker Condulets

Schedule CE
Explosion-Proof and Dust-Tight
Types EFS and EFSC



Type EFS

With Secondary
Breaker—
Single Pole
For D.C. or
Single Phase
A.C. Motors



Type EFSC

Meets requirements of the Underwriters' Laboratories for devices for Class I (explosion-proof) locations.

Outside dimensions, exclusive of hubs: Length, 5 1/8 inches; width, 3 1/2 inches; depth, 4 1/8 inches.

Cadmium-galvanized is the standard finish.

Secondary Breaker	Size In.	Type EFS No.	Each	Type EFSC No.	Each	Form
Arrow-H. & H.	1/2	EFS1171	*\$7.60	EFSC1171	*\$7.70	71
	3/4	EFS2171	*7.65	EFSC2171	*7.80	71
	1	EFS3171	*7.75	EFSC3171	*7.95	71
Bryant Type H	1/2	EFS1151-BR	†7.60	EFSC1151-BR	†7.70	51
	3/4	EFS2151-BR	†7.65	EFSC2151-BR	†7.80	51
	1	EFS3151-BR	†7.75	EFSC3151-BR	†7.95	51
Westinghouse Type H	1/2	EFS1151-W	†7.60	EFSC1151-W	†7.70	51
	3/4	EFS2151-W	†7.65	EFSC2151-W	†7.80	51
	1	EFS3151-W	†7.75	EFSC3151-W	†7.95	51

*Price includes breaker with integral heater.

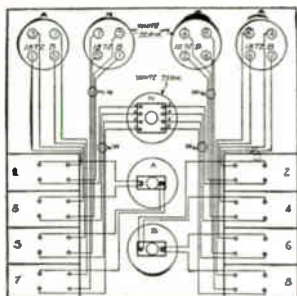
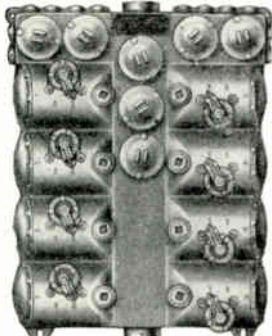
†Price includes breaker with one interchangeable heater.

‡Order by catalog number. Use type and form number (rather than catalog number) for identification of Condulets for hazardous locations, when consulting Underwriters' Laboratories' list of inspected electrical appliances.

Information upon request for heater units and motor ratings of the secondary breakers.

Type FLP Panelboards with Circuit Breakers

Schedule CE
Explosion-Proof and Dust-Tight



8 Circuits—Double-Pole

If more than 8 circuits are required, two or more panelboards can be connected by means of 2-inch conduit nipples.

Furnished with Westinghouse circuit breakers, but can be furnished with ITE circuit breakers at same list price, if specified; main hubs, 2 inches; branch circuit hubs, 3/4 inch. Dimensions over all, including hubs: Length, 8 circuits, 27 1/8 inches; 6 circuits, 23 1/2 inches; 4 circuits, 18 1/2 inches; width, 21 3/4 inches; depth, 6 3/4 inches.

Cadmium-galvanized is the standard finish.

No. Each	Cap. Cir-Circuit Amp.	SIZE MAIN LUGS, AMP.—		Single Pole 125-V. D.C. or A.C.		Double-Pole 125-250-V. D.C. or A.C.	
		A	B	No.	Each	No.	Each
4	15	100	100	FLP41-15	\$155.00	FLP42-15	\$175.00
4	20	100	100	FLP41-20	155.00	FLP42-20	175.00
4	25	100	100	FLP41-25	155.00	FLP42-25	175.00
4	35	100	100	FLP41-35	158.00	FLP42-35	178.00
6	15	100	100	FLP61-15	200.00	FLP62-15	240.00
6	20	100	100	FLP61-20	200.00	FLP62-20	240.00
6	25	100	100	FLP61-25	200.00	FLP62-25	240.00
6	35	100	150	FLP61-35	205.00	FLP62-35	245.00
8	15	100	100	FLP81-15	230.00	FLP82-15	280.00
8	20	100	100	FLP81-20	230.00	FLP82-20	280.00
8	25	100	150	FLP81-25	230.00	FLP82-25	280.00
8	35	100	200	FLP81-35	236.00	FLP82-35	286.00

One compartment may be used for a main circuit breaker (not over 35 amperes) at a slight additional cost.

Type EPC Condulets

Explosion-Proof—Dust-Tight—Vapor-Tight—Weatherproof

Class I, Group D; and Classes II, III, and IV



Circuit Breaker Condulet



Motor Starting Switch Condulet—Air Break



Combination Line Starter Condulet—Air Break

The EPC series Condulets provide maximum safety for arcing devices in hazardous locations. The construction also provides an excellent unit for reliable operation under severe corrosive conditions. Where weatherproof construction is desired, these units are most satisfactory.

USE.—Type EPC Condulets are ideal housings for circuit breakers, across-the-line starters for polyphase induction a.c. motors, magnetic switches, or combinations of circuit breakers with motor starters or with magnetic switches; where used in hazardous locations or where exposed to vapors or weather.

DESIGN.—The EPC Condulet consists of a body with top and bottom openings into which are threaded a cover and a tub.

The body has four conduit hubs all of the same size: Two at the top and two opposite them at the bottom. This convenient hub arrangement makes it possible for the conduit to enter or leave from one or both directions. These hubs are taper tapped and have integral bushings. If conduit smaller than the sizes listed is to be used, Type RE reducers may be employed.

Three substantial mounting lugs are provided: Two at the bottom with open slots; and one at the top with a keyhole. This provision saves time in mounting as the Condulet can be supported by the top bolt while the lower bolts are being located and tightened.

The covers and tubs have tapered threads which make the joint explosion-proof, dust-tight, vapor-tight, and weather-proof. The threads are treated to facilitate removal of the covers and tubs.

The ends of the covers and tubs have grooves into which a bar may be placed for tightening or loosening.

WIRING.—The supporting frame which carries the circuit breaker and/or starting switch, can be detached and removed easily and quickly without dismantling any of these devices.

With the cover, tub, and devices removed, free access is had to the wiring chamber. The feeder and branch circuit conductors can be pulled in without difficulty.

After the conductors are in place, the frame with its devices may be replaced, final connections made, and the tub and cover attached.

ACCESSIBILITY.—Removal of the tub and cover gives complete access to the devices; much more so than when mounted in a conventional rectangular box. Contacts can be repaired or replaced, and examination and adjustments are facilitated, because all sides are exposed.

Prices and further information upon request.

Type FLS General Use Switch Condulets

Schedule CE

Explosion-Proof and Dust-Tight Single Throw, Tumbler



With Switch—Not Fusible

Type FLS Explosion-Proof and Dust-Tight Switch Condulets are general use enclosed switches, rated in amperes, for use in hazardous locations. If used as motor switches, allowance should be made for the locked rotor motor current, which may be five or six times the full load motor current.

The single throw is furnished with switches of the tumbler type, positive quick make and break; therefore, it cannot be held in partial contact.

These Condulets are listed with two hubs, through feed, both hubs for threaded conduit of the same size. Other hub arrangements, hub sizes, and/or union hubs or combinations can be furnished.

Cadmium-galvanized is the standard finish.

RATINGS	Hub Size Through Feed	2-Pole Form 2		3-Pole Form 3	
		No.	Each	No.	Each
5A. 30A.	1/2	FLS102-11	\$22.00	FLS103-11	\$30.00
60A. 30A. 600V. 600V.	3/4	FLS102-22	22.00	FLS103-22	30.00
125V. 250V. D.C. A.C.	1	FLS102-33	22.00	FLS103-33	30.00
	1 1/4	FLS102-44	22.00	FLS103-44	30.00
		Form 6		Form 7	
15A. 100A.	1	FLS106-33	\$60.00		
100A. 100A. 600V. 600V.	1 1/4	FLS106-44	60.00	FLS107-44	\$70.00
125V. 250V. D.C. A.C.	1 1/2	FLS106-55	60.00	FLS107-55	70.00
	2			FLS107-66	70.00
		Form 8		Form 9	
200A. 200A.	1 1/2	FLS108-55	\$75.00	FLS109-55	\$185.00
125V. 230V. D.C. A.C.	2	FLS108-66	75.00	FLS109-66	185.00

Dimensions Over All, Exclusive of Hubs

Forms	2	3	6, 7, 8	9
Length.....inches	10	10	16 3/4	22
Width.....inches	7 1/4	7 7/8	10 1/4	18 1/4
Depth.....inches	7	7 1/4	9	15

Type FLB Condulets

Explosion-Proof and Dust-Tight For Feeder and Branch Circuit Protection



This Condulet is suitable for service entrance, feeder, or branch circuit protection, for lighting, appliance, and motor circuits; but is not recommended as a substitute for motor running protective devices.

Can be furnished to meet the requirements of the U.S. Bureau of Mines.

Can be made weatherproof by the use of vellumoid gaskets under the flange of threaded cover.

Prices and further information upon application.

Type FLF Manual Motor Starting Switch Condulets

Explosion-Proof and Dust-Tight



Designed as explosion-proof and dust-tight housings with operating handles or push buttons for external operation of certain definite manual motor starting switch mechanisms.

Motor starting switches are all of across-the-line starting type with thermal overload trip, and are nearly all three-pole switches. In the N.E.C. they are classed as motor running protective devices.

Listed for threaded hub arrangements. Other hub arrangements and/or union hubs or combinations can be furnished.

Prices and further information upon application.

Type FLM Magnetic Motor Starting Condulets

Explosion-Proof and Dust-Tight



For G-E and Trumbull

Housings for certain definite magnetic, remote control motor starting switches.

Motor starting switches are of across-the-line type with thermostatic trip released by heater units. Provide time limit overload together with no voltage protection. Operated from "start" and "stop" push button station Condulets which may be installed at any convenient location.

Prices and further information upon request.

Delayed Action Arktite Plugs and Receptacles

Schedule CE

Explosion-Proof

For industrial use. Arranged for surface mounting. Receptacle housing is equipped with a spring door.



With Dead End Hub Arrangement

Type CPS Receptacle Equipment
2-Wire, 3-Pole—15-Ampere or 1-Hp., 115 or 230-Volt, 60-Cycle A.C.

Includes Condulet and receptacle.

Takes Type CPP plugs.

Receptacle equipment is made of cast ferrous, cadmium-galvanized finish.

Outside dimensions of body, exclusive of hubs: Diameter, 4 inches; depth, 3 3/8 inches.

Cadmium-galvanized is the standard finish.

Size Hub In.	With Dead End Hub Arrangement		With Through Feed Hub Arrangement	
	No.	Each	No.	Each
1/2	CPS14-120	\$12.90	CPS14-121	\$13.05
3/4	CPS14-20	13.05	CPS14-21	13.25

Type CPP Plugs

For Type CPS receptacle equipment. Furnished with cable grip and rubber bushing. Made of bakelite.



No.	Each	Diam. Cable, In.
CPP312	\$5.00	.250 to .375
CPP412	5.00	.375 to .500
CPP512	5.00	.500 to .625

If specified, Type CPS Receptacle Equipment will be furnished without lugs at a reduction of 10 cents list.

Delayed Action Arktite Plugs and Receptacles

Schedule CE

Explosion-Proof

Type CES Receptacle Equipment

Includes Condulet, receptacle, and receptacle housing. Takes Type CPH plugs.

Receptacle equipment is made of cast ferrous, cadmium-galvanized finish.

Type CES Condulets have 3 hubs; 2 are furnished with threaded pipe plugs.

Style 2—Grounded through Extra Pole and Shell

No.	Each	Size Cond. Hubs In.	Circuit Phases	Max. Hp.	Max. Amp.	Volts at 60 Cyo. A.C.
CES2213	\$23.50	3/4	{ 2-Wire } 1	1 1/2	7	460
			{ 3-Pole } 1	1 1/2	30	230
CES2214	25.00	3/4	{ 3-Wire } 3	1	7	460
			{ 4-Pole } 3	3	30	230

Type CPH Plugs

For Type CES Receptacle Equipment With cable grip and rubber bushing. Made of aluminum. Standard finish, aluminum.

No.	Each	Circuit Phases	Hp.	Amp.	Volts	Diam. Cable, In.
CPH7513	\$11.00	2-Wire } 1	1/2	7	460	.500-.625
CPH7613	11.00						3-Pole } 1 1/2	30	230	.625-.750
CPH7713	11.00	3-Wire } 3	1	7	460	.500-.625
CPH7514	11.75						4-Pole } 3	3	30	230	.625-.750
CPH7614	11.75					
CPH7714	11.75					.750-.875

Type FLF, for G-E CR1062-B7, Trumbull TM2

Delayed Action Arktite Plugs and Receptacles

Schedule CE

For Hospitals—Explosion-Proof

2-Wire, 3-Pole
15-Ampere or 1-H.P., 115 or 230-Volt,
60-Cycle A.C.

The body of type CPS Receptacle Equipment is made of cast Feraloy, cadmium-galvanized finish; the face plate is chromium-plated.

Type CPS Receptacle Equipment



Includes Condulet, receptacle, and one 3/4-inch pipe plug.

Takes type CPP plugs.

Outside dimensions of body, exclusive of hubs: Depth, 2 13/16 inches; diameter, 3 5/8 inches; width and length, 4 3/8 inches.

Cat. No. CPS212
Each. \$20.00
Size Hub. inches 3/4

Type CPS Receptacle Equipment For Type GUEC Condulets



Includes receptacle and threaded adapter.

Takes type CPP plugs.

For use in tile walls or where the conduit must be run at greater depth than is possible with CPS212, or where adjustment of depth, more wiring room, or other hub sizes and arrangements are desired.

Cat. No. CPS21271 CPS21272 CPS21273
Each. \$18.50 19.00 20.00
Dimension A. inches 1 1/8 2 3

Type CPS Receptacle Equipment For Rectangular Opening Wall Boxes



For replacement of non-explosion-proof convenience outlets.

Takes type CPP plugs.

While these receptacles, installed on wall outlet boxes of the usual type, cannot be considered 100% explosion-proof, yet the hazard due to normal operation is eliminated, leaving only the hazards

due to abnormal conditions. Even these hazards may be reduced by sealing each conduit entering the box, and by careful workmanship in making and insulating the joints and splices.

The receptacles with explosion-proof Condulets listed above, should always be used in new installations, and wherever possible in re-wiring old installations. The CPS212-S33 receptacles should be used only where existing convenience outlets, admittedly hazardous in explosive atmospheres, are to be replaced by explosion-proof receptacles, and where it is not practicable to remove the sheet metal wall boxes and replace them with the explosion-proof Condulets used with the receptacles listed above.

A GR terminal is provided for connection to a copper grounding conductor.

Cat. No. CPS212-S33
Each. \$18.50

Type CPP Plugs



For Type CPS receptacle equipment. Furnished with cable grip and rubber bushing.

Made of bakelite.

Cat. No. CPP312 CPP412 CPP512
Each. \$5.00 5.00 5.00
Diam. Cable. in. .250 to .375 .375 to .500 .500 to .625

Threaded Temporary Covers

Schedule CE

Flush Type

For Type GUEC Condulets



Used with type GUEC Condulets which are mounted in the wall to take CPS21271 or CPS21272 receptacles, so as to close the opening after the circuit wires have been pulled in and before the receptacle is installed.

During this period the GUEC Condulet must be regarded as a junction box and must be closed with an explosion-proof cover if the enclosed circuits are alive in a hazardous location.

Made of aluminum alloy.

For Receptacle No.	Diam. Cover Opening, In.	Depth Threads In.	No.	Each
CPS21271	3 5/8	1 3/8	GUA0791	\$1.25
CPS21272	3 5/8	2	GUA0792	1.40

FSQ Series Interlocked Plug Receptacle and Switch Condulets

Schedule CE

Explosion-Proof and Dust-Tight

Class I, Groups C and D; Class II, Group G; and Classes III and IV

2-Wire, 3-Pole { 30-Ampere, 250-V. A.C. or D.C.
2-Hp., 230-V., 1-Hp., 460-V. A.C.
3-Wire, 4-Pole { 30-Amp., 250-V. or 20-Amp., 460-V. A.C. or D.C.
2-Hp., 230-V. or 460-V., 3-Phase A.C.



Type FSQC, with Threaded Housing

Bodies are cylindrical and furnished with hubs for threaded conduit and external mounting lugs with fastening holes. Cover opening is threaded and equipped with a cover which is locked by a special screw so arranged that it locks the switch in off position before it releases cover. Cover cannot be removed while switch is in on position and switch cannot be thrown to on position until cover is locked.

Tumbler switch and plug are mechanically, as well as electrically, connected with receptacle which is rotated by plug to turn switch on and off. Plug cannot be inserted or withdrawn unless switch is in off position and switch

cannot be operated except by plug.

An extra pole in plug and receptacle is provided for grounding conductor in cord.

Furnished with tumbler type switch and receptacle with threaded housing.

Approximate dimensions over all, exclusive of hubs: Height, 9 1/4 inches; diameter of body, 4 1/8 inches; depth, 5 5/8 inches.

Cadmium-galvanized is the standard finish.

Hub Arrangements

Type FSQ

No. Poles	Size In.	No.	Each	Form
2-Wire, 3-Pole	3/4	FSQ232	\$18.00	E
	1	FSQ332	18.20	
3-Wire, 4-Pole	3/4	FSQ233	21.00	F
	1	FSQ333	21.20	

Type FSQC

No. Poles	Size In.	No.	Each	Form
2-Wire, 3-Pole	3/4	FSQC232	\$18.00	E
	1	FSQC332	18.20	
3-Wire, 4-Pole	3/4	FSQC233	21.00	F
	1	FSQC333	21.20	

Order by catalog number. Use type and form number (rather than catalog number) for identification of Condulets for hazardous locations, when consulting Underwriters Laboratories' list of inspected electrical appliances.

A cast aluminum threaded cap with gasket and suspension chain will be furnished, if specified. Add suffix S1 to number and \$1.00 to list price.

Type FSQ Interlocked Receptacle and Switch Condulets

Schedule CE

Explosion-Proof and Dust-Tight

2-Wire, 3-Pole, 10-Ampere, 250-Volt A.C. or D.C. For use in explosion-proof and dust-tight locations. Takes type FP plug.

A threaded cover is locked on by screw so arranged that it locks switch in off position before it releases cover. Cover cannot be removed while switch is in on position, and switch cannot be turned to on position until cover is replaced and locked.



Receptacle is two-wire, three-pole with one pole grounded to Condulet body. It is arranged to interlock with plug mechanically as well as electrically, and can be rotated by plug far enough to turn switch on and off. Switch is two-pole tumbler type.

Plug is three-pole with prongs protected by steel sleeve which has a polarizing guide. Guide follows groove in receptacle housing and, when plug is rotated to turn switch on, it cannot be withdrawn while switch is in on position. Handle of plug is equipped with rubber bushing and cord clamp.

A connection block with binding screws for circuit wires is mounted in body. Outside dimensions, exclusive of hubs: length, 7 3/4 inches; depth, 4 1/4 inches; and diameter, 3 3/8 inches.

Cadmium-galvanized is the standard finish.

Furnished with 2-pole switch and 2-wire, 3-pole receptacle. No. FSQ223, Size, 3/4 Inch.....each \$14.00

Type FP Plugs for Type FSQ Condulets

Schedule CE

2-Wire, 3-Pole, 10-Ampere, 250-Volt A.C. or D.C.

Grounded through extra pole and shell.

Furnished with cable grip and rubber bushing.



No.	Each	Diam. Cable, In.
FP23	\$4.00	.375 to .500

Type EYS Sealing Condulets

Schedule CE

Explosion-Proof

For Sealing Vertical Runs of Conduit

In hazardous locations, Class I, the conduit system should be sectionalized by sealing at frequent intervals.

Type EYS is a small, compact sealing Condulet for use in vertical runs of conduit. Taps or splices within the fitting are not permissible, and it is not recommended where there are more than three or four wires in the conduit. Condulets of the GUA series are convenient for use in horizontal runs, or where there are four or more wires in the conduit.

Furnished with pipe plug.

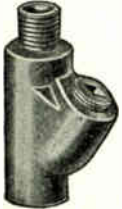
Cadmium-galvanized is the standard finish.

With Female Hub Top and Bottom



Size Inches	DIMENSIONS OF BODY INCHES		Approx. Internal Volumes Cu. In.	No.	Each
	Length	Width			
1/2	3 3/32	2 1/4	1 1/4	EYS1	\$.65
3/4	3 11/16	2 23/32	2 1/2	EYS2	.80
1	4 5/16	3 3/32	4	EYS3	1.05
1 1/4	5 1/16	3 31/32	9	EYS4	1.30
1 1/2	5 1/2	4 17/32	15	EYS5	1.95
2	6 1/4	5 17/32	26	EYS6	2.55
2 1/2	7 1/16	6 15/32	44	EYS7	4.00
3	8 1/2	7 7/8	136	EYS8	5.00

With Male Hub Top and Female Hub Bottom



1/2	3 27/32	2 1/4	1 1/4	EYS16	\$.65
3/4	4 3/8	2 21/32	2 1/2	EYS26	.80
1	5 1/16	3 3/32	4	EYS36	1.05
1 1/4	5 7/8	3 31/32	9	EYS46	1.30
1 1/2	6 3/8	4 17/32	15	EYS56	1.95
2	7 1/8	5 17/32	26	EYS66	2.55
2 1/2	8 1/16	6 15/32	44	EYS76	4.00
3	9 1/2	7 7/8	136	EYS86	5.00

With Female Hub Top and Male Hub Bottom



1/2	3 27/32	2 1/4	1 1/4	EYS17	\$.65
3/4	4 3/8	2 21/32	2 1/2	EYS27	.80
1	5 1/16	3 3/32	4	EYS37	1.05
1 1/4	5 7/8	3 31/32	9	EYS47	1.30
1 1/2	6 3/8	4 17/32	15	EYS57	1.95
2	7 1/8	5 17/32	26	EYS67	2.55
2 1/2	8 1/16	6 15/32	44	EYS77	4.00
3	9 1/2	7 7/8	136	EYS87	5.00

Type EZS Sealing Condulets

Schedule CE

Explosion-Proof

Class I, Groups C and D

With Female Hub Top and Bottom

For Sealing Vertical or Horizontal Runs of Conduit

Provides ample room for placing dams around and between conductors, preparatory to sealing. Threaded covers.

Furnished with pipe plug.

Cadmium-galvanized is the standard finish.



Size Hub In.	DIMEN., IN.		APPROX. INT. VOL., CU. IN.		No.	Each
	Length	Diam.	VERT. MOUNTING	HOR. MOUNTING		
1/2	4 3/16	3 3/8	5 1/2	5 1/2	EZS1	\$1.15
3/4	4 3/8	3 3/8	6	6	EZS2	1.45
1	4 15/16	3 31/32	9	9	EZS3	1.85
1 1/4	5 1/16	4 1/2	12 1/2	12 1/2	EZS4	2.35
1 1/2	5 3/8	4 3/8	14	14	EZS5	3.50
2	7 1/16	5 1/8	46	46	EZS6	4.60
2 1/2	7 15/16	5 3/8	55	55	EZS7	7.40
3	8 5/8	6 1/8	88	88	EZS8	10.70

Chico A4 Sealing Compound

Schedule CE

For sealing explosion-proof Condulets. Not affected by gasoline, alcohol, acetone, ether, naphtha, petroleum, benzol, or lacquer solvent.

No.	Per Pkg.	Description of Package	*Vol. Cu. In.	Wt. Lb.
Chico A4	\$1.00	Friction Top Can	16	†1

*Number of cubic inches volume this amount will fill when set. †With 3/4-ounce Chico X fiber.

Condulet Unions

Schedule CE

Explosion-Proof and Dust-Tight

Cadmium-galvanized is the standard finish.

Type UNY—Male

For connecting conduit to a conduit.



Size Inches	DIMEN., IN.		Std. Pkg.	No.	Each
	Length	Diam.			
1/2	2 1/16	1 1/2	50	UNY105	\$.50
*3/4 to 1/2	2 1/8	1 3/4	50	UNY215	.50
3/4	2 1/8	1 3/4	50	UNY205	.65
1	2 5/16	2	25	UNY305	.95
1 1/4	2 15/16	2 13/16	25	UNY405	1.90
1 1/2	3 1/8	3 1/16	25	UNY505	2.30
2	3 1/4	3 1/16	10	UNY605	3.65

Type UNF—Female

For connecting conduit to conduit.



1/2	1 3/4	1 1/2	50	UNF105	\$.50
*3/4 to 1/2	1 3/4	1 3/4	50	UNF215	.50
3/4	1 3/4	1 3/4	50	UNF205	.65
1	1 15/16	2 1/16	25	UNF305	.95
1 1/4	2	2 15/16	25	UNF405	1.90
1 1/2	2 3/16	3 1/8	25	UNF505	2.30

*Male end is given first.

Type EL Condulet Elbows

Schedule CE

Explosion-Proof and Dust-Tight

Cadmium-galvanized is the standard finish.

45° Female



Size In.	Dimen. A, In.	Std. Pkg.	No.	Each
3/4	1 5/16	100	EL2	.25
1	1 11/16	50	EL3	.30
1 1/4	1 11/16	25	EL4	.65
1 1/2	2	10	EL5	.75
2	2 3/4	5	EL6	1.20
2 1/2	2 3/4	5	EL7	2.70
3	3	5	EL8	3.15
3 1/2	3 3/16	5	EL9	4.95
4	3 3/4	5	EL10	5.55

90° Male



1/2	1 1/2	200	EL195	\$.25
3/4	1 5/8	100	EL295	.35
1	1 7/8	50	EL395	.45
1 1/4	2 1/8	25	EL495	.75

90° Female



1/2	1 7/16	200	EL19	\$.25
3/4	1 9/16	100	EL29	.35
1	1 11/16	50	EL39	.45
1 1/4	2 1/16	25	EL49	.75
1 1/2	4	10	EL59	1.50
2	5	5	EL69	2.50
2 1/2	6 1/16	5	EL79	4.75

QE Series Condulets

Schedule CR

Take housings for snap switches and plug receptacles. Cadmium-galvanized is the standard finish.

Type QE



Size In.	Std. Pkg.	No.	Each	Form
1/2	25	QE110	\$.90	10
3/4	25	QE210	1.00	10
1	25	QE310	1.10	10
1/2	25	QE120	1.30	20
3/4	25	QE220	1.40	20
1	25	QE320	1.50	20
1 1/4	25	QE420	1.60	20
1 1/2	25	QE520	1.70	20

Type QEC



Size In.	Std. Pkg.	No.	Each	Form
1/2	25	QEC110	\$1.00	10
3/4	25	QEC210	1.10	10
1	25	QEC310	1.20	10
1/2	25	QEC120	1.40	20
3/4	25	QEC220	1.50	20
1	25	QEC320	1.60	20
1 1/4	25	QEC420	1.70	20
1 1/2	25	QEC520	1.80	20

Type QEE



Size In.	Std. Pkg.	No.	Each	Form
1/2	25	QEE110	\$1.00	10
3/4	25	QEE210	1.10	10
1	25	QEE310	1.20	10
1/2	25	QEE120	1.45	20
3/4	25	QEE220	1.55	20
1	25	QEE320	1.65	20
1 1/4	25	QEE420	1.75	20
1 1/2	25	QEE520	1.85	20

Type QEG



Size In.	Std. Pkg.	No.	Each	Form
1/2	25	QEG110	\$1.20	10
3/4	25	QEG210	1.30	10
1	25	QEG310	1.40	10
1/2	25	QEG120	1.70	20
3/4	25	QEG220	1.80	20
1	25	QEG320	1.90	20
1 1/4	25	QEG420	2.00	20
1 1/2	25	QEG520	2.10	20

Type QEJ



Size In.	Std. Pkg.	No.	Each	Form
1/2	25	QEJ110	\$1.30	10
3/4	25	QEJ210	1.40	10
1	25	QEJ310	1.50	10
1 1/2	25	QEJ510	1.70	10
1/2	25	QEJ120	1.75	20
3/4	25	QEJ220	1.85	20
1	25	QEJ320	1.95	20
1 1/4	25	QEJ420	2.05	20
1 1/2	25	QEJ520	2.15	20

Type QED



Size In.	Std. Pkg.	No.	Each	Form
1/2	25	QED110	\$1.45	10
3/4	25	QED210	1.55	10
1	25	QED310	1.65	10
1/2	25	QED120	1.90	20
3/4	25	QED220	2.00	20
1	25	QED320	2.10	20
1 1/4	25	QED420	2.20	20
1 1/2	25	QED520	2.30	20

Type RQ Plugs

30 Amperes, 250 Volts



For QE housings.

Pole	Std. Pkg.	No.	Each
2	25	RQ302	\$3.50
*3	25	RQ2302	3.50
3	25	RQ303	5.00

*Third pole grounded.

Type QE Plug Receptacle Housings

Take Type RQ plugs.

The 2-pole housings are furnished with 30-ampere, 250-volt receptacle RQH302; 3-pole housings are furnished with 30-ampere, 250-volt receptacle RQH303; 2-wire, 3-pole housings, with 30-ampere, 250-volt receptacle RQH2302. Cadmium-galvanized is the standard finish.

With Spring Door



Pole	Std. Pkg.	No.	Each	For QE Series Form
2	25	QE1066	\$3.60	10
*3	25	QE1266	3.90	10
3	25	QE2066	5.10	20

Without Spring Door



Pole	Std. Pkg.	No.	Each	For QE Series Form
2	25	QE106	\$2.80	10
*3	25	QE126	3.10	10
3	25	QE206	4.10	20

*Third pole grounded.

Type BRME Plug Receptacle Condulets

Schedule CR

30° Angle

Cast Ferrelloy

†30 Amperes, 250 Volts A.C.

Take Type BP plugs.

The 2-pole Condulets are furnished with 30-ampere, 250-volt receptacle BR2302; 3-pole Condulets are furnished with 30-ampere, 250-volt receptacle BR2303; 4-pole Condulets are furnished with 30-ampere, 250-volt receptacle BR2304. Cadmium-galvanized is the standard finish.

With Spring Door

2-Pole

Size In.	Std. Pkg.	No.	Each
1/2	25	BRME61302	\$3.75
3/4	25	BRME62302	3.85

3-Pole

3/4	25	BRME62303	\$4.45
1	25	BRME63303	4.55

4-Pole

3/4	25	BRME62304	\$6.15
1	25	BRME63304	6.25

Without Spring Door

2-Pole

Size In.	Std. Pkg.	No.	Each
1/2	25	BRME1302	\$2.50
3/4	25	BRME2302	2.60

3-Pole

3/4	25	BRME2303	\$3.20
1	25	BRME3303	3.30

4-Pole

3/4	25	BRME2304	\$3.90
1	25	BRME3304	4.00

With Threaded Cap

2-Pole

Size In.	Std. Pkg.	No.	Each
1/2	25	BRME81302	\$3.65
3/4	25	BRME82302	3.75

3-Pole

3/4	25	BRME82303	\$4.80
1	25	BRME83303	4.90

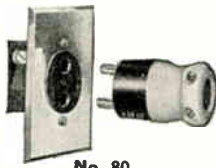
4-Pole

3/4	25	BRME82304	\$5.75
1	25	BRME83304	5.85

†Can be used on 25-ampere, 125-volt d.c. circuits; or on 30-ampere, 250-volt d.c. circuits if circuit is broken before plug is withdrawn.

R & S Flush Receptacles and Plugs

30 Amperes—250 Volts—2 and 3-Wire—Polarized
For Standard Outlet Box Raised Covers



No. 80

Bakelite receptacle and plug with self-aligning contacts. Plug will fit other fittings. Brass plate, 2 3/4 x 4 1/2 inches. Standard finish, brush brass; other finishes extra.

Style	COMPLETE			PLUG ONLY		
	No.	Each	Approx. Wt. Lb.	No.	Each	Approx. Wt. Lb.
2-Wire	80	\$3.75	1	556	\$1.80	1/4
3-Wire	81	4.50	1 1/2	157	2.10	3/4

R & S Surface Type Weathertight Receptacles and Plugs

30 Amperes—250 Volts—2 and 3-Wire—Polarized



No. 83

Bakelite receptacle and plug with heavy self-aligning contacts. Cable grip is incorporated in cast aluminum handle. Plug will fit other fittings. Maximum conduit, 1 1/4 inches. Specify size and location of outlets when ordering.

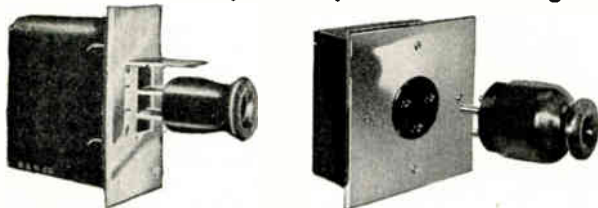
Cast iron box with flap cover. Box: single gang, 4 1/2 x 3 x 2 1/8 in.; double

gang, 4 1/2 x 6 x 3 in.

Aluminized finish; other finishes extra.

Style	COMPLETE			PLUG ONLY		
	No.	Each	Approx. Wt. Lb.	No.	Each	Approx. Wt. Lb.
2-Wire	82	\$6.00	4	282	\$12.00	7
3-Wire	83	7.00	4 1/2	283	14.00	8

R & S Flush Type Receptacles and Plugs



No. 14

No. 1762

Receptacle and plug interiors are made of moulded composition with heavy self-aligning machined contacts. Plug will also fit other fittings. Specify size and location of outlets when ordering.

60 Amperes—250 Volts—Polarized

Cast iron box, 6 x 3 1/2 x 4 1/2 inches. Maximum conduit, 1 1/4 inches. Brass plate, 7 x 4 inches with flush gravity flap. Aluminized finish.

Style	COMPLETE			PLUG ONLY		
	No.	Each	Approx. Wt. Lb.	No.	Each	Approx. Wt. Lb.
2-Wire	14	\$20.00	7 1/4	140	\$3.00	1/2

60 and 100 Amperes—250 Volts—Polarized

Heavy gage japanned steel box. Standard finish, brush brass. Other finishes extra.

60 Amperes

Brass plate, 6x6 in. Max. conduit, 1 1/2 in. (slip hole).

Style	COMPLETE			PLUG ONLY		
	No.	Each	Approx. Wt. Lb.	No.	Each	Approx. Wt. Lb.
2-Wire	1752	\$12.00	4 9/16 x 4 9/16 x 3 3/4	4	140	\$3.00
3-Wire	1762	14.00	5 x 5 x 3	4 1/2	150	4.00
4-Wire	1763	16.00	5 x 5 x 3	4 1/2	337	5.00

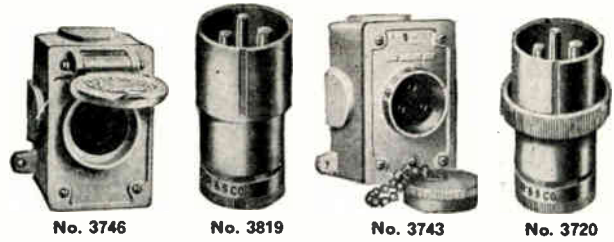
100 Amperes

Brass plate, 8x8 in. Max. conduit, 3/2 in. (slip hole).

3-Wire	1791	\$24.00	6 3/4 x 6 3/4 x 6	8	975	\$6.00
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R & S Type FS & FD Receptacles and Plugs

Standard Service



No. 3746

No. 3819

No. 3743

No. 3720

Receptacle and plug interiors of moulded bakelite with machined brass self-aligning contacts. Plugs have silicon aluminum housings. Maximum outlet, 1 inch 4-way. Specify size and location when ordering. Cast iron boxes have aluminized finish; cast brass, bright dip.

Weathertight

Style	A.C. Volts	D.C. Volts	RECEPTACLES		PLUGS		Max. Cable Inches		
			Cast Iron with No. 3701 Box	Cast Brass with No. 3721 Box	No.	Each			
*2-W. 2-P.	10	20	3745	\$3.30	3765	\$6.30	3818	\$3.00	27/32
2-W. 3-P.	10	20	3746	3.80	3766	6.80	3819	3.50	27/32
3-W. 4-P.	10	20	3747	4.30	3767	7.30	3820	4.00	27/32
*2-W. 2-P.	20	130	3755	4.80	3768	7.80	3828	3.50	1 1/16
2-W. 3-P.	20	130	3756	5.30	3769	8.30	3829	4.00	1 1/16
3-W. 4-P.	20	130	3757	5.80	3770	8.80	3830	4.50	1 1/16

Watertight

*2-W. 2-P.	10	20	3742	\$3.30	3762	\$6.30	3710	\$3.00	27/32
2-W. 3-P.	10	20	3743	3.80	3763	6.80	3720	3.50	27/32
3-W. 4-P.	10	20	3744	4.30	3764	7.30	3730	4.00	27/32
*2-W. 2-P.	20	130	3752	4.80	3772	7.80	3740	3.50	1 1/16
2-W. 3-P.	20	130	3753	5.30	3773	8.30	3750	4.00	1 1/16
3-W. 4-P.	20	130	3754	5.80	3774	8.80	3760	4.50	1 1/16

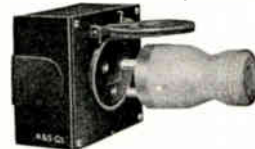
*No provision for equipment grounding. All others have equipment ground through separate pole.

†Also rated at 30 amperes, 250 volts d.c.

Can also be furnished in reverse service.

R & S Surface Type Weathertight Receptacles and Plugs

75 Amperes—440 Volts—3-Wire—Polarized
100 Amperes—250 Volts—3-Wire—Polarized



No. 85

Cast iron box with flush cover. Aluminized finish. Specify size and location of outlets when ordering.

To be used in series with switches and not for closing or opening circuits under load.

Receptacle and plug interiors are made of moulded composition with self-aligning machined contacts. Cable grip is incorporated in hard maple plug handle.

Amp.	No.	Each	COMPLETE		PLUG ONLY		
			Size Box Inches	Max. Conduit Approx. Wt. Lb.	No.	Each	
75	85	\$20.00	6 3/4 x 6 3/4 x 3 1/2	2	14 1/2	151	\$5.00
100	1785	26.00	6 3/4 x 6 3/4 x 6	3 1/2	21 1/2	975	6.00

R & S Type FS & FD Watertight Receptacles and Plugs

For Sound and Control Circuit Service
5 Amperes—250 Volts A.C.—Polarized



No. 3865

Receptacle and plug interiors are made of moulded bakelite with machined brass self-aligning contacts having integral terminals for soldered connections. Plugs have silicon aluminum housings. Maximum outlet, 1 inch, 4-way. Specify size and location when ordering. Cast iron boxes have aluminized finish; cast brass, bright dip.



No. 3878

Style	RECEPTACLES		PLUGS		Max. Cable Inches	
	Cast Iron with No. 3701 Box	Cast Brass with No. 3721 Box	No.	Each		
5-Pole	3865	\$6.00	3875	\$9.00	3878	\$5.00
6-Pole	3866	6.50	3876	9.50	3879	5.50
7-Pole	3867	7.00	3877	10.00	3880	6.00

Can also be furnished in reverse service.

R & S Cable Connectors

15 Amperes—250 Volts—2-Wire—Reversible



No.	Compo- sition Each	Fiber Each	Description	Approx. Wt. Lb.
95	\$1.20	\$2.00	Connector Complete.....	1/2
194	.60	1.20	Female End Only.....	1/4
297	.60	1.20	Male End Only.....	1/4

R & S Welding Connectors

200 Amperes—Single-Pole—With Bayonet Lock



Inner shell natural horn fiber, outer casing soft black rubber. Overall length assembled, 10 1/2 in.; diam., 1 1/8 in.

No.	Each	Description	Approx. Wt. Lb.
900	\$8.00	Connector Complete.....	1 1/2
901	3.00	Male End Only.....	3/4
902	5.00	Female End Only.....	3/4

R & S Watertight Connectors

Standard Service

Interior is of moulded bakelite with machined brass self-aligning contacts.

Housing is of silicon aluminum complete with watertight cable outlet and watertight brass screw collar.



No. 3720
Male End



No. 3913
Female End

10 Amperes—440 Volts A.C.—250 Volts D.C.

20 Amperes—125 Volts D.C.

Style	Max. Cable Inches	CONNECTOR COMPLETE		MALE END ONLY		FEMALE END ONLY	
		No.	Each	No.	Each	No.	Each
*2-Wire 2-Pole	2 1/2	3902	\$6.50	3710	\$3.00	3912	\$3.50
2-Wire 3-Pole	2 1/2	3903	7.50	3720	3.50	3913	4.00
3-Wire 4-Pole	2 1/2	3904	8.50	3730	4.00	3914	4.50

20 Amperes—440 Volts A.C.

30 Amperes—250 Volts D.C.

*2-Wire 2-Pole	1 1/8	3922	\$7.50	3740	\$3.50	3932	\$4.00
2-Wire 3-Pole	1 1/8	3923	8.50	3750	4.00	3933	4.50
3-Wire 4-Pole	1 1/8	3924	9.50	3760	4.50	3934	5.00

*Has no provision for equipment grounding. All others have equipment ground through separate pole.

These connectors can also be furnished for sound and control circuit service.

R & S Battery Charging Cable Connectors

100 Amperes—250 Volts—2-Wire—Polarized



Nos. 92B and 92C

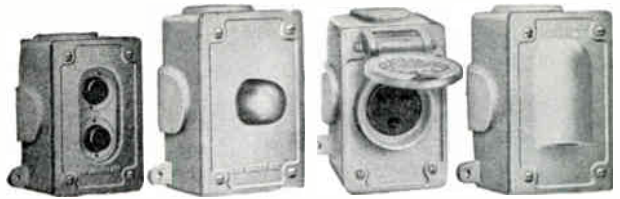
Nos. 991C and 991B

For charging batteries or connecting cables. Especially designed for industrial electric trucks, provision being made for battery tray mounting. Bakelite interior, cast aluminum housing and large self-aligning machined contacts.

Description	CABLE END No.	Each	BATTERY END No.	Each
For Round Cable with Cable Grips	90C	\$4.50	90B	\$4.00
For Flat Cable.....	91C	4.25	91B	3.75
For Round Cable with Spring Clip.	92C	4.50	92B	4.25
For Flat Cable with Side Latches.	991C	4.25	991B	5.00

These connectors can also be supplied with 3rd contacts or metering connection at \$2.00 extra.

R & S Type FS & FD Conduit Box Fittings



No. 3749

No. 3801

No. 3908

No. 3831

Maximum outlets, 1 inch, 4-way. Specify size and location when ordering.

Cast iron boxes have aluminized finish; cast brass, bright dip. Covers and other exposed parts are finished to match boxes.

Watertight Push Button Stations

Maximum Rating—5 Amperes—600 Volts—Inductive

Description	CAST IRON WITH No. 3701 Box		CAST BRASS WITH No. 3721 Box	
	No.	Each	No.	Each
Start (Normally Open).....	3741	\$6.00	3751	\$9.00
Stop (Normally Closed).....	3748	6.00	3758	9.00
Start and Stop.....	3749	7.50	3759	10.50

Watertight Pilot Light Indicators

Complete with 110-Volt Lamp

Clear Lens.....	3801	\$5.00	3811	\$8.00
Red Lens.....	3801R	5.00	3811R	8.00
Green Lens.....	3801G	5.00	3811G	8.00
Amber Lens.....	3801A	5.00	3811A	8.00

Weatheright Convenience Receptacles

15 Amperes—125 Volts—2-Pole

2-Pole.....	3908	\$3.00	3918	\$6.00
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Weatheright Cable Outlets

1/2-Inch Max. Cable.....	3831	\$3.00	3841	\$6.00
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R & S Type FS & FD Conduit Box Switches



No. 3705

No. 3802

No. 3832

Maximum outlets, 1 inch, 4-way. Specify size and location when ordering.

Tumbler type switches are included. Special switches can be supplied upon request.

Cast iron have aluminized finish; cast brass, bright dip.

Watertight

Style	AMPERES		CAST IRON WITH No. 3701 Box		CAST BRASS WITH No. 3721 Box	
	125 Volts	250 Volts	No.	Each	No.	Each
Single-Pole	20	10	3705	\$4.00	3725	\$7.00
2-Pole	20	20	3706	5.00	3726	8.00
3-Pole	10	10	3707	8.00	3727	11.00
3-Way	20	10	3708	6.00	3728	9.00
4-Way	5	2	3709	10.00	3729	13.00

Weatheright

Single-Pole	20	10	3802	\$4.00	3812	\$7.00
2-Pole	20	20	3803	5.00	3813	8.00
3-Pole	10	10	3804	8.00	3814	11.00
3-Way	20	10	3805	6.00	3815	9.00
4-Way	5	2	3806	10.00	3816	13.00

Protected

Single-Pole	20	10	3832	\$3.50	3852	\$6.50
2-Pole	20	20	3833	4.50	3853	7.50
3-Pole	10	10	3834	7.50	3854	10.50
3-Way	20	10	3835	5.50	3855	8.50
4-Way	5	2	3836	9.50	3856	12.50

R & S Marine Watertight Cast Receptacles and Plugs

Standard Round Type

10 Amperes—125 Volts—2-Wire—Polarized

Made of cast brass.

Diameter of box, 3 inches; depth, 1 5/8 inches.

Maximum conduit, 3/4 inch, 1-way. Specify size of outlet when ordering.



No. 447

Style	COMPLETE			PLUG ONLY		
	No.	Each	Approx. Wt. Lb.	No.	Each	Approx. Wt. Lb.
2-Wire	447	\$4.00	2	452	\$1.00	1/4

Standard Rectangular Type—Single Gang

10 Amperes—125 Volts—2, 3, and 4-Wire—Polarized

Made of cast brass.

Maximum conduit, 3/4 inch—straight through.

Specify size and location of outlets when ordering.



No. 479

Style	COMPLETE			PLUG ONLY			
	No.	Each	Size Box Inches	Approx. Wt. Lb.	No.	Each	Approx. Wt. Lb.
2-Wire	479	\$4.50	4 3/4 x 3 1/4 x 1 1/16	2 3/4	452	\$1.00	1/4
3-Wire	1479	5.50	4 3/4 x 3 1/4 x 1 1/16	3	1453	1.50	1/4
4-Wire	1579	8.50	4 x 4 x 1 1/2	3 1/2	1463	2.50	1/2

Standard Rectangular Type—2, 3, and 4-Gang

10 Amperes—125 Volts—2 Wire—Polarized

Made of cast brass.

Maximum conduit, 3/4 inch—straight through.

Specify size and location of outlets when ordering.



No. 495

Style	COMPLETE			PLUG ONLY			
	No.	Each	Size Box Inches	Approx. Wt. Lb.	No.	Each	Approx. Wt. Lb.
2-Gang 2-Plug	495	\$6.50	4 3/4 x 3 1/4 x 1 1/16	3 1/2	452	\$1.00	1/4
3-Gang 3-Plug	638	10.00	6 3/4 x 3 1/4 x 1 1/16	4 1/2	...	...	...
4-Gang 4-Plug	639	15.00	8 x 3 1/2 x 1 1/16	6 1/4	...	...	...

Can also be supplied with overhang cover for flush mounting. Prices upon application.

R & S Marine Watertight Cast Switches and Receptacles

Interlocked Switch and Receptacle with Plug

10 and 30 Amperes—125 Volts—2 and 3-Wire—Polarized

For garages, tank steamers, oil refineries, mines, gas works, etc. Made of cast brass. All switches are double pole.

No. 548, maximum conduit, 1 inch, 4-way. No. 684, maximum conduit, 1 1/2 inches, 4-way. Specify size and location of outlets when ordering.



No. 548

10 Amperes

Style	COMPLETE			PLUG ONLY			
	No.	Each	Size Box Inches	Approx. Wt. Lb.	No.	Each	Approx. Wt. Lb.
2-W. 2-P.	548	\$20.00	6 1/4 x 4 1/4 x 2	8	549	\$2.00	1/4
*2-W. 3-P.	684	22.00	6 1/4 x 4 1/4 x 2	8	697	2.50	1/4

30 Amperes

2-W. 2-P.	678	\$40.00	8 1/4 x 4 3/4 x 2 7/8	15 1/2	1488	\$5.00	1/4
*2-W. 3-P.	698	45.00	8 1/4 x 4 3/4 x 2 7/8	18	699	8.00	1 1/2

*Third pole is for equipment grounding.

R & S Marine Watertight Snap Switches

Made of cast brass. Outlets: 10 amperes, maximum conduit, 3/4 inch—straight through. Specify size and location of outlets when ordering.

10 Amperes—125 Volts



No. 448



No. 496

Single and double pole switches have bakelite reciprocating interiors with extra branch connecting screws.

Round Boxes

Style	Amp.	No.	Each	Size Box Inches	Approx. Wt. Lb.
Single-Pole	10	448	\$4.00	3 x 1 1/8	1 1/4
2-Pole	10	1520	4.50	3 x 1 5/8	1 3/4
3-Way	10	1522	6.00	3 x 1 5/8	1 3/4

Rectangular Boxes

Style	Amp.	No.	Each	Size Box Inches	Approx. Wt. Lb.
Single-Pole	10	496	\$4.00	4 3/4 x 3 1/4 x 1 1/16	2 1/4
2-Pole	10	1493	4.50	4 3/4 x 3 1/4 x 1 1/16	2 1/2
3-Way	10	1496	5.00	4 3/4 x 3 1/4 x 1 1/16	3 3/4

Gang Type

10 Amperes—125 Volts—Single and Double Pole



No. 627

Style	SINGLE POLE		DOUBLE POLE		Size Box Inches	Approx. Wt. Lb.
	No.	Each	No.	Each		
2-Gang	627	\$6.50	631	\$7.50	4 3/4 x 3 1/4 x 1 1/16	3
3-Gang	628	10.00	632	11.50	6 3/4 x 3 1/4 x 1 1/16	5
4-Gang	629	15.00	633	17.00	8 x 3 1/2 x 1 1/16	6

Switch and Receptacle with Plugs

10 Amperes—125 Volts—2 Wire



No. 478

No. 478 box, 4 3/4 x 3 1/4 x 1 1/16 inches. No. 498 box, 6 1/4 x 3 1/4 x 1 1/16 inches.

Combination of single or double pole switch and one or two receptacles mounted in one box.

Other combinations on special order. Prices upon application.

Description	WITH S.P. SWITCH		WITH D.P. SWITCH		Approx. Wt. Lb.
	No.	Each	No.	Each	
With 1 Receptacle and 1 Plug...	478	\$6.00	1478	\$6.50	3
With 2 Receptacles and 2 Plugs...	498	10.00	1498	10.50	5
Plug.....	452	1.00	452	1.00	1/4

R & S Watertight Glands

For Armored Cable, Rubber Covered Cable or Flexible Conduit



No. 215

A watertight connection for tapped outlets in junction or pull boxes.

Brass sleeve threaded to fit holes as listed. Provided with stuffing nut.

No.	Each	Description	Approx. Wt. Lb.
215	\$.55	For 1/2-Inch Tapped Hole.....	3/4
216	.75	For 3/4-Inch Tapped Hole.....	1 1/4
217	1.00	For 1-Inch Tapped Hole.....	5/4
218	1.50	For 1 1/4-Inch Tapped Hole.....	3/4

Can also be supplied in larger sizes. Prices upon application.

R & S Watertight Air Break Cast Circuit Breakers



Frame ratings are from 15 to 50 amperes, 50 to 100 amperes, 50 to 225 amperes and 225 to 600 amperes either 230 volts a.c.—125/250 volts d.c. or 600 volts a.c.—250 volts d.c. The maximum rating of each frame size indicates the maximum continuous current-carrying capacity of that frame. On all frames except the 15 to 50-ampere size, the thermal and magnetic trip is built into a separate unit, so that the breaker rating can be changed by changing the trip unit. Within the capacity limitations of the various frames, trip units are available in ratings corresponding to standard wire and cable sizes. The breaker unit comes complete with the trip unit assembled to it and requires no adjusting on installation.

Made of cast iron. Aluminized finish.

Furnished complete with or without circuit breaker.

Enclosures are provided with heavy pads top and bottom for conduit tapping. Specify size and location of outlets when ordering. Catalog numbers determine size of frame, ampere rating and voltage, and should also be given complete when ordering.

50-Ampere Frame

Amp.	Single Pole 125 V. A.C. or D.C.		*ENCLOSURE WITHOUT BREAKER		2-Pole 125/250 V. A.C. or D.C.		*ENCLOSURE WITHOUT BREAKER		3-Pole 125/250 V. A.C. or D.C.		*ENCLOSURE WITHOUT BREAKER	
	COMPLETE BREAKER AND ENCLOSURE No.	Each	No.	Each	COMPLETE BREAKER AND ENCLOSURE No.	Each	No.	Each	COMPLETE BREAKER AND ENCLOSURE No.	Each	No.	Each
15	WP4296-15	\$21.00	WP4296	\$16.00	WP4297-15	\$27.50	WP4297	\$16.00	WP4258-15	\$45.00	WP4258	\$25.00
20	WP4296-20	21.00			WP4297-20	27.50			WP4258-20	45.00		
25	WP4296-25	21.00			WP4297-25	27.50			WP4258-25	45.00		
35	WP4296-35	22.50			WP4297-35	29.00			WP4258-35	46.50		
50	WP4296-50	22.50			WP4297-50	29.00			WP4258-50	46.50		

Amp.	2-Pole 600 V. A.C.—250 V. D.C.		*ENCLOSURE WITHOUT BREAKER		3-Pole 600 V. A.C.—250 V. D.C.		*ENCLOSURE WITHOUT BREAKER	
	COMPLETE BREAKER AND ENCLOSURE No.	Each	No.	Each	COMPLETE BREAKER AND ENCLOSURE No.	Each	No.	Each
15	WP4209V600-15	\$60.00	WP4209	\$30.00	WP4257V600-15	\$65.00	WP4257	\$30.00
20	WP4209V600-20	60.00			WP4257V600-20	65.00		
25	WP4209V600-25	60.00			WP4257V600-25	65.00		
35	WP4209V600-35	61.50			WP4257V600-35	67.50		
50	WP4209V600-50	61.50			WP4257V600-50	67.50		

100-Ampere Frame

Amp.	2-Pole 230 V. A.C.		*ENCLOSURE WITHOUT BREAKER		3-Pole 230 V. A.C.		*ENCLOSURE WITHOUT BREAKER	
	COMPLETE BREAKER AND ENCLOSURE No.	Each	No.	Each	COMPLETE BREAKER AND ENCLOSURE No.	Each	No.	Each
50	WP4219V250-50	\$92.00	WP4219	\$55.00	WP4259V250-50	\$102.00	WP4259	\$55.00
70	WP4219V250-70	93.50			WP4259V250-70	104.50		
90	WP4219V250-90	96.00			WP4259V250-90	107.00		
100	WP4219V250-100	97.50			WP4259V250-100	109.50		
	WP4219V600-50	\$100.00			WP4259V600-50	\$115.00		

225-Ampere Frame

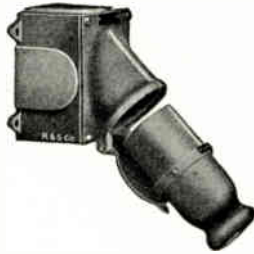
Amp.	2-Pole 230 V. A.C.		*ENCLOSURE WITHOUT BREAKER		3-Pole 230 V. A.C.		*ENCLOSURE WITHOUT BREAKER	
	COMPLETE BREAKER AND ENCLOSURE No.	Each	No.	Each	COMPLETE BREAKER AND ENCLOSURE No.	Each	No.	Each
50	WP4229V250-50	\$170.00	WP4229	\$80.00	WP4269V250-50	\$205.00	WP4269	\$80.00
70	WP4229V250-70	170.00			WP4269V250-70	205.00		
90	WP4229V250-90	170.00			WP4269V250-90	205.00		
100	WP4229V250-100	170.00			WP4269V250-100	205.00		
	WP4229V600-50	\$195.00			WP4269V600-50	\$235.00		

600-Ampere Frame

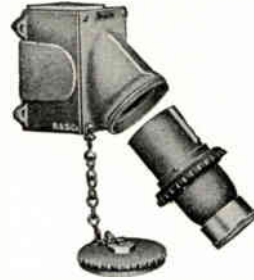
Amp.	2-Pole 600 V. A.C.		*ENCLOSURE WITHOUT BREAKER		3-Pole 600 V. A.C.		*ENCLOSURE WITHOUT BREAKER	
	COMPLETE BREAKER AND ENCLOSURE No.	Each	No.	Each	COMPLETE BREAKER AND ENCLOSURE No.	Each	No.	Each
225	WP4239V250-225	\$425.00	WP4239	\$175.00	WP4279V250-225	\$485.00	WP4279	\$175.00
250	WP4239V250-250	436.00			WP4279V250-250	500.00		
275	WP4239V250-275	440.00			WP4279V250-275	505.00		
300	WP4239V250-300	444.00			WP4279V250-300	510.00		
	WP4239V600-225	\$450.00			WP4279V600-225	\$525.00		

*Customer's breakers will be assembled in the above housings at an additional charge. Prices furnished upon request.

R & S Angle Type Receptacles, Plugs and Cable Connectors



Type A, Weathertight



Type B, Watertight

Designed for use with 2, 3, and 4-wire systems. Provided for equipment grounding in either of two ways: by means of a conducting path through the housings, using the ground connection of the conduit system; or by means of an additional pole which connects the casings of the portable equipment directly to the ground.

On the weathertight type the box and receptacle housing is heavy aluminized iron casting with gaskets and aluminized cast iron hinged spring flap cover. Spring is concealed and packed with grease to insure easy action of the cover. The watertight type housing is provided with a screw thread to take gasketed aluminized brass cap and plug collar.

Plug housing is silicon aluminum alloy casting. Weather-tight type has concealed, adjustable cable grip. Watertight type has stuffing gland cable outlet. External rib provides visual indication for plug insertion.

Interiors are fitted with accurately machined contact members which have provision for direct wire connections. Interiors can only be assembled in plug and receptacle housings in polarized positions.

Weather-tight connectors have concealed cable grip in each end. Watertight connectors have stuffing glands in each end and a gasketed screw type locking collar.

R & S Angle Type Receptacles and Plugs

15 to 200 Amperes—250 Volts D.C.—440 Volts A.C.

Type A—Weathertight

2, 3, and 4-Wire—Polarized

15 Amperes

Style	No.	Receptacles without Plugs				Plugs Only			
		SINGLE GANG		DOUBLE GANG		Each	Approx. Wt. Lb.		
2-W. 2-P.	3102	\$5.40	4½	3109	\$10.80	7	3106	\$3.90	5/8
*2-W. 3-P.	3103	6.00	4½	3110	12.00	7	3107	4.50	5/8
3-W. 3-P.	3103W	6.00	4½	3110W	12.00	7	3107W	4.70	5/8
*3-W. 4-P.	3104	6.60	4½	3111	13.20	7	3108	5.10	5/8
4-W. 4-P.	3104W	6.60	4½	3111W	13.20	7	3108W	5.30	5/8

30 Amperes

*2-W. 2-P.	3112	\$6.00	6	3119	\$12.00	10	3116	\$3.90	5/8
2-W. 3-P.	3113	6.60	6	3120	13.20	10	3117	4.50	5/8
*3-W. 3-P.	3113W	6.60	6	3120W	13.20	10	3117W	4.70	5/8
3-W. 4-P.	3114	7.20	6	3121	14.40	10	3118	5.10	5/8
4-W. 4-P.	3114W	7.20	6	3121W	14.40	10	3118W	5.30	5/8

60 Amperes

2-W. 2-P.	3122	\$10.20	8½	3129	\$20.40	15	3126	\$5.40	1¼
*2-W. 3-P.	3123	10.80	8½	3130	21.60	15	3127	6.00	1¼
3-W. 3-P.	3123W	10.80	8½	3130W	21.60	15	3127W	6.25	1¼
*3-W. 4-P.	3124	11.40	8½	3131	22.80	15	3128	6.60	1¼
4-W. 4-P.	3124W	11.40	8½	3131W	22.80	15	3128W	6.85	1¼

100 Amperes

2-W. 2-P.	3132	\$22.00	23	3139	\$44.00	42	3136	\$12.00	2
*2-W. 3-P.	3133	23.00	23	3140	46.00	42	3137	13.00	2
3-W. 3-P.	3133W	23.00	23	3140W	46.00	42	3137W	14.00	2
*3-W. 4-P.	3134	24.00	23	3141	48.00	42	3138	14.00	2
4-W. 4-P.	3134W	24.00	23	3141W	48.00	42	3138W	15.00	2

200 Amperes

2-W. 2-P.	3142	\$60.00	32½	3149	\$120.00	60	3146	\$30.00	5
*2-W. 3-P.	3143	65.00	32½	3150	130.00	60	3147	35.00	5
3-W. 3-P.	3143W	65.00	32½	3150W	130.00	60	3147W	37.00	5
*3-W. 4-P.	3144	70.00	32½	3151	140.00	60	3148	40.00	5
4-W. 4-P.	3144W	70.00	32½	3151W	140.00	60	3148W	42.00	5

Type B—Watertight

2, 3, and 4-Pole—Polarized

15 Amperes

Style	No.	Receptacles without Plugs				Plugs Only			
		SINGLE GANG		DOUBLE GANG		No.	Approx. Wt. Lb.		
†2-W. 2-P.	3302	\$8.10	4½	3309	\$16.20	8	3306	\$6.60	1
†2-W. 2-P.	3303	8.70	4½	3310	17.40	8	3307	7.20	1
3-W. 4-P.	3304	9.30	4½	3311	18.60	8	3308	7.80	1

30 Amperes

†2-W. 2-P.	3312	\$9.00	6	3319	\$18.00	11½	3316	\$6.60	1
†2-W. 2-P.	3313	9.60	6	3320	19.20	11½	3317	7.20	1
3-W. 4-P.	3314	10.20	6	3321	20.40	11½	3318	7.80	1

60 Amperes

†2-W. 2-P.	3322	\$15.30	9	3329	\$30.60	16	3326	\$8.10	2
†2-W. 2-P.	3323	15.90	9	3330	31.80	16	3327	8.70	2
3-W. 4-P.	3324	16.50	9	3331	33.00	16	3328	9.30	2

100 Amperes

†2-W. 2-P.	3332	\$23.00	23¾	3339	\$46.00	42	3336	\$16.00	3½
†2-W. 2-P.	3333	24.00	23¾	3340	48.00	42	3337	17.00	3½
3-W. 4-P.	3334	25.00	23¾	3341	50.00	42	3338	18.00	3½

200 Amperes

†2-W. 2-P.	3342	\$65.00	29½	3349	\$130.00	56	3346	\$35.00	6½
†2-W. 2-P.	3343	70.00	29½	3350	140.00	56	3347	40.00	6½
3-W. 4-P.	3344	75.00	29½	3351	150.00	56	3348	45.00	6½

Amp.	Receptacle Boxes				Plugs Max. O.D. of Cable Inches			
	SINGLE GANG		DOUBLE GANG					
15	Outside Dimensions Inches	Max. Conduit Inches	Outside Dimensions Inches	Max. Conduit Inches				
15	4¼x3	x2½	1	4¼x6	x1¾	1	¾	
30	4¼x3	x3¼	1½	4¼x6	x3¼	1½	1	
60	5¾x4	x3	1½	5¾x8	x3	1½	1¼	
100	6¾x6¾	x6	2½	6¾x12¼	x6¼	2½	2	
200	8½x8½	x6¾	3	13	x17	x7¼	3	2¼

*Equipment ground through separate pole. All others have equipment ground through shell only.

†Has no provision for equipment grounding. All others have equipment ground through separate pole.

Plugs listed will also fit connectors.

When ordering, specify size and location of outlets.

Can also be furnished in 600 volts.

R & S Type A Cable Connectors

15 to 200 Amperes—2, 3, and 4-Wire—Polarized
250 Volts D.C.—440 Volts A.C.



15 Amperes

Style	No.	COMPLETE CONNECTOR		—MALE END ONLY—		FEMALE END ONLY		Wt. Lb.	
		Each	Approx. Wt. Lb.	No.	Each	Approx. Wt. Lb.	No.		
2-W. 2-P.	3202	\$9.30	1½	3106	\$3.90	⅝	3206	\$5.40	¾
*2-W. 3-P.	3203	10.50	1½	3107	4.50	⅝	3207	6.00	¾
3-W. 3-P.	3203W	10.50	1½	3107W	4.70	⅝	3207W	6.20	¾
*3-W. 4-P.	3204	11.70	1½	3108	5.10	⅝	3208	6.60	¾
4-W. 4-P.	3204W	12.10	1½	3108W	5.30	⅝	3208W	6.80	¾

Style	No.	COMPLETE CONNECTOR		—MALE END ONLY—		FEMALE END ONLY		Wt. Lb.	
		Each	Approx. Wt. Lb.	No.	Each	Approx. Wt. Lb.	No.		
2-W. 2-P.	3212	\$9.90	1½	3116	\$3.90	⅝	3216	\$6.00	¾
*2-W. 3-P.	3213	11.10	1½	3117	4.50	⅝	3217	6.60	¾
3-W. 3-P.	3213W	11.50	1½	3117W	4.70	⅝	3217W	6.80	¾
*3-W. 4-P.	3214	12.30	1½	3118	5.10	⅝	3218	7.20	¾
4-W. 4-P.	3214W	12.70	1½	3118W	5.30	⅝	3218W	7.40	¾

Style	No.	COMPLETE CONNECTOR		—MALE END ONLY—		FEMALE END ONLY		Wt. Lb.	
		Each	Approx. Wt. Lb.	No.	Each	Approx. Wt. Lb.	No.		
2-W. 2-P.	3222	\$15.60	3¼	3126	\$5.40	1¼	3226	\$10.20	2
*2-W. 3-P.	3223	16.80	3¼	3127	6.00	1¼	3227	10.80	2
3-W. 3-P.	3223W	17.30	3¼	3127W	6.25	1¼	3227W	11.05	2
*3-W. 4-P.	3224	18.00	3¼	3128	6.60	1¼	3228	11.40	2
4-W. 4-P.	3224W	18.50	3¼	3128W	6.85	1¼	3228W	11.65	2

Style	No.	COMPLETE CONNECTOR		—MALE END ONLY—		FEMALE END ONLY		Wt. Lb.	
		Each	Approx. Wt. Lb.	No.	Each	Approx. Wt. Lb.	No.		
2-W. 2-P.	3232	\$34.00	5	3136	\$12.00	2	3236	\$22.00	3
*2-W. 3-P.	3233	36.00	5	3137	13.00	2	3237	23.00	3
3-W. 3-P.	3233W	38.00	5	3137W	14.00	2	3237W	24.00	3
*3-W. 4-P.	3234	38.00	5	3138	14.00	2	3238	24.00	3
4-W. 4-P.	3234W	40.00	5	3138W	15.00	2	3238W	25.00	3

Style	No.	COMPLETE CONNECTOR		—MALE END ONLY—		FEMALE END ONLY		Wt. Lb.	
		Each	Approx. Wt. Lb.	No.	Each	Approx. Wt. Lb.	No.		
2-W. 2-P.	3242	\$90.00	11	3146	\$30.00	5	3246	\$60.00	6
2-W. 3-P.	3243	100.00	11	3147	35.90	5	3247	65.00	6
3-W. 3-P.	3243W	104.00	11	3147W	37.00	5	3247W	67.00	6
*3-W. 4-P.	3244	110.00	11	3148	40.00	5	3248	70.00	6
4-W. 4-P.	3244W	114.00	11	3148W	42.00	5	3248W	72.00	6

R & S Type B Watertight Cable Connectors

15 to 200 Amperes—2, 3, and 4-Pole—Polarized
250 Volts D.C.—440 Volts A.C.



15 Amperes

Style	No.	COMPLETE CONNECTOR		—MALE END ONLY—		FEMALE END ONLY		Wt. Lb.	
		Each	Approx. Wt. Lb.	No.	Each	Approx. Wt. Lb.	No.		
*2-W. 2-P.	3402	\$14.70	2½	3306	\$6.60	1	3406	\$8.10	1½
2-W. 3-P.	3403	15.90	2½	3307	7.20	1	3407	8.70	1½
3-W. 4-P.	3404	17.10	2½	3308	7.80	1	3408	9.30	1½

Style	No.	COMPLETE CONNECTOR		—MALE END ONLY—		FEMALE END ONLY		Wt. Lb.	
		Each	Approx. Wt. Lb.	No.	Each	Approx. Wt. Lb.	No.		
*2-W. 2-P.	3412	\$15.60	2½	3316	\$6.60	1	3416	\$9.00	1½
2-W. 3-P.	3413	16.80	2½	3317	7.20	1	3417	9.60	1½
3-W. 4-P.	3414	18.00	2½	3318	7.80	1	3418	10.20	1½

Style	No.	COMPLETE CONNECTOR		—MALE END ONLY—		FEMALE END ONLY		Wt. Lb.	
		Each	Approx. Wt. Lb.	No.	Each	Approx. Wt. Lb.	No.		
*2-W. 2-P.	3422	\$23.40	4¼	3326	\$8.10	2	3426	\$15.30	2½
2-W. 3-P.	3423	24.60	4¼	3327	8.70	2	3427	15.90	2½
3-W. 4-P.	3424	25.80	4¼	3328	9.30	2	3428	16.50	2½

Style	No.	COMPLETE CONNECTOR		—MALE END ONLY—		FEMALE END ONLY		Wt. Lb.	
		Each	Approx. Wt. Lb.	No.	Each	Approx. Wt. Lb.	No.		
*2-W. 2-P.	3432	\$39.00	7½	3336	\$16.00	3½	3436	\$23.00	4
2-W. 3-P.	3433	41.00	7½	3337	17.00	3½	3437	24.00	4
3-W. 4-P.	3434	43.00	7½	3338	18.00	3½	3438	25.00	4

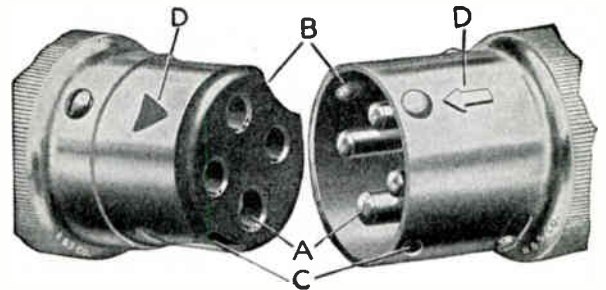
Style	No.	COMPLETE CONNECTOR		—MALE END ONLY—		FEMALE END ONLY		Wt. Lb.	
		Each	Approx. Wt. Lb.	No.	Each	Approx. Wt. Lb.	No.		
*2-W. 2-P.	3442	\$100.00	13½	3346	\$35.00	6½	3446	\$65.00	7
2-W. 3-P.	3443	110.00	13½	3347	40.00	6½	3447	70.00	7
3-W. 4-P.	3444	120.00	13½	3348	45.00	6½	3448	75.00	7

*Have no provision for equipment grounding. All others have equipment ground through separate pole.

Plugs (male ends) listed will also fit wall receptacles.

These connectors can also be furnished in 600 volts.

R & S Ever-Lok Receptacles, Plugs, and Cord Connectors



Ever-Lok is available in cord connector form and for use with its own type of receptacle.

For existing conduit systems, easily adapted to standard conduit boxes. For new installations, receptacles may be supplied with boxes, tapped to specification.

The large (grounded) contact A will not fit into any but the one large hole A. The three smaller contacts fit into their corresponding holes. The staggered lugs B and C in the plug shell, will fit only into the corresponding staggered grooves in the shell of the connector or receptacle. (B to B only and C to C only.)

The interiors of molded bakelite are grooved to fit upset lugs on the shells so that improper assembly or alignment of the interior is impossible. Shell caps are fiber lined to prevent stray wire ends touching the shell.

Terminals of the 4-pole devices are marked X, Y, Z, and G (ground). Terminals of 3-pole devices are marked 1, 2, and G. These markings maintain identity of polarity throughout.

The outer shell of the plug floats on the inner shell and turns within the limits allowed by two screws in two slots on opposite sides of the shell. As the plug is inserted in a connector or receptacle, the lugs on outer shell ride diagonally down into the funnel-shaped grooves until they strike the bottom. The outer shell automatically turns on its axis by means of a spring in its base, and the lugs snap into position.

This double locking arrangement (on opposite sides of the shell) provides balanced support and prevents poor alignment. Eliminates strains from the electrical contacts.

To unlock, it is necessary to grasp the plug firmly and give it a short reverse twist to bring the lugs back to where they will pull out of the grooves. Outer shoulders are knurled to facilitate this action, but the lock is positive and the plug cannot be withdrawn without first giving it this reverse twist.

Casings are positively grounded by double phosphor bronze springs. Equipment grounding is secured by a separate set of contacts which make first and break last (as required by Underwriters' Laboratories).

A thick sponge-rubber washer is provided in each cap, to be forced over the cord. This serves as a bushing and also as a shield to exclude metal particles, dust, etc., from interiors of plugs and connectors. Receptacle covers are sealed to the boxes by gaskets and have hinged flap doors which are gasket-lined and equipped with strong springs to keep them closed and dust-tight.

Plugs and connectors are entirely steel-clad, cadmium finish. Provided with adjustable cord grips to prevent strains. Plugs have encased locking spring in machine assembled non-separable housings.

Contacts are machined, self-wiping, and self-aligning.

Contacts and terminals are permanently assembled in bakelite body permitting removal of interior only as a unit for wiring. All connections are entirely enclosed, thus obviating accidental short circuits and tampering by inexperienced persons.

Round receptacle covers have four knockout screw holes to permit proper attachment on either horizontally or vertically installed conduit fittings. Cadmium plated screws are provided with each receptacle cover.

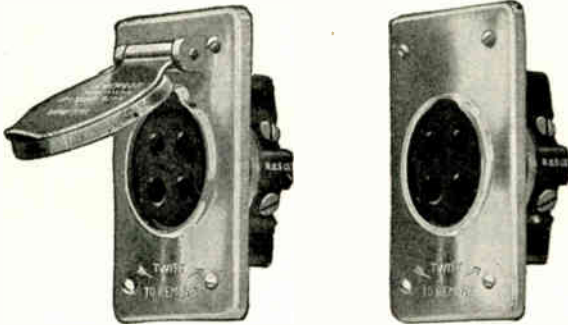
Rectangular covers are furnished with retained pointed mounting screws to prevent loss, and assist in installation.

Can also be furnished in reverse service.

R & S Ever-Lok Flush Receptacles

2, 3, and 4-Pole—Polarized

For Type FS and Similar Conduit Fittings



No. 8004

No. 8138

Covers, .063-inch steel. Size, 4 5/8 x 2 1/8 inches. Maximum conduit, 1 inch. Specify size and location. Cadmium plated finish. Plugs are not included.

10 Amperes—250 Volts D.C.—440 Volts A.C.
20 Amperes—125 Volts D.C.

Style	WITH SPRING HINGED DOOR		WITHOUT DOOR		For Plug No.
	No.	Each	No.	Each	
2-Wire 2-Pole	8002	\$2.50	8133	\$2.30	8012
2-Wire 3-Pole	8003	2.60	8134	2.40	8013
3-Wire 4-Pole	8008	2.70	8135	2.50	8018

20 Amperes—250 Volts D.C.—440 Volts A.C.
30 Amperes—125 Volts D.C.

2-Wire 2-Pole	8006	\$2.65	8136	\$2.45	8016
2-Wire 3-Pole	8005	2.75	8137	2.55	8015
3-Wire 4-Pole	8004	2.85	8138	2.65	8014

Can also be furnished with No. 8009 aluminized cast iron box for surface mounting at 80 cents extra.

R&S Ever-Lok Surface Receptacles

2, 3 and 4-Pole—Polarized

For Single or Gang Type FS Conduit Fittings



No. 8083

Cast iron box, steel cover. Spring hinged door. Maximum conduit, 1-inch. Single gang, 4-way; multi-gang, one outlet on one side, one per gang on opposite side and one on each end. Specify size and location. Cadmium plated finish. Plugs are not included.

10 Amperes—250 Volts D.C.—440 Volts A.C.
20 Amperes—125 Volts D.C.

Style	SINGLE GANG		2-GANG		3-GANG		4-GANG		For Plug No.
	No.	Each	No.	Each	No.	Each	No.	Each	
2-W. 2-P.	8082	\$3.30	8127	\$6.60	8159	\$10.40	8171	\$14.20	8012
2-W. 3-P.	8083	3.40	8128	6.80	8160	10.70	8172	14.60	8013
3-W. 4-P.	8084	3.50	8129	7.00	8161	11.00	8173	15.00	8018

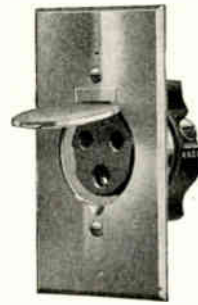
20 Amperes—250 Volts D.C.—440 Volts A.C.
30 Amperes—125 Volts D.C.

2-W. 2-P.	8029	\$3.45	8130	\$6.90	8162	\$10.85	8174	\$14.80	8016
2-W. 3-P.	8030	3.55	8131	7.10	8163	11.15	8175	15.20	8015
3-W. 4-P.	8031	3.65	8132	7.30	8164	11.45	8176	15.60	8014

Portable gang type receptacles can also be furnished.

R & S Ever-Lok Flush Type Receptacles

2, 3, and 4-Pole—Polarized
With Double Hinged Door
For Standard Outlet Box Raised Covers



No. 8043

Plates, 1/8-inch brass. Single gang, 2 3/4 x 4 1/2 inches. Brush brass finish. Plugs are not included.

10 Amperes—250 Volts D.C.—440 Volts A.C.
20 Amperes—125 Volts D.C.

Style	SINGLE GANG		2-GANG		For Plug No.
	No.	Each	No.	Each	
2-Wire 2-Pole	8042	\$4.25	*8066	\$8.50	8012
2-Wire 3-Pole	8043	4.35	*8067	8.70	8013
3-Wire 4-Pole	8044	4.45	*8068	8.90	8018

20 Amperes—250 Volts D.C.—440 Volts A.C.
30 Amperes—125 Volts D.C.

2-Wire 2-Pole	8048	\$5.25	†8102	\$10.50	8016
2-Wire 3-Pole	8049	5.35	†8103	10.70	8015
3-Wire 4-Pole	8050	5.45	†8104	10.90	8014

*Plate, 4 1/2 x 4 3/8 inches. Requires standard 2-gang outlet box raised covers.

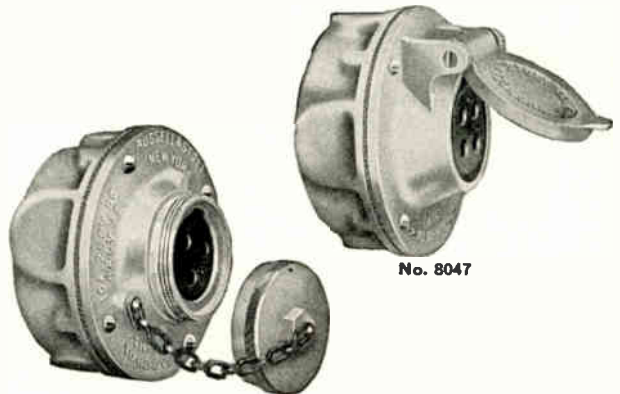
†Plate, 4 1/2 x 6 3/8 inches. Requires standard 3-gang outlet box raised covers.

Can also be furnished without hinged door and in gang type for combination with toggle switch.

R & S Ever-Lok Weathertight Receptacles

Regular Service

2, 3, and 4-Pole—Polarized
Female Receptacle for Male Plug with No. 333 Junction Box



No. 8122

No. 8047

Cast iron box and cover. Maximum conduit, 3/4-inch. Specify size and location. Cadmium plated finish. Plugs are not included.

10 Amperes—250 Volts D.C.—440 Volts A.C.
20 Amperes—125 Volts D.C.

Style	WITH SPRING DOOR		WITH SCREW CAP & CHAIN		For Plug No.
	No.	Each	No.	Each	
2-Wire 2-Pole	8035	\$4.10	8121	\$4.75	8012
2-Wire 3-Pole	8036	4.20	8122	4.85	8013
3-Wire 4-Pole	8037	4.30	8123	4.95	8018

20 Amperes—250 Volts D.C.—440 Volts A.C.
30 Amperes—125 Volts D.C.

2-Wire 2-Pole	8045	\$4.25	8124	\$4.90	8016
2-Wire 3-Pole	8046	4.35	8125	5.00	8015
3-Wire 4-Pole	8047	4.45	8126	5.10	8014

Can also be furnished for reverse service.

R & S Ever-Lok Plugs Male End



2, 3, and 4-Pole—Polarized
Steel housings.
Cadmium plated finish.

No. 8014



No. 8153

10 Amperes—250 Volts D.C.—440 Volts A.C.
20 Amperes—125 Volts D.C.

Style	No.	Each	WITH CLAMP CABLE GRIP		WITH BUSHING CABLE GRIP	
			No.	Each	Max. Cable Inches	Max. Cable Inches
2-Wire 2-Pole	8012	\$1.60	8152	\$2.10	1 1/2	1 1/2
2-Wire 3-Pole	8013	1.70	8153	2.20	1 1/2	1 1/2
3-Wire 4-Pole	8018	1.80	8158	2.30	1 1/2	1 1/2
20 Amperes—250 Volts D.C.—440 Volts A.C. 30 Amperes—125 Volts D.C.						
2-Wire 2-Pole	8016	\$1.65	8156	\$2.15	1	1
2-Wire 3-Pole	8015	1.75	8155	2.25	1	1
3-Wire 4-Pole	8014	1.85	8154	2.35	1	1

R & S Ever-Lok Connectors Female End



2, 3, and 4-Pole—Polarized
Steel housings.
Cadmium plated finish.

No. 8024



No. 8093

10 Amperes—250 Volts D.C.—440 Volts A.C.
20 Amperes—125 Volts D.C.

Style	No.	Each	WITH CLAMP CABLE GRIP		WITH BUSHING CABLE GRIP	
			No.	Each	Max. Cable Inches	Max. Cable Inches
2-Wire 2-Pole	8022	\$2.35	8092	\$2.85	1 1/2	1 1/2
2-Wire 3-Pole	8023	2.45	8093	2.95	1 1/2	1 1/2
3-Wire 4-Pole	8028	2.55	8098	3.05	1 1/2	1 1/2
20 Amperes—250 Volts D.C.—440 Volts A.C. 30 Amperes—125 Volts D.C.						
2-Wire 2-Pole	8026	\$2.55	8096	\$3.05	1	1
2-Wire 3-Pole	8025	2.65	8095	3.15	1	1
3-Wire 4-Pole	8024	2.75	8094	3.25	1	1

R & S Ever-Lok Fusible Plugs

Standard NEC—3 and 4-Pole—Polarized
20 Amperes—250 Volts D.C.
30 Amperes—125 Volts D.C.



No. 9114

For protection of branch circuit extensions or for motor overload protection of small motors. Use in conjunction with Ever-Lok receptacles and connectors. Maximum cable, 5/8-inch diameter. Steel housing. Cadmium plated finish. Safety bakelite holder for Standard NEC fuses or fusetrans.

No.	Description	Each
9113	2-Fused and 1-Grounded Pole	\$5.50
9114	3-Fused and 1-Grounded Pole	5.50

No. 9144 R & S Ever-Lok Fusible Plugs

Midget—3 and 4-Pole—Polarized
20 Amperes—250 Volts D.C.
30 Amperes—125 Volts D.C.



For Midget fuses or Midget fusetrans. Maximum cable, 5/8-inch diameter. Steel housing. Cadmium plated finish.

No.	Description	Each
9144	3-Fused and 1-Grounded Pole	\$4.50

R & S Ever-Lok Fusible Connectors

Standard NEC—3 and 4-Pole—Polarized
20 Amperes—250 Volts D.C.
30 Amperes—125 Volts D.C.



No. 9124

Complete separable connector with safety bakelite holder for NEC fuses. For disconnect use only. Maximum cable, 5/8-inch diameter. Steel housing. Cadmium plated finish. Fuses are not included.

No.	Description	Each
9123	2-Fused and 1-Grounded Pole	\$5.00
9124	3-Fused and 1-Grounded Pole	5.00

R & S Ever-Lok Multi-Circuit Receptacles

5 Amperes—250 Volts—2 to 7-Pole—Polarized

For ignition, sound and control equipment. For types FS and similar conduit fittings. Contacts removable. Solder type terminals. Casings not grounded. Steel cover, 4 1/2 x 2 1/2 x .063 inches. Cadmium plated finish. Plugs are not included.



No. 8506

Furnished with No. 8009 aluminized cast iron conduit box for surface mounting at 80 cents extra. Maximum conduit, 1 inch. Specify size and location.

Style	WITH HINGED DOOR		WITHOUT DOOR		For Plug No.
	No.	Each	No.	Each	
2-Pole	8502	\$3.00	8532	\$2.80	8512
3-Pole	8503	3.25	8533	3.05	8513
4-Pole	8504	3.50	8534	3.30	8514
5-Pole	8505	3.75	8535	3.55	8515
6-Pole	8506	4.00	8536	3.80	8516
7-Pole	8507	4.25	8537	4.05	8517

R & S Ever-Lok Multi-Circuit Plugs

Male End

5 Amperes—250 Volts—2 to 7 Pole—Polarized



No. 8516

For ignition, sound and control equipment. Contacts removable. Solder type terminals. Casings



No. 8546

not grounded. Steel housings. Cadmium plated finish.

Style	WITH CLAMP CABLE GRIP			WITH BUSHING CABLE GRIP		
	No.	Each	Max. Cable Inches	No.	Each	Max. Cable Inches
2-Pole	8512	\$2.50	1 1/2	8542	\$3.00	1 1/2
3-Pole	8513	2.75	1 1/2	8543	3.25	1 1/2
4-Pole	8514	3.00	1 1/2	8544	3.50	1 1/2
5-Pole	8515	3.25	1 1/2	8545	3.75	1 1/2
6-Pole	8516	3.50	1 1/2	8546	4.00	1 1/2
7-Pole	8517	3.75	1 1/2	8547	4.25	1 1/2

R & S Ever-Lok Multi-Circuit Connectors

Female End

5 Amperes—250 Volts—2 to 7 Pole—Polarized



No. 8526

For ignition, sound and control equipment. Contacts removable. Solder type terminals. Casings



No. 8556

not grounded. Steel housings. Cadmium plated finish.

Style	WITH CLAMP CABLE GRIP			WITH BUSHING CABLE GRIP		
	No.	Each	Max. Cable Inches	No.	Each	Max. Cable Inches
2-Pole	8522	\$3.00	1 1/2	8552	\$3.50	1 1/2
3-Pole	8523	3.25	1 1/2	8553	3.75	1 1/2
4-Pole	8524	3.50	1 1/2	8554	4.00	1 1/2
5-Pole	8525	3.75	1 1/2	8555	4.25	1 1/2
6-Pole	8526	4.00	1 1/2	8556	4.50	1 1/2
7-Pole	8527	4.25	1 1/2	8557	4.75	1 1/2

R & S Ever-Lok Weathertight Heavy Service Receptacles and Plugs

30, 60, 100, and 200 Amperes—250 Volts D.C.
30, 60, 100, and 200 Amperes—440 Volts A.C.
2, 3, and 4-Pole—Polarized



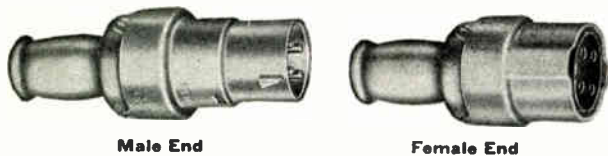
Receptacle has composition interior. Aluminized box and cover. Specify size and location of outlets. Plugs are not included.

Style	No.	Each	For Plug No.	RECEPTACLE BOXES		Max. Conduit Inches	Plugs Max. O.D. Inches
				Outside Dimen. Inches	Max. Conduit Inches		
30 Amperes							
*2-W. 2-P.	8402	\$9.00	8406	4 1/4 x 3	x 3 1/4	1 1/2	1
2-W. 3-P.	8403	9.60	8407	4 1/4 x 3	x 3 1/4	1 1/2	1
3-W. 4-P.	8404	10.20	8408	4 1/4 x 3	x 3 1/4	1 1/2	1
60 Amperes							
*2-W. 2-P.	8412	\$15.30	8416	5 3/4 x 4	x 3	1 1/2	1 1/4
2-W. 3-P.	8413	15.90	8417	5 3/4 x 4	x 3	1 1/2	1 1/4
3-W. 4-P.	8414	16.50	8418	5 3/4 x 4	x 3	1 1/2	1 1/4
100 Amperes							
*2-W. 2-P.	8422	\$23.00	8426	6 3/4 x 6 3/4	x 6	2 1/2	1 3/4
2-W. 3-P.	8423	24.00	8427	6 3/4 x 6 3/4	x 6	2 1/2	1 3/4
3-W. 4-P.	8424	25.00	8428	6 3/4 x 6 3/4	x 6	2 1/2	1 3/4
200 Amperes							
*2-W. 2-P.	8432	\$65.00	8436	8 1/2 x 8 1/2	x 6	3	2 1/4
2-W. 3-P.	8433	70.00	8437	8 1/2 x 8 1/2	x 6	3	2 1/4
3-W. 4-P.	8434	75.00	8438	8 1/2 x 8 1/2	x 6	3	2 1/4

*No provision for equipment grounding. All others have equipment grounded through separate pole.

R & S Ever-Lok Weathertight Heavy Service Connectors

30, 60, 100, and 200 Amperes—250 Volts D.C.
30, 60, 100, and 200 Amperes—440 Volts A.C.
2, 3, and 4-Pole—Polarized



Cast aluminum housing. Composition interior.

Style	30 Amperes MALE END ONLY		30 Amperes FEMALE END ONLY	
	No.	Each	No.	Each
*2-W. 2-P.	8406	\$13.20	8442	\$9.00
2-W. 3-P.	8407	14.40	8443	9.60
3-W. 4-P.	8408	15.60	8444	10.20
60 Amperes				
*2-W. 2-P.	8416	\$16.20	8452	\$15.30
2-W. 3-P.	8417	17.40	8453	15.90
3-W. 4-P.	8418	18.60	8454	16.50
100 Amperes				
*2-W. 2-P.	8426	\$24.00	8462	\$23.00
2-W. 3-P.	8427	25.50	8463	24.00
3-W. 4-P.	8428	27.00	8464	25.00
200 Amperes				
*2-W. 2-P.	8436	\$52.50	8472	\$65.00
2-W. 3-P.	8437	60.00	8473	70.00
3-W. 4-P.	8438	67.50	8474	75.00

*No provision for equipment grounding. All others have equipment grounded through separate pole.

R&S Vaportight and Dust-Tight Fixtures Screw Globe

Designed for use in all place where dampness, dust, or corrosive vapors exist.

So constructed that, should the protecting globe accidentally be broken, the fixture body will remain air-tight preventing vapors from entering the conduit line.

Fixtures are made in cast iron (aluminized), cast brass and cast aluminum alloy.

Iron fixture bodies; aluminized finish.

All globes are made of best American natural colored flint glass and guaranteed true to size. Seating surfaces are ground true and smooth.

High grade cloth inserted rubber gaskets are furnished as standard equipment. Gaskets of other material will be supplied on request.

Maximum size of conduit, 3/4 inch. When ordering, specify outlets required.

Type SF R&S Pendent Vaportight Fixtures With RLM Steel Reflector and Screw Globe



Has 6-inch cast guard for 75-watt fixture; round wire brass guard for all 100 to 300-watt fixtures. Cast guards can be furnished with set screw lock if specified, at no additional charge.

Outlets, 1/2 or 3/4 inch. Specify size when ordering.

Max. Lamp Watts	Without Guard		Cast Iron With Guard		Ref. Diam. In.		
	No.	Each	Approx. Net Wt. Pounds	Approx. Net Wt. Pounds			
75	6360	\$7.35	4	6361	\$8.35	4 1/4	12
100	6309	9.00	6 3/4	6310	10.75	8 1/2	14
150	6303	9.00	6 3/4	6304	10.75	8 1/2	14
200	6305	10.00	7 3/4	6306	11.75	9 1/2	16
‡300	6307	16.30	11	6308	19.00	13	18

Max. Lamp Watts	Cast Brass		Cast Brass With Guard		Ref. Diam. In.		
	No.	Each	Approx. Net Wt. Pounds	Approx. Net Wt. Pounds			
75	6201	\$8.00	4 1/4	6202	\$9.00	5 1/4	12
100	6209	11.70	6 1/2	6210	13.50	8	14
150	6203	11.70	6 1/2	6204	13.50	8	14
200	6205	12.70	7 1/2	6206	14.50	9	16
‡300	6207	20.30	11 3/4	6208	23.00	13 1/2	18

*Cast aluminum guard. †Cast brass guard. ‡Mogul base.

Type SF R&S Junction Box Vaportight Fixtures With RLM Steel Reflector With Screw Globe and Cast Iron Box



Has 6-inch cast guard for 75-watt fixture; round wire brass guard for all 100 to 300-watt fixtures. Cast guards can be furnished with set screw lock if specified, at no additional charge.

Maximum outlet, 3/4 inch.

Max. Lamp Watts	Without Guard		Cast Iron With Guard		Ref. Diam. In.		
	No.	Each	Approx. Net Wt. Pounds	Approx. Net Wt. Pounds			
75	6311	\$7.35	5 1/4	6312	\$8.35	5 3/4	12
100	6319	9.00	8 1/4	6320	10.75	9 3/4	14
150	6313	9.00	8 1/4	6314	10.75	9 3/4	14
200	6315	10.00	9 1/4	6316	11.75	10 3/4	16
‡300	6317	16.30	14	6318	19.00	16	18

Max. Lamp Watts	Cast Brass		Cast Brass With Guard		Ref. Diam. In.		
	No.	Each	Approx. Net Wt. Pounds	Approx. Net Wt. Pounds			
75	6211	\$8.00	5 3/4	6212	\$9.00	6 1/4	12
100	6219	11.70	8	6220	13.50	9 3/4	14
150	6213	11.70	8	6214	13.50	9 3/4	14
200	6215	12.70	9	6216	14.50	10 3/4	16
‡300	6217	20.30	14	6218	23.00	16	18

*Cast aluminum guard. †Cast brass guard. ‡Mogul base.

Type SF R&S Vaportight Fixtures

With Screw Globe

Has 6-inch cast guard for 75-watt fixture; round wire brass guard for all 100 to 200-watt fixtures. Cast guards furnished with set screw lock, at no additional charge.

For 4-Inch Cast Junction Boxes



Max. Lamp Watts	Cast Brass			Cast Iron		
	No.	Each	Approx. Net Wt., Pound	No.	Each	Approx. Net Wt., Pound
75	†5090	\$4.40	3	*6323	\$3.75	2½
100-200	5091	7.90	5	6335	5.90	4¾

For 4-Inch Steel Outlet Boxes

75	†5093	\$5.00	3½	*6333	\$4.35	3
100-200	5094	7.90	5½	6336	5.90	5

*Cast aluminum guard.

†Cast brass guard.

For fixtures less guards, deduct \$1.00 for 75-watt and \$1.75 for 100-200-watt size fixtures.

Type SF R&S Pendent Vaportight Fixtures

With Screw Globe

Has 6-inch cast guard with set screw lock, for 75-watt fixture; round wire brass guard for all 100 to 300-watt fixtures. Outlets, ½ or ¾ inch. Without switch.



Max. Lamp Watts	Without Guard			With Guard		
	No.	Each	Approx. Net Wt., Pound	No.	Each	Approx. Net Wt., Pound
75	6344	\$3.35	2¼	6345	\$4.35	2½
75	6348	5.35	3¼	6349	6.35	3¾
100-200	6346	4.70	4¼	6324	6.50	6
†300	6347	9.30	6½	6328	12.00	8½

Cast Brass

75	5003	\$4.00	2½	5000	\$5.00	3½
75	428	6.00	3¼	430	7.00	3¾
100-200	5004	6.70	4	5001	8.50	5½
†300	1417	12.30	7¼	1413	15.00	9

*Aluminum guard. †Brass guard. ‡Mogul base. §With switch.

Type SF R&S Junction Box Vaportight Fixtures

With Screw Globe and Cast Iron Box

Has 6-inch cast guard with set screw lock, for 75-watt fixture; round wire brass guard for all 100 to 300-watt fixtures. Maximum outlet, ¾ inch. Without switch.



Max. Lamp Watts	Without Guard			With Guard		
	No.	Each	Approx. Net Wt., Lb.	No.	Each	Approx. Net Wt., Lb.
75	5066	\$3.35	3½	6321	\$4.35	4
75	5069	5.35	4¼	6322	6.35	5
100 200	5067	4.70	5¼	6334	6.50	7½
†300	5068	9.30	9¾	6338	12.00	11½

Cast Brass

75	5051	\$4.00	4	5045	\$5.00	4½
75	5054	6.00	4½	431	7.00	5¼
100-200	5052	6.70	5½	5047	8.50	7¼
†300	5053	12.30	9½	1414	15.00	11½

*Aluminum guard. †Brass guard. ‡Mogul base. §With switch.

Type SF R&S 90° Vaportight Fixtures

With Screw Globe and Cast Iron Box

Has 6-inch cast guard with set screw lock, for 75-watt fixture; round wire brass guard for all 100 to 200-watt fixtures. Maximum outlet, ¾ inch. Without switch.



Max. Lamp Watts	Cast Brass			Cast Iron		
	No.	Each	Approx. Net Wt., Pound	No.	Each	Approx. Net Wt., Pound
75	5060	\$7.00	7	6260	\$6.35	6
75	434	9.00	7½	6261	8.35	6½
100-200	5062	12.50	9½	6262	10.00	8

*Aluminum guard. †Brass guard. §With switch.

For fixtures less guards, deduct \$1.00 for 75-watt and \$1.75 for 100-200-watt size fixtures.

R&S Screw Type Globes



Made of the best American Flint glass and guaranteed true to size. Only natural colored glass used.

Seating surfaces are ground true and smooth.

Heat resisting globes will be furnished on special order; prices on request.

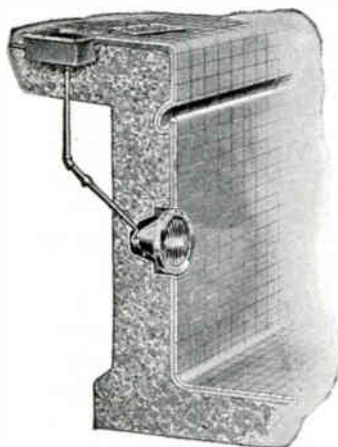
Color	MAXIMUM SIZE LAMPS, WATTS					
	60		75		100	
	No.	Each	No.	Each	No.	Each
Clear	2380	\$.50	2383	\$.50	2386	\$.60
Frosted	2381	1.00	2384	1.00	2387	1.20
Opal	2382	.75	2385	.75	2388	.90
Ruby	803	1.50	809	1.50	815	1.80
Blue	804	1.50	810	1.50	816	1.80
Green	805	1.50	811	1.50	817	1.80
Amber	2349	1.50	2350	1.50	2351	1.80

Color	MAXIMUM SIZE LAMPS, WATTS			
	100-200		300	
	No.	Each	No.	Each
Clear	2395	\$1.25	2376	\$2.00
Frosted	2396	2.50	2377	4.00
Opal	2397	2.00	2378	3.00
Ruby	833	3.75	2373	6.00
Blue	834	3.75	2374	6.00
Green	835	3.75	2375	6.00
Amber	2352	3.75	2353	6.00

Specifications

Maximum Size Lamp Watts	Outside Diameter Inches	Length Overall Inches	No. in Carton	Approx. Weight Pounds per Carton
60	3⅞	5	60	42
75	3⅞	6	50	49
100	3⅞	7	50	63
100-200	4⅞	8¾	18	44
300	6	9½	12	40

R & S Swimming Pool and Fountain Lighting Fixtures



Russell & Stoll Company, pioneers in the field of watertight and marine lighting, offer a complete line of underwater lighting units, perfect in every detail and suitable for every type of pool construction.

These fixtures are constructed of high grade valve bronze; equipped with polished chromium copper reflectors, clear spreadlight lens producing a wide horizontal beam of light without glare.

By the addition of color filters many attractive tints may be produced.

The illustration depicts a typical swimming pool wall construction with a No. 2362 bronze adjustable underwater floodlight in position in a cast bronze housing No. 2362H and a bronze cable box No. 2363 with cover removed and in which is coiled all surplus cable.

This floodlight pivots in the bronze housing allowing the fixture to be adjusted to the most efficient lighting angle; water cooled, because it is entirely surrounded by water when installed. By lifting floodlight out of pivot bearings in the bronze housing, fixture can be raised to surface and relamped in a few minutes without draining pool or disturbing current carrying line.

This unit will accommodate a Type G-30 floodlight lamp, 250 or 400 watts. Prices and detailed information of this fixture and various other style units covered in Bulletin 65 will be gladly forwarded upon application.

Bryant Brass Socket Bodies

Listed by Underwriters' Laboratories, Inc.

With Key



No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
No. 10 Single-Pole 250 Watts, 250 Volts				
10	\$17.50	25	250	33

**No. 12 Single-Pole High Capacity
660 Watts, 250 Volts**

12	\$52.00	25	250	42
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No. 13 Keyless

660 Watts, 250 Volts

13	\$14.00	25	250	38
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No. 15 with Pull Chain

Single Pole
250 Watts, 250 Volts

15	\$23.50	25	250	35
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With Push Button



Single Pole 250 Watts, 250 Volts				
32	\$17.50	25	250	34

660 Watts, 250 Volts				
34	\$19.00	25	250	34

With Pull Switch



Equipped with short chain, 4 feet of small cord, and small composition pendent ball.

No. 20 Single-Pole 3 Amperes, 125 Volts—1 Ampere, 250 Volts				
20	\$85.00	10	20	3½

No. 27 Single-Pole 3 Amperes, 125 Volts—1 Ampere, 250 Volts For 3-light lamps operating 1, 2, 1 and 2, off.				
27	\$131.50	10	20	3½

Nos. 20 and 27



No. 25 Single-Pole 3 Amperes, 125 Volts—1 Ampere, 250 Volts With ½-inch cord hole in composition bushing.				
25	\$89.50	10	20	3½

No. 25

No. 50 Single-Pole 6 Amperes, 125 Volts—3 Amperes, 250 Volts				
50	\$98.00	10	20	3½

No. 631 Brylock Keys for Socket Bodies



631	\$54.00	1	1	¼
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Bryant New Wrinkle Brass Caps



No. AA

No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
No. AA ¼-inch Female				
AA	\$8.00	25	250	12



No. AB

AB	\$20.00	5	25	1¼
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No. AC

AC	\$12.00	25	100	5½
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No. AD

AD	\$30.00	25	50	4
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No. AM

AM	\$20.00	25	50	2¼
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No. AG

AG	\$35.00	25	50	2¾
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No. AP

AP	\$40.00	5	25	1½
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No. AQ Cord Grip For ⅜ to ½-inch cords.				
AQ	\$24.50	25	100	7½

No. AT Pendant Cap With bakelite bushing; 1½-inch hole.				
AT	\$8.00	25	250	7

No. AU Strain Relief Pendant Cap With porcelain bushing; 1½-inch hole.				
AU	\$15.00	25	100	4

No. CX ½-inch Female
With insulated side entrance bushing. Dimension of cord hole, ⅝x⅝ inch.

Other socket caps may be fitted with insulated side entrance bushings. Add \$2.00 per 100.

CX	\$9.00	25	100	4½
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Bryant Wrinkle Brass Bases

Listed by Underwriters' Laboratories, Inc.



No. BL

For 3¼-inch Box						
No.	Per 100	O.D. In.	Screw Spacing Inches	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
BL	\$58.50	3⅝	2, 2¾	10	50	23

For 3¼ and 4-inch Boxes						
BM	\$106.00	4¼	2, 2¾	5	50	43

Bryant New Wrinkle Porcelain Bases



No. AX



No. AZ

No. AX Slotted Base							
Cat. No.	Per 100	O. D. Base Inches	Supporting Screw Spacing		Car-ton	Std. Pkg.	Wt., Lba. Std. Pkg.
			Inches	Inches			
AX	\$29.00	2½	1⅝	1⅝	10	100	19
AY	\$29.00	2½	1⅝	1⅝	10	100	19

No. AZ Large Concealed Base
Fits Type 500 Adaptiboxes, Types GN, HM, and W Octagonal Unilets and Size 10 Round Opening Pipe Taplets.

AZ	\$37.50	2¾	2¼	10	100	32
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No. AW Bryant New Wrinkle Porcelain Cleat Bases



No. BA Bryant New Wrinkle Porcelain Angle Concealed Bases

Supporting screw spacing, 2½ inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lba. Std. Pkg.
AW	\$37.50	10	100	28

Screw spacings, 1⅝ inches.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lba. Std. Pkg.
BA	\$38.50	10	100	22

Bryant Wrinklet Electrolier Socket Bodies

No. 80 Single-Pole Key
250 Watts, 250 Volts
Std. length of key, 1 in.

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
80	\$17.50	25	250	34

No. 81 Single-Pole Push-Button

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
81	\$23.00	25	250	31

No. 83 Keyless Long Pattern
660 Watts, 250 Volts

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
83	\$14.00	25	250	28

No. 85 Single-Pole Pull
250 Watts, 250 Volts
Std. chain 6 1/2 in. long.

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
85	\$23.50	25	250	35

No. 95 Single-Pole Keyless Short Pattern
660 Watts, 250 Volts

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
95	\$12.50	25	250	20



No. 80



No. 85



No. 81



No. 95

Bryant Wrinklet Electrolier Caps

No. WA 1/4-Inch Female

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
WA	\$8.00	25	250	11

No. WB 1/4-Inch Female

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
WB	\$20.00	5	25	1 1/4

No. WC 3/8-Inch Female

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
WC	\$12.00	25	50	2 1/2

No. WE 1/2-Inch Male

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
WE	\$15.00	5	25	1

No. WG 3/8-Inch Male

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
WG	\$20.00	5	25	1

No. WM 1/2-Inch Female Angle

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
WM	\$35.00	25	50	2 1/2

No. WP 3/8-Inch Female Angle

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
WP	\$42.50	5	25	1 1/2

No. WT Pendant Cap

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
WT	\$8.00	25	50	1 1/4

No. WX 1/2-Inch Female

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
WX	\$9.00	25	50	2



No. WA



No. WB



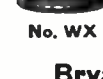
No. WC



No. WE



No. WG



No. WM



No. WP



No. WT



No. WX

Bryant Brass Shell Electrolier Sockets

Keyless Sockets

660 Watts, 250 Volts

1/4-Inch Cap

No.	Brush Brass per 100	Bright Dipped per 100	Nickel or Gun Metal per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
HA95	\$11.70	\$10.70	\$15.70	25	250	30

Pendant Cap

No.	Brush Brass per 100	Bright Dipped per 100	Nickel or Gun Metal per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
HT95	\$11.70	\$10.70	\$15.70	25	250	28

1/2-Inch Cap—Side Outlet

No.	Brush Brass per 100	Bright Dipped per 100	Nickel or Gun Metal per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
HX95	\$12.60	\$11.60	\$16.60	25	250	30

Push Sockets

660 Watts, 250 Volts

1/4-Inch Cap

No.	Brush Brass per 100	Bright Dipped per 100	Nickel or Gun Metal per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
HA81	\$15.30	\$14.30	\$19.30	25	250	40

Pendant Cap

No.	Brush Brass per 100	Bright Dipped per 100	Nickel or Gun Metal per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
HT81	\$15.30	\$14.30	\$19.30	25	250	36

1/2-Inch Cap—Side Outlet

No.	Brush Brass per 100	Bright Dipped per 100	Nickel or Gun Metal per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
HX81	\$16.20	\$15.20	\$20.20	25	250	41

250 Watts, 250 Volts

1/4-Inch Cap

No.	Brush Brass per 100	Bright Dipped per 100	Nickel or Gun Metal per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
HA82	\$15.30	\$14.30	\$19.30	25	250	40

Pendant Cap

No.	Brush Brass per 100	Bright Dipped per 100	Nickel or Gun Metal per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
HT82	\$15.30	\$14.30	\$19.30	25	250	36

1/2-Inch Cap—Side Outlet

No.	Brush Brass per 100	Bright Dipped per 100	Nickel or Gun Metal per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
HX82	\$16.20	\$15.20	\$20.20	25	250	41



No. HA95



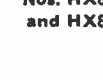
No. HT95



No. HA81



No. HT81



Nos. HX81 and HX82

Bryant Hemco Brass Shell Sockets

Standard Size



No. HT10



No. HA30



No. HA15

Key Sockets

250 Watts, 250 Volts

No.	Brush Brass per 100	Bright Dipped per 100	Nickel or Gun Metal per 100	Style Cap	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
HA10	\$14.50	\$13.50	\$18.50	1/8-Inch Cap....	25	250	50
HC10	18.50	17.50	22.50	3/8-Inch Cap....	25	250	52
HT10	14.50	13.50	18.50	Pendant Cap....	25	250	44
HX10	15.40	14.40	19.40	1/8-Inch Cap, Side Outlet...	25	250	50

Turn Knob Sockets

250 Watts, 250 Volts

No.	Brush Brass per 100	Bright Dipped per 100	Nickel or Gun Metal per 100	Style Cap	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
HA30	\$14.50	\$13.50	\$18.50	1/8-Inch Cap....	25	250	50
HC30	18.50	17.50	22.50	3/8-Inch Cap....	25	250	52
HT30	14.50	13.50	18.50	Pendant Cap....	25	250	44
HX30	15.40	14.40	19.40	1/8-Inch Cap, Side Outlet...	25	250	50

Pull Sockets

250 Watts, 250 Volts

No.	Brush Brass per 100	Bright Dipped per 100	Nickel or Gun Metal per 100	Style Cap	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
HA15	\$18.00	\$17.00	\$22.00	1/8-Inch Cap....	25	250	52
HC15	22.00	21.00	26.00	3/8-Inch Cap....	25	250	54
HT15	18.00	17.00	22.00	Pendant Cap....	25	250	48
HX15	18.90	17.90	22.90	1/8-Inch Cap, Side Outlet...	25	250	52

Push Sockets

250 Watts, 250 Volts

No.	Brush Brass per 100	Bright Dipped per 100	Nickel or Gun Metal per 100	Style Cap	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
HA32	\$15.30	\$14.30	\$19.30	1/8-Inch Cap....	25	250	48
HC32	19.30	18.30	23.30	3/8-Inch Cap....	25	250	50
HT32	15.30	14.30	19.30	Pendant Cap....	25	250	43
HX32	16.20	15.20	20.20	1/8-Inch Cap, Side Outlet...	25	250	48

Electrolier



No. HA13



Nos. HX32 and HX34

Keyless Sockets

660 Watts, 250 Volts

No.	Brush Brass per 100	Bright Dipped per 100	Nickel or Gun Metal per 100	Style Cap	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
HA13	\$12.50	\$11.50	\$16.50	1/8-Inch Cap....	25	250	50
HC13	16.50	15.50	20.50	3/8-Inch Cap....	25	250	52
HT13	12.50	11.50	16.50	Pendant Cap....	25	250	44
HX13	13.40	12.40	17.40	1/8-Inch Cap, Side Outlet...	25	250	50

Push Sockets

660 Watts, 250 Volts

No.	Brush Brass per 100	Bright Dipped per 100	Nickel or Gun Metal per 100	Style Cap	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
HA34	\$16.30	\$15.30	\$20.30	1/8-Inch Cap....	25	250	48
HC34	20.30	19.30	24.30	3/8-Inch Cap....	25	250	50
HT34	16.30	15.30	20.30	Pendant Cap....	25	250	43
HX34	17.20	16.20	21.20	1/8-Inch Cap, Side Outlet...	25	250	48

No bodies or caps are sold separately.

Bryant Titan Brass Socket Caps and Bodies

Listed by Underwriters' Laboratories, Inc.



No. TA-4315 Showing Method of Fastening Shell to Cap

The connection between the socket body and cap is effected by means of a threaded ring which engages with a corresponding thread in the shell.

The threaded ring is packed with the socket body.

Each cap will fit all bodies.

Packed 25 in a carton.



No. TA



No. TT

Titan Brass Caps

No.	Per 100	Description	Std. Pkg.	Wt., Lbs.
TA	\$7.50	1/8-Inch Cap.....	250	11
TB	18.00	1/4-Inch Cap.....	50	3
TC	11.00	3/8-Inch Cap.....	100	5
TJ	19.50	Cord Grip, 1/4 to 3/8-Inch Cap.....	100	7
TQ	19.50	Cord Grip, 3/8 to 1/2-Inch Cap.....	100	7
TT	7.50	Pendent Cap.....	250	6

Titan Brass Socket Bodies with Rings (without Caps)

250 Watts, 250 Volts				
4310	\$27.00	*Key, Single-Pole.....	250	39
4315	37.00	Pull, Single-Pole.....	250	40
4317	26.00	Push-Button.....	250	40
660 Watts, 250 Volts				
4312	\$43.50	*Key, Single-Pole.....	250	48
4313	22.50	Keyless.....	250	45
4314	27.00	Push-Button.....	250	40

*Standard length of key, 1 inch.

Bryant Bakelite Titan Socket Bodies and Caps Titan Caps



Cat. No.	Per 100	Description	Carton	Std. Pkg.	Wt., Lbs.
LA	\$7.50	1/8-Inch Female Cap.....	10	100	4
LC	11.00	3/8-Inch Female Cap.....	10	100	4 3/4
LG	19.50	Cord Grip Cap for 3/8 to 1/2-Inch Cord.....	10	100	5 1/2
LT	7.50	Pendent Cap.....	10	100	2

Titan Bodies with Rings (without Caps) 250 Volts



4710	\$27.00	Key, 250 Watts, S. P....	10	100	16
4713	22.50	Keyless, 660 Watts.....	10	100	19
4714	27.00	Push, 660 Watts.....	10	100	19
4717	29.00	Push, 250 Watts.....	10	100	19
4715	37.00	Pull, 250 Watts, S. P....	10	100	16

Standard chain is 6 1/2 inches long.

Bryant Electrolier Keyless Sockets

660 Watts, 250 Volts

The cap and shell screw together. Standard finish is brush brass.



No. 66237

Cat. No.	Per 100	Cap In.	Carton	Std. Pkg.	Wt., Lbs.
66237	\$61.50	1/8	50	250	45
50766	69.00	3/8	10	100	17

Bryant Interchangeable Cold Molded Black Composition Socket Caps and Bodies

These sockets, made of black composition, are suitable for installation in many cases where metal shell sockets may not prove satisfactory. Each cap will fit either body.

Socket Caps



FA



FQ



FT

Wash nickel is standard finish on exposed metal parts.

Cat. No.	Per 100	Description	Carton	Std. Pkg.	Wt., Lbs.
FA	\$24.00	1/8-Inch Metal Bushing.....	10	100	1 1/4
FC	29.00	3/8-Inch Metal Bushing.....	10	100	15
FQ	30.00	Cord Grip 3/8 to 1/2-Inch.....	10	100	17
FT	12.00	Pendent Cap.....	10	100	11



No. 3770

3770	\$31.50	Key, 250 Watts, 250 Volts...	10	100	23
3773	28.00	Keyless, 660 Watts, 250 Volts.	10	100	14

Socket Bodies

With Groove for Weatherproof Shade-Holders



No. 3773

No. 3707 Bryant Aluminum Heavy Duty Sockets

With Shade-Holder Threads

660 Watts, 600 Volts

The shells are threaded on the end to receive a special shade-holder No. 3700. This device is fitted with lanced screw shell which prevents loosening of lamps from vibration.

Diameter of body, 1 3/4 inches.

Length, 2 1/2 inches.

Diameter of shade-holder flange, 1 3/4 inches.

Size cap, 1/2 inch.

Carton, 10. Standard package, 50.

Weight standard package, 21 pounds.

No. 3707..... per 100 \$71.00



Bryant Bayonet (Edi-Swan) Medium Base Devices

660 Watts, 250 Volts, (Not N. E. C.)

Keyless Socket with Shade-Holder Ring

Complete with 1/8-inch French thread cap (11 m/m 7 1/2 threads per c/m).

Regular finish is plain brass dipped, which will be furnished when no finish is specified. All other finishes, including brush brass and polished brass are special.

Brush brass will be charged at same price as polished brass.

Sockets similar to No. 567 can be supplied with caps of any thread, other than the one listed, on orders of sufficient size. Prices of such sockets will be quoted on application when specifications are given.



Cat. No.	Per 100	Carton	Std. Pkg.	Wt., Lbs.
567	\$80.00	25	250	27

Composition Attachment Plug

Cord hole elongated, 1/2 x 3/16 inch.

570	\$26.50	10	100	9
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Ediswan to Spartan Composition Adapter

707	\$26.50	10	100	5
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Bryant Fluorescent Lampholders

660 Watts, 250 Volts

Listed by Underwriters' Laboratories, Inc.

Flush or Surface Mounting

For use with 1 and 1½-inch fluorescent lamps.

The one screw mounting provides easy and rapid assembly. Bakelite cover plate furnishes a protected wiring job.

Available in either black or white bakelite.



No. 4302

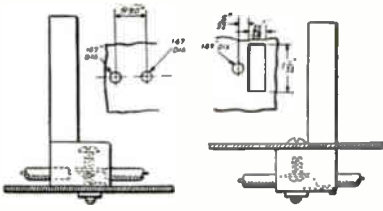


No. 4300

Straight Push Contacting

No.	Per 100	Description	Carton	Std. Pkg.	Wt., Lb.
4302	\$20.00	Black	10	100	6
4302-W	22.00	White	10	100	6
Twist Turn Contacting					
4300	\$20.00	Black	10	100	6
4300-W	22.00	White	10	100	6

Mounting Dimensions



Surface Mounted

Flush Mounted

Flush Mounting for Narrow Channel Wiring

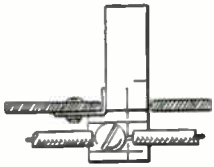
Twist Turn Contacting

For use only with 1-inch fluorescent lamp.

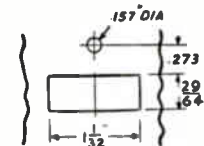


No. 4301

No.	Per 100	Description	Carton	Std. Pkg.	Wt., Lb.
4301	\$20.00	Black	10	100	6
4301-W	22.00	White	10	100	6



Mounting Method



Mounting Dimensions

Bryant Fluorescent Lampholders

With Starter Sockets

660 Watts, 250 Volts

Listed by Underwriters' Laboratories, Inc.



No. 4308



No. 4307

Straight Push Contacting

No.	Per 100	Carton	Std. Pkg.	Wt., Lbs.
4308	\$36.00	10	100	10
*4308-W	38.00	10	100	10
Twist Turn Contacting				
4307	\$36.00	10	100	10
*4307-W	38.00	10	100	10

*Lampholder only is white; starter socket is black.

Bryant Fluorescent Lamp Starters and Sockets

Listed by Underwriters' Laboratories, Inc.



No. FS2



No. 4306



No. 4309



No. 4305

Starters

Unit consists of an aluminum container with contacts which fit a bayonet connection in the starter socket. Contains a glow switch and a condenser to eliminate radio interference.

Packed 10 in a carton, 50 in a standard package.

No.	Per 100	Description	Std. Pkg.	Wt., Lb.
FS2	\$50.00	For 15-Watt, 18-Inch and 20-Watt, 24-Inch Lamps		2
FS4	50.00	For 30-Watt, 36-Inch and 40-Watt, 48-Inch Lamps		2

Starter Sockets

660 Watts, 250 Volts

Black bakelite.

Packed 10 in a carton, 100 in a standard package.

No.	Per 100	Description	Std. Pkg.	Wt., Lb.
4306	\$16.00	For Attaching to Lampholders		6
4309	16.00	For Separate or Remote Mounting		4
*4305	1.00	Spacer Sleeve for No. 4309 Socket; ¼ Inch High		5

*Packed 100 in a carton, 1000 in a standard package.

Bryant Lumiline Lampholders

660 Watts, 250 Volts

Listed by Underwriters' Laboratories, Inc.

Designed to provide compact mounting means for Lumiline Lamps used extensively in the illumination of show cases, display windows, signs, cove and trough lighting and other applications.



No. 3890



No. 3889



No. 3893

End Caps

Shallow Collar

Has a five-point engagement with lamp which insures secure contact at all times.

No.	Per 100	Description	Carton	Std. Pkg.	Wt., Lb.
3890	\$9.00	Black	50	200	2
3890-W	10.00	White	50	200	2

Deep Collar

3889	\$11.00	Black	50	200	5
3889-W	12.00	White	50	200	5

Deep Collar—with Switch

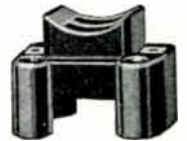
3893	\$22.00	Black	50	200	5
3893-W	23.00	White	50	200	5

Bases—Flush or Surface Mounting

Off-center terminal arrangement in wire channel makes wiring easy in any installation. Mounting hole spacings for flush, 1½ inches; for surface, 1 inch.



No. 3891



No. 3892

No.	Each	Description	Carton	Std. Pkg.	Wt., Lb.
3891	\$17.00	Black	50	200	7
3891-W	19.00	White	50	200	7
Twin					
3892	\$26.00	Black	50	200	13
3892-W	28.00	White	50	200	13

Bryant Intermediate Base Sockets

Listed by Underwriters' Laboratories, Inc.

Socket Caps



No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1A	\$13.00	25	100	2 1/2
Pendent				
With bakelite bushing 1 3/8-inch hole.				
1T	\$13.00	25	100	2
1/2-Inch Angle				
1M	\$31.50	25	50	1 1/4

Socket Bodies



Key				
75 Watts, 125 Volts				
4610	\$38.50	25	100	7
Keyless				
75 Watts, 250 Volts				
4613	\$27.00	25	100	7
Pull				
75 Watts, 125 Volts				
4615	\$62.50	25	100	7

Above caps and bodies are Wrinkle type and are interchangeable.

Standard finish is brush brass. Standard length of chain on pull socket bodies is 4 inches.

Candle Pull Sockets

75 Watts, 125 Volts



Composition, with paper jacket.

Has 1/8-inch female thread bushing.

Outside diameter of sleeve, 3 3/8 inch; over-all length, 2 5/8 inches. Standard length of chain, 5 in.

9640	\$112.50	25	100	8
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Keyless Candle Sockets

75 Watts, 250 Volts



Composition.

Has 1/8-inch female thread bushing.

Adjustable, 3 1/2 to 5 inches long. Outside diameter of paper jacket, 1/8 inch.

9652	\$22.00	25	100	14
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Green Templus Pendant Sockets

75 Watts, 250 Volts



Weatherproof.

Has 6-inch leads of No. 18 stranded rubber covered weatherproof wire.

For longer wires add \$2.00 per 100 devices for each extra foot on each conductor.

No.	Per 100	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
9650	\$18.50	25	100	4 1/4

Porcelain Cleat Receptacles

75 Watts, 250 Volts



For surface wiring. Diameter base, 1 1/2 inches; over lugs, 1 3/8 inches; overall height, 1 1/16 inches; screw spacing, 1 1/16 inches.

9653	\$18.50	25	100	16
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Porcelain Sign Receptacles

75 Watts, 250 Volts

No. 9663



For metal signs. Two screw mounting, screw terminals.

Fits 1-inch holes. Depth of back, 1 1/2 inches. Equipped with No. 8-32, 1/2-inch long, bronze supporting screws spaced 1 3/8 inches.

9663	\$18.50	25	100	13
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No. 9690



For metal signs. Screw ring, screw terminals.

Fits 1 1/16-inch holes; outside diameter of both screw ring and body, 1 3/8 inches. Depth of back, 1 inch.

9690	\$18.50	25	100	13
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Adapters



Medium base to intermediate base adapter.

9691	\$17.00	25	100	4
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Bryant Candelabra Sockets

75 Watts, 125 Volts

Pull Candle Socket

Composition with Paper Jacket and Female Thread Bushing



With Jacket On

The bushing of this socket is threaded for 1/8-inch iron pipe, .405-inch outside diameter, 27 threads per inch.

The standard chain is No. 3 size and extends 5 inches below the composition. The standard finish of chain is brush brass, but polished or dull nickel finish will be furnished without extra charge.

Outside diameter, 1 1/16 inch. Length over all, 2 1/2 inches. Regularly supplied with a paper insulating jacket which covers the mechanism and screw shell. Outside diameter of jacket, 3/8 inch.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Pkg.
540	\$112.50	25	50	3 1/2

Key Socket with Wrinkle Style Shell

Fastening

With 1/2-Inch Cap



434	\$53.00	25	100	9
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Keyless Socket with Threaded Shell

Fastening

With 1/4-Inch Cap



321	\$45.00	25	100	6
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Pull Socket with Wrinkle Style Shell

Fastening

With 1/4-Inch Cap



386	\$83.00	10	50	4
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Composition Decorative Socket

With Pendant Cap



Made in green composition and fitted with 6 inches of No. 18 B. & S. green braid, stranded rubber-covered wire.

323	\$26.50	25	100	4
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Porcelain Keyless Socket

With Male Thread Stud



Supporting stud is 5/16 inch outside diameter, 27 threads per inch.

Outside diameter of porcelain, 1 1/16 inch. Length of porcelain, 1 1/8 inches; length over all, 1 3/8 inches.

328	\$32.00	25	100	3 1/2
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With Female Thread Bushing



Bushing is threaded for 1/8-inch iron pipe, .405-inch outside diameter, 27 threads per inch.

Outside diameter of porcelain, 1 1/16 inch. Length of porcelain 1 1/8 inches; length over all, 1 25/32 inches.

347	\$25.50	25	100	
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Bryant Miniature and Candelabra

Receptacles

75 Watts, 125 Volts
Porcelain Cleat

Outside diameter of base, $1\frac{1}{2}$ inches. Thickness of base, $\frac{1}{2}$ inch. Height No. 366, $1\frac{1}{8}$ inches; No. 367, $1\frac{1}{2}$ inches. Supporting screw spacing, $1\frac{1}{8}$ inches.

No.	Per 100	Miniature Carton	Std. Pkg.	Wt., Lb. Std. Pkg.
366	\$21.50	25	100	10
367	\$21.50	Candelabra 25	100	11

Outside diameter of base, $1\frac{1}{8}$ inches. Thickness of base, $\frac{3}{8}$ inch. Height, $\frac{3}{4}$ inch. Supporting screw spacing, $1\frac{1}{8}$ inch.

No.	Per 100	Miniature Carton	Std. Pkg.	Wt., Lb. Std. Pkg.
*9445	\$21.50	25	200	9
*9446	\$21.50	Candelabra 25	200	13

Outside diameter of base, $1\frac{1}{2}$ inches. Thickness of base, $1\frac{1}{2}$ inch. Height, $1\frac{1}{2}$ inch. Supporting screw spacing, $1\frac{1}{8}$ inches.

*†19446	21.50	25	200	13
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Candelabra with Oblong Base

Base, $1\frac{1}{2} \times 1$ inch. Thickness of base, $1\frac{1}{2}$ inch. Supporting screw spacings, $1\frac{1}{2}$ by $1\frac{1}{2}$ inch. Height, No. 325, $1\frac{1}{8}$ inches; No. 612, $1\frac{1}{8}$ inches.

No.	Per 100	Porcelain Base	Std. Pkg.	Wt., Lb. Std. Pkg.
325	\$17.00	10	100	9
*612	\$38.50	Composition Base 10	100	9

Porcelain for Metal Signs

Hole required, $\frac{2}{32}$ inch in diameter. Depth, $1\frac{1}{8}$ inch. Supporting screw spacing, $1\frac{1}{8}$ inches.

No.	Per 100	Miniature Carton	Std. Pkg.	Wt., Lb. Std. Pkg.
387	\$30.00	10	100	8
388	\$30.00	Candelabra 10	100	10

With Removable Ring for Metal Signs

Hole required, $\frac{3}{4}$ inch in diameter. Diameter, $1\frac{1}{8}$ inches. Depth No. 389, $\frac{5}{8}$ inch; No. 390, $\frac{7}{8}$ inch. Thickness of ring, $\frac{1}{4}$ inches.

No.	Per 100	Miniature Carton	Std. Pkg.	Wt., Lb. Std. Pkg.
389	\$34.00	25	100	8
390	\$31.00	Candelabra 25	100	9

Porcelain for Wooden Signs

Size hole required, $1\frac{1}{8}$ inch in diameter. Thickness of back, $\frac{5}{8}$ inch. Diameter of back, $1\frac{1}{8}$ inches. Length of neck, $\frac{7}{8}$ inch. Supporting screw spacing, $1\frac{1}{2}$ inches.

*25705	\$40.50	10	100	12
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*Not listed as standard by Underwriters' Laboratories.
†Fitted with heat resisting interior.

Bryant Lampholders

For Mercury, Black Light and Sun Lamps

660 Watts, 250 Volts

Listed by Underwriters' Laboratories, Inc.

With Admedium screw shell. The regular medium base amp will not fit this lampholder.

Packed 10 in a carton, 100 in a standard package.

With Female Caps

No.	Per 100	Size In.	Wt., Lb. Std. Pkg.
4381	\$90.00	$\frac{1}{8}$	30
4383	90.00	$\frac{3}{8}$	30
4385	90.00	$\frac{1}{2}$	30

With Male Caps

4382	\$90.00	$\frac{3}{8}$	30
4384	90.00	$\frac{1}{2}$	30

Bryant Prefocusing Sockets and Receptacles

Listed by Underwriters' Laboratories, Inc.

Designed so that the light source is always at the focal point of the reflector. Used on landing fields, projection lamps, for general photographic work, etc., where correct focusing and reflecting of light are essential.



No. 3740



No. 3741

For Medium Prefocusing Lamps

1000 Watts, 250 Volts

Black Bakelite, for Surface or Concealed Wiring

No.	Per 100	Height Inches	Over-all Centers Inches	Screw Diameter Inches	Cord Hold Inches	Carton Pkg.	Std. Pkg.	Wt. Lb. Std. Pkg.
3740	\$136.00	$1\frac{7}{8}$	2	...	...	10	100	21
3741	\$101.00	$2\frac{3}{16}$	...	$1\frac{3}{4}$	$1\frac{1}{2}$	10	100	35
3742	\$96.50	$1\frac{7}{8}$	$1\frac{15}{16}$	$1\frac{3}{4}$	...	10	100	32

For Mogul Prefocusing Lamps

2500 Watts, 250 Volts

Porcelain



No. 3841



No. 3842

3841	\$376.50	$4\frac{1}{16}$	...	$2\frac{3}{16}$	...	5	50	48
3842	376.50	$2\frac{3}{4}$	3	$3\frac{3}{4}$	...	5	50	50

*Diameter including flare, $2\frac{25}{32}$ inches.

Bryant Marine, Railway and Industrial Lamp Receptacles

Heavy Duty

With Bakelite Base and Lamp Grip

Diameter of base, 2 inches. Height, $1\frac{13}{16}$ inches. Supporting screw spacing, $1\frac{1}{8}$ inches.

Key receptacle, center of base to end of key, $1\frac{1}{16}$ inches.

Single Pole Key, 250 Watts, 250 Volts

Regularly supplied with two 1-inch 8x32 round head pointed brass screws.

Center of base to end of key, $1\frac{1}{16}$ inches.

Cat. No.	Per 100	Carton	Std. Pkg.	Wt., Lb. Std. Pkg.
4160	\$52.50	10	100	28

Keyless, 660 Watts, 250 Volts

Regularly supplied with two 1-inch 8x32 round head pointed brass screws.

4161	\$37.50	10	100	21
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Bakelite Screw Shell Insulator

For Nos. 4160 and 4161.

Has screw mounting.

4260	\$34.00	10	100	9 $\frac{1}{2}$
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Watertight Keyless Receptacle

With Composition Base
660 Watts, 250 Volts

Has one binding screw on each terminal.

Diameter, $2\frac{3}{4}$ inches. Height over all $1\frac{1}{4}$ inches. Height above mounting surface, $\frac{1}{8}$ inches. Supporting screw spacing, $2\frac{5}{16}$ inches. There are four supporting screw holes spaced 90° apart. Screws for mounting not furnished.

Regularly furnished without sealing compound over terminal plates and fastening screws.

4146	\$37.00	10	100	36
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No. 4160



No. 4146

Bryant Porcelain Socket Bodies



No. 70 Single-Pole Key

250 Watts, 250 Volts

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
70	\$31.50	10	100	26



No. 71 Push-Button

660 Watts, 250 Volts

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
71	\$43.50	10	100	31



No. 73 Keyless

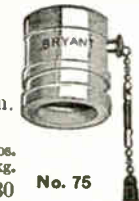
660 Watts, 250 Volts

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
73	\$28.00	10	100	16

No. 74 Push Button

250 Watts, 250 Volts

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
74	\$42.50	10	100	31



No. 75 Single-Pole Pull

250 Watts, 250 Volts

No. 513 insulating link is inserted in the chain. Standard finish of exposed metal is nickel.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
75	\$71.00	10	100	30

Bryant Porcelain Caps

Standard finish of metal on caps is Perma nickel.



No. PA 1/8-Inch Female Brass

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
PA	\$24.00	10	100	14



No. PC 3/8-Inch Female Brass

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
PC	\$29.00	10	100	14



No. PD 1/2-Inch Female Brass

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
PD	\$40.50	10	100	16



No. PP 3/8-Inch Female Brass Angle

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
PP	\$90.50	10	100	23



No. RW 1/2-Inch Female Brass Angle

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
RW	\$95.50	10	100	28



No. PQ Cord Grip

For from 3/8 to 1/2-inch cord.

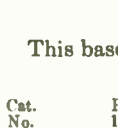
Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
PQ	\$30.00	10	100	17



No. PT Pendant

With 1 1/2-inch cord hole.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
PT	\$12.00	10	100	10



No. RT Pendant

With 1/2-inch cord hole.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
RT	\$12.00	10	100	13

Bryant Porcelain Bases



No. PZ



No. RL

No. PZ Concealed Base

This base will fit Type No. 500 Adaptibox.

Cat. No.	Per 100	O.D. Inches	Supporting Screw Spacings Inches	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
PZ	\$22.50	2 3/4	2 1/4	10	100	38

No. RL 3/4-Inch Box Base

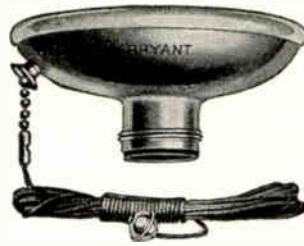
Cat. No.	Per 100	O.D. Inches	Supporting Screw Spacings Inches	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
RL	\$36.00	3 5/8	2 3/4	10	50	24

No. RM 3/4 and 4-Inch Box Base

Cat. No.	Per 100	O.D. Inches	Supporting Screw Spacings Inches	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
RM	\$48.00	4 1/16	2 3/4, 3 1/2	5	50	37

Bryant Surface and Outlet Box Receptacles

With Binding Screws



No. 4104

These receptacles are flat on the back and are therefore suitable for use either on outlet boxes or without them. They are also approved for use on walls or ceilings containing metal lathing and upon metal surfaces.

The standard finish is brush brass which will be furnished when no finish is specified.

Keyless

660 Watts, 250 Volts
For 3 1/4-Inch Outlet Boxes

Diameter of base, 3 5/8 inches. Height, 1 1/2 inches. Supporting screw spacing, 2 3/4 inches.

Carton, 2; standard package, 50. Weight package, 29 lbs. No. 4102.....per 100 \$74.50

For 3 1/2 or 4-Inch Outlet Boxes

Diameter of base, 4 1/2 inches. Height, 1 1/2 inches. Supporting screw spacings, 2 3/4 and 3 1/2 inches.

Carton, 2; standard package, 50. Weight package, 46 lbs. No. 4100.....per 100 \$90.50

Pull

250 Watts, 250 Volts
For 3 1/4 or 4-Inch Outlet Boxes

Diameter of base, 4 1/2 inches. Height, 2 inches. Supporting screw spacings, 2 3/4 and 3 1/2 inches.

Equipped with short chain, 4 feet of small cord, and small composition pendant ball.

Carton, 2; standard package, 50. Weight package, 56 lbs. No. 4104.....per 100 \$196.50

Bryant Porcelain Outlet Box Receptacles
With Shade-Holder Groove



No. 4278

Can be mounted on standard 3 1/4 and 4-inch outlet boxes.

Diameter of base, 4 5/8 inches. Height, 2 5/8 inches. Supporting screw spacing, 2 3/4 to 3 1/2 inches on centers.

Pull chain receptacles are fitted with nickel chains and tassel pendants but will be furnished with brush brass chains at no extra charge

Keyless—600 Watts, 250 Volts

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
4273	\$78.00	Keyless Receptacle.....	2	50	59

Pull—250 Watts, 250 Volts

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
4275	\$132.00	6 1/2-Inch Chain.....	2	50	58
4278	140.00	Short Chain, 4-Foot Cord.....	2	50	58

No. 4700 Bryant Adjustable Angle Adapters

For Reflector Type Lamps

660 Watts, 250 Volts
Listed by Underwriters' Laboratories, Inc.
Horizontal adjustment, 340°; vertical, 70°
Thumb screw setting.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
4700	\$100.00	10	100	1

Bryant Porcelain Medium Base Lampholders

660 Watts, 250 Volts
Listed by Underwriters' Laboratories, Inc.



No. H73

With shadeholder groove.

For 3/4-Inch Boxes

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
H227	\$19.00	With Screw Terminals	5	100	62
For 4-Inch and Switch Boxes					
H228	\$24.00	With Screw Terminals	5	50	45
On 3/4-Inch Cadmium Plated Covers					
H73	\$15.00	With Screw Terminals	10	100	50
On 4-Inch Cadmium Plated Covers					
H74	\$17.00	With Screw Terminals	5	100	68

Bryant Twin Sockets

Keyless Sockets

Each Outlet 660 Watts, 250 Volts
Length of sockets, 2 1/16 inches.

No.	Per 100	Bushing In.	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
46750	\$86.00	1/8	2	10	2
46751	86.00	3/8	2	10	2



No. 46750

Pull Sockets

Length, 3 3/16 inches.

Combined Load 250 Watts, 250 Volts
Both outlets controlled simultaneously.

No.	Per 100	Bushing In.	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
4051	\$127.50	1/8	2	10	3
4052	140.00	3/8	2	10	3



Nos. 4051 and 4005

Each Outlet 250 Watts, 250 Volts

First pull, outlet No. 1 alone; 2nd pull, both outlets in multiple; 3rd pull, No. 1 off, No. 2 on; 4th, both off.

No.	Per 100	Bushing In.	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
4005	\$144.50	1/8	2	10	3

Bryant Porcelain Medium Base Lampholders

250 Watts, 250 Volts
Listed by Underwriters' Laboratories, Inc.

With shadeholder groove.

Packed 10 in a carton, 50 in a standard package.

Removable Interior Type

For 3/4-Inch Boxes
Diameter, 3 3/8 Inches

No.	Per 100	Description	Wt., Lb. Std. Pkg.
H165	\$30.00	6-Inch Chain....	30
H167	32.00	Chain & Insulator	30
H168	24.00	Chain & Cord....	30



No. H168

For 4-Inch and Switch Boxes
Diameter, 4 1/4 Inches

No.	Per 100	Description	Wt., Lb. Std. Pkg.
H185	\$42.50	6-Inch Chain....	40
H187	47.00	Chain & Insulator	40
H188	34.20	Chain & Cord....	40

One-Piece Type

For 3/4-Inch Boxes
Diameter, 4 1/4 Inches

No.	Per 100	Description	Wt., Lb. Std. Pkg.
H265	\$30.00	6-Inch Chain....	40
H267	32.00	Chain & Insulator	40
H268	24.00	Chain & Cord....	40



No. H268

For 4-Inch and Switch Boxes
Diameter, 5 1/4 Inches

No.	Per 100	Description	Wt., Lb. Std. Pkg.
H285	\$42.50	6-Inch Chain....	60
H287	47.00	Chain & Insulator	60
H288	34.20	Chain & Cord....	60



No. H135

With Convenience Outlet

Outlet—15 Amperes, 125 Volts
10 Amperes, 250 Volts
For 3/4-Inch Boxes

No.	Per 100	Description	Wt., Lb. Std. Pkg.
H135	\$41.00	6-Inch Chain....	40
H137	43.00	Chain & Insulator	40
H138	35.00	Chain & Cord....	40

For 4-Inch and Switch Boxes

No.	Per 100	Description	Wt., Lb. Std. Pkg.
H145	\$53.50	6-Inch Chain....	60
H147	58.00	Chain & Insulator	60
H148	46.00	Chain & Cord....	60

Bryant Porcelain Cleat Medium Base Receptacles

660 Watts, 250 Volts
Listed by Underwriters' Laboratories, Inc.



No. 9402



No. 4013



No. 9403

Screw spacing, 2 5/16 inches.

Packed 10 in a carton, 100 in a standard package.

No.	Per 100	Description	Wt., Lb. Std. Pkg.
9402	\$29.00	Plain.....	38
4013	37.50	With Shadeholder Groove.....	35
9403	45.00	With Short Brass Shell.....	32

No. 50717 Bryant Pony Wall Keyless Sockets

With Base for Concealed Work

660 Watts, 250 Volts



Diameter of base, 2 inches. Height, 2 inches. Supporting screw spacing, 1 1/4 inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
50717	\$40.50	10	100	22

Bryant Porcelain Cleat Receptacles

With Shade-Holder Groove

660 Watts, 250 Volts



Length, 3 15/16 in. Width, 1 in. Height, 2 1/4 in. Supporting screw spacings, 3/16 by 3 1/2 in.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
58300	\$48.00	5	100	55

No. 59275 Bryant Porcelain Cleat Receptacles

660 Watts, 250 Volts



Raises wires 1 inch from surface.

Diameter over lugs, 2 1/2 inches. Height, 1 1/2 inches. Supporting screw spacing, 2 inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
59275	\$38.50	10	100	35

No. 4229 Bryant Porcelain Receptacles

660 Watts, 250 Volts



For Cleat or Concealed Wiring

Diameter base, 2 3/8 inches. Height, 1 7/8 inches. Holes for supporting screws are elongated to provide 1 1/2 to 1 3/4 in. on centers.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
4229	\$23.50	10	100	35

Bryant Porcelain Wood Molding Receptacles

660 Watts, 250 Volts



No. 42453

Length, 2 5/16 inches. Width, 2 3/8 inches. Height, 1 11/16 inches. Supporting screw spacing, 1 3/16 inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
42453	\$41.50	10	100	46



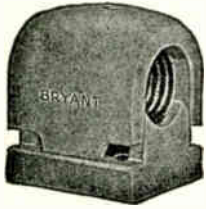
No. 4026

With Shade-Holder Groove

Length, 2 7/8 inches. Width, 1 11/16 inches. Height, 1 11/16 inches. Supporting screw spacing, 2 3/32 inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
4026	\$58.50	10	100	31

Bryant Double End Porcelain Receptacles
For Concealed, Cleat, or Molding Work
660 Watts, 250 Volts



No. 4248



No. 4249

For use with metal reflectors. The receptacle will take up to 100-watt lamps, and, when used with No. 4249 Sub-Base, up to 150-watt lamps. Mounting screw holes are staggered, centers $1\frac{1}{8}$ inches on width and 1 inch on length.

Medium Base, Keyless

Size of base, $2\frac{1}{4} \times 1\frac{3}{4}$ inches. Height, $2\frac{3}{8}$ inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
4248	\$61.50	10	100	60

Porcelain Sub-Base

Size of base, $2\frac{1}{4} \times 1\frac{3}{4}$ inches. Thickness, $\frac{3}{8}$ inch.

4249	\$13.00	10	100	10
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Bryant Outlet Box Receptacles

660 Watts, 250 Volts

Base, $2 \times 1\frac{1}{2}$ inches. Height, $1\frac{1}{2}$ inches. Supporting screw spacing, $1\frac{1}{2}$ inches.



No. 9397



No. 9514

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
*9397	\$26.50	10	100	14

2-Piece, Flush

Hole required, $1\frac{1}{2}$ inches in diameter. Flange, $2\frac{1}{4}$ inches in diameter, $\frac{1}{2}$ inch thick. Depth from back of flange, $1\frac{5}{8}$ inches. Supporting screw spacing, $1\frac{7}{8}$ inches.

9514	\$47.00	10	100	32
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With Marine Screw Shell

Outside diameter of base, $2\frac{3}{8}$ inches. Supporting screw spacings, 2 to $2\frac{3}{16}$ inches. The marine screw shell is formed of a coil of wire and has the advantage of holding the lamp base firmly in places subject to vibration.

*22287	\$64.00	10	100	41
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*Not listed as standard by Underwriters' Laboratories.



No. 22287

Bryant Bakelite Pin Type Lampholders

Listed by Underwriters' Laboratories, Inc.



No. 5464



No. 54644



No. 54643

For decorative, streamer and outdoor fixture work.

The terminals are pointed and pierce the wire insulation when the cap is screwed on.

Furnished with hook.

Packed 10 in a carton, 100 in a standard package.

Medium Base
660 Watts, 250 Volts

No.	Per 100	Description	Wt., Lbs. Std. Pkg.
5464	\$20.00	For Nos. 12 or 14 Wire	13
5465	20.00	For Nos. 10 or 12 Wire	13

Intermediate Base

75 Watts, 250 Volts

54644	\$10.00	For Nos. 16 or 18 Wire	4
54645	16.00	For No. 14 Wire	4

Candelabra Base

75 Watts, 250 Volts

54643	\$7.00	For No. 18 Wire	4
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Bryant Porcelain Weatherproof Sockets
With Die Cast Caps

660 Watts, 600 Volts
Keyless Body

Length overall, $1\frac{1}{16}$ inches; diameter, $1\frac{1}{2}$ inches.



No. 9429



No. 9455



No. 9456



No. 9457



No. 9458



No. 9460

No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9429	\$13.50	10	100	17
9455	\$6.50	10	100	15
9456	\$6.50	10	100	14
9457	\$6.50	10	100	13
9458	\$10.00	10	100	11
9460	\$15.50	10	100	16
9461	\$15.50	10	100	14

Bryant Porcelain Weatherproof Sockets

660 Watts, 600 Volts

These devices are regularly fitted with 6-inch leads of No. 14 R.C. stranded rubber covered wire.

Main diameter, $1\frac{1}{2}$ inches. Flange diameter, $1\frac{5}{8}$ inches. Length of porcelain, $1\frac{1}{16}$ inches.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
399	\$15.00	10	100	27

With Shade-Holder Groove

Main diameter, $1\frac{1}{2}$ inches. Flange diameter, $1\frac{5}{8}$ inches. Length of porcelain, $1\frac{5}{8}$ inches.

9366	\$21.50	10	100	25
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Bryant Porcelain Weatherproof Bragdon Sockets

660 Watts, 600 Volts

With Shade-Holder Groove

Main diameter, $1\frac{5}{8}$ inches. Diameter of skirt, $2\frac{1}{16}$ inches. Length, $2\frac{3}{8}$ inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
50997	\$82.50	10	100	52

Bryant Composition Weatherproof Sockets

660 Watts, 600 Volts

With Shade-Holder Groove

Main diameter tapers from $1\frac{1}{8}$ to $1\frac{1}{16}$ inches. Flange diameter, $1\frac{5}{8}$ inches. Length of composition, $2\frac{3}{16}$ inches.



No. 43310

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
60666	\$20.50	10	100	25

Pony Size, With Shade-Holder Groove

Main diameter, $1\frac{1}{8}$ inches. Flange diameter, $1\frac{5}{8}$ inches. Length of composition, $\frac{1}{2}$ inches.

43310	\$19.50	10	100	2
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Bryant Hemco Bakelite Weatherproof Sockets

Pony Size—660 Watts, 600 Volts

With 6-inch leads.

No. H309 without shade-holder groove. No. H310 furnished with shade-holder groove. Packed 10 in carton; 100 in standard package.



No. H310

No.	Per 100	Wt. per Package	Std. Pkg.	Wt., Lbs. Std. Pkg.
H309	\$10.50	13	100	13
H310	\$14.50	13	100	13

Bryant Porcelain Receptacles

For Outlet Boxes, Metal Signs and Lighting Units



No. 61988

The hole required for each of these receptacles is 1½ inches in diameter. Diameter of receptacles, 1¾ inches. Diameter of rings, 1¾ inches.

Carton, 10. Standard package, 100.

Deep Receptacles with Shallow (½-Inch) Ring and 1 Lug

660 Watts, 600 Volts

Cat. No.	Per 100	Description	Separation In.	Depth Back In.	Wt. Lbs. Std. Pkg.
61988	\$17.50	With Binding Screws.....	1	1½	28

Shallow Receptacles with Deep (⅝-Inch) Ring and 1 Lug

Cat. No.	Per 100	Description	Separation In.	Depth Back In.	Wt. Lbs. Std. Pkg.
59108	\$17.50	With Binding Screws.....	5/8	1 13/16	23
4109	26.50	Binding Screws Covered.....	5/8	1 13/16	28
4003	\$23.50	With 6-Inch Wires.....	27/32	27/32	28

Shallow Receptacles with Deep (⅝-Inch) Ring and 5 Lug Slots

660 Watts, 250 Volts

59106	\$17.50	With Binding Screws.....	5/8	1 13/16	22
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With Deep (⅝-Inch) Screw Ring and 1 Lug



No. 4133 No. 4133 with No. 433 Shade-Holder No. 4135

With groove for Weatherproof Shade-Holders and recess or Emergency Shade-Holders.

660 Watts, 250 Volts

4133	\$22.50	With Binding Screws.....	5/8	1 13/16	20
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660 Watts, 600 Volts

4135	\$28.50	With 6-Inch Wires.....	27/32	27/32	26
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Porcelain Screw Rings for Above Receptacles

Cat. No.	Per 100	Description	Carton	Std. Wt. Lbs. Pkg. Std. Pkg.
803	\$9.50	Shallow, ½-Inch Ring.....	25	100 7
804	9.50	Deep ⅝-Inch Ring.....	25	100 9
805	11.50	Shade-Holder Ring.....	25	100 6

No. 4063 Bryant Porcelain Receptacles

For Metal Signs, Border Lights and Cove Troughs

660 Watts, 600 Volts



Emergency shade-holder No. 443 may be attached to this receptacle only when used on not over 250 volts.

The binding screws are staked and will not fall out.

With two mounting screws and grooved back.

Size hole required, 1 3/8 inches.

Diameter, 1 5/8 inches. Depth, 1 1/2 inches.

Supporting screw spacing, 1 13/16 inches.

Carton, 10. Standard package, 100.

Weight package, 27 pounds.

4063	\$16.00	*4063T	18.00
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er 100 With unthreaded shell for lamp testing.

Hemco Sign Receptacles



No. H100



No. H101



No. H114

Cat. No.	Per 100	Description	Carton	Std. Wt. Lbs. Pkg. Std. Pkg.
H100	\$9.00	With Binding Screws.....	25	250 55
H101	15.00	With Covered Back.....	25	250 69
H114	16.00	With 9-Inch Leads No. 14 Stranded Wire.....	25	250 75
H118	9.00	With 9-Inch Leads No. 18 Code Fixture Wire.....	25	250 68

Hemco Cleat and Pull Receptacles



No. H715



No. H978

H715	\$9.00	Bakelite Pony Cleat Receptacle	10	100 11
H975	22.00	Pull, with 6½-Inch Chain.....	10	100 38
H976	20.00	Pull, with 4-Foot Cord.....	10	100 38
H977	24.00	Pull, with Chain, Insulator.....	10	100 38
H978	20.00	Pull, with Chain, and 4-Foot Cord.....	10	100 38

No. 5408 Bryant Porcelain Receptacles

Medium Base

660 Watts, 250 Volts

Listed by Underwriters' Laboratories, Inc. For signs, fixtures, appliances and general panel mounting work.

Has two spring studs for mounting.

No.	Per 100	Carton	Std. Wt. Lbs. Pkg. Std. Pkg.
5408	\$16.00	10	100 24

No. 9171 Bryant Porcelain Cleat Receptacles

660 Watts, 250 Volts, Not N. E. C.

Diameter of base, 1 13/16 inches.

Height, 1 1/2 inches.

Supported by one screw in the center.



Cat. No.	Per 100	Carton	Std. Wt. Lbs. Pkg. Std. Pkg.
9171	\$14.00	10	100 24

Bryant Porcelain Concealed Receptacles

660 Watts, 250 Volts

Listed by Underwriters' Laboratories, Inc.



No. 4000



No. 4002



No. 50744

Packed 10 in a carton, 100 in a standard package.

No.	Per 100	Description	Diam. In.	Screw Spacing In.	Wt. Lbs. Std. Pkg.
4000	\$41.50	Plain.....	2 3/8	1 5/8	37
4001	50.00	With Shadeholder Groove..	2 3/8	1 5/8	36
4002	58.50	With Short Brass Shell.....	2 5/16	1 5/8	30
50744	50.00	With Porcelain Screw Ring.	2 1/2	1 3/16	to 1 1/4 35

No. 9407 Bryant Weatherproof Porcelain Receptacles



660 Watts, 600 Volts
 Listed by Underwriters' Laboratories, Inc.
 With side wires. Outside diameter of base, 2 1/16 inches; thickness, 1 inch. Screw spacings, 2 5/16 inches.

No.	Per 100	Ht. In.	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
9407	\$38.50	2 1/8	10	100	70

Bryant Porcelain Pony Cleat Receptacles

660 Watts, 250 Volts
 Listed by Underwriters' Laboratories, Inc.



No. 50714

Screw spacing, 1 3/16 inches.



No. 50715

With Solder Terminals

No.	Per 100	Car-ton	Standard Package	Weight Pounds Standard Package
50714	\$8.50	10	100	25
50715	9.00	10	100	25

No. H50721 Bryant Bakelite Receptacles Medium Base



660 Watts, 250 Volts
 Listed by Underwriters' Laboratories, Inc.
 With covered screw terminals. Screw spacing, 1 3/16 inches. Bakelite cover held in place by snap ring.

No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
H50721	\$14.50	20	100	15

Bryant Mogul Base Lampholders

Listed by Underwriters' Laboratories, Inc.



No. 4021

Brass Shell Keyless Sockets
 1500 Watts, 600 Volts

Diameter, 2 inches. Length, 3 3/4 inches. Packed 5 in a carton, 50 in a standard package.

No.	Per 100	Description	Wt., Lb. Std. Pkg.
4021	\$225.00	3/8-Inch Cap.....	30
4022	225.00	1/2-Inch Cap.....	31

Porcelain Cleat Receptacles

1500 Watts, 250 Volts

Diameter over lugs, 3 1/2 inches. Diameter of neck, 2 1/4 inches. Height, 2 5/16 inches. Screw spacing, 2 7/8 inches.

Packed 5 in a carton, 50 in a standard package.



No. 4073

No.	Per 100	Wt., Lb. Std. Pkg.
4073	\$81.00	40

Porcelain Keyless Sockets

1500 Watts, 250 Volts

For three-light lamps. Diameter, 2 5/16 inches. Length, 3 3/8 inches. Length body only, 2 5/16 inches.

Packed 5 in a carton, 50 in a standard package.



No. 4559

No.	Per 100	Description	Wt., Lb. Std. Pkg.
4559	\$74.50	With 3/8-Inch Brass Cap.	35
4560	74.50	With 3/8-Inch Yoke.....	33

Bryant Mogul Base Porcelain Sockets

Listed by Underwriters' Laboratories, Inc.

With Aluminum Caps

1500 Watts, 600 Volts
 Bodies Only



No. 4123



No. 4062



No. 4081

Length, 2 1/2 inches.

Packed 5 in a carton, 50 in a standard package.

No.	Per 100	Description	Diam. In.	Wt., Lb. Std. Pkg.
4123	\$47.00	With Binding Screws at Top.....	2 3/16	28
4062	59.50	With Binding Screws at Side....	2 1/4	30
4081	75.50	With 15-Inch, No. 14 Stranded R. C. Wires.....	2 3/16	33

Aluminum Caps



No. SA



No. SB

For use with Nos. 4123, 4062 and 4081 bodies.

Packed 10 in a carton, 50 in a standard package.

No.	Per 100	Description	Wt., Lb. Std. Pkg.
SA	\$32.50	3/8-Inch Female Cap.....	3 1/2
SB	32.50	1/2-Inch Female Cap.....	4

With Cast Iron Caps

1500 Watts, 600 Volts



No. 4291

Diameter, 2 3/16 inches. Length, 3 1/16 inches. Length body only, 2 1/2 inches.

Packed 10 in a carton, 50 in a standard package.

No.	Per 100	Description	Wt., Lb. Std. Pkg.
4291	\$47.00	With 3/8-Inch Cap	30
4292	50.50	With 1/2-Inch Cap	31

For 3-Light Lamps

1500 Watts, 250 Volts



No. 4563



No. 4573

Diameter, 2 3/16 inches. Length, 3 3/8 inches. Length of body only, 2 5/16 inches.

Packed 5 in a carton, 50 in a standard package.

No.	Per 100	Description	Wt., Lb. Std. Pkg.
4563	\$68.00	Body Only.....	3
4573	6.50	3/8-Inch Brush Brass Cap.....	
4583	6.00	3/8-Inch Yoke.....	

Switches for Controlling 3-Light Lamps

No.	Description	No.	Description
27	Fluted Catch Body	4335	Ceiling, Pull on 3 1/2 Inch Box Cover
2892	Tumbler, Flush	4345	Ceiling, Pull on 4-Inch Box Cover
2894	Tumbler, Flush		
2390	Ceiling, Pull		

Hubbell Standard Socket Bodies



Standard finish is brush brass. Special finishes available at addition in price.

Pull sockets regularly equipped with 6½-inch chains. Extra length chain \$11.00 per 100 feet or fraction, cord \$2.00 per 100 feet or fraction.

Standard length of keys for all key sockets is 1 inch.

250 Watts, 250 Volts

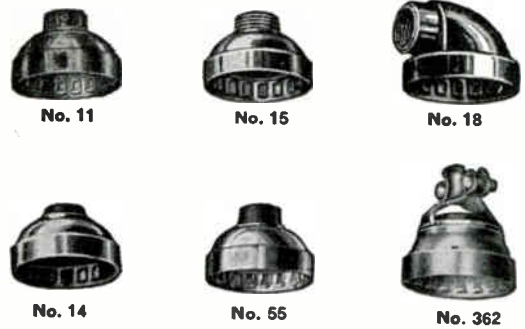
No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
60	\$23.50	Pull, Brush Brass	25	250	41
60	23.00	Pull, Bright Dipped	25	250	41
*61	17.50	Key, Brush Brass	25	250	44
*61	17.00	Key, Bright Dipped	25	250	44

660 Watts, 250 Volts

178	\$27.50	Pull, Brush Brass	25	250	32
178	27.00	Pull, Bright Dipped	25	250	32
75	52.00	Key, Brush Brass	25	250	44
62	14.00	Keyless, Brush Brass	25	250	34
62	13.50	Keyless, Bright Dipped	25	250	34

*Fitted with porcelain bushing on keyshaft, at point where it passes through shell, to prevent wear.

Hubbell Standard Brass Socket Caps



Standard finish is brush brass. Special finishes available upon request.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
11	\$8.00	Female, 1/8-Inch, Brush Brass	25	250	12
11	7.50	Female, 1/8-Inch, Bright Dipped	25	250	12
12	20.00	Female, 1/4-Inch, Brush Brass	25	250	2
13	12.00	Female, 3/8-Inch, Brush Brass	25	100	6
13	11.50	Female, 3/8-Inch, Bright Dipped	25	100	6
149	30.00	Female, 1/2-Inch, Brush Brass	25	50	4
15	15.00	Male, 1/8-Inch, Brush Brass	25	50	3
17	20.00	Male, 3/8-Inch, Brush Brass	25	50	3
18	35.00	Angle, 1/8-Inch, Brush Brass	25	50	4
20	40.00	Angle, 3/8-Inch, Brush Brass	25	50	5
14	8.00	Pendant, Brush Brass	25	250	8
14	7.50	Pendant, Bright Dipped	25	250	8
55	15.00	Porcelain Bushing, Brush Brass	25	100	5
362	24.50	Pendant, Cord Grip, .375 to .500-Inch Cord, Brush Brass	25	100	12
363	24.50	Pendant, Cord Grip, .250 to .375-Inch Cord, Brush Brass	25	100	16

Hubbell Standard Pull Switch Bodies

3 Amperes, 125 Volts; 1 Ampere, 250 Volts



Standard finish is brush brass. Special finishes available at addition in price.

Pull switches regularly furnished with short chain and 4-foot black cord. Extra length chain \$11.00 per 100 feet or fraction, cord \$2.00 per 100 feet or fraction.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
63	\$85.00	Fixture	10	20	4
65	89.50	Rosette	10	20	4

No. 7218 Hubbell Plug Bodies

With Double T Slots

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

Standard finish is brush brass. Special finishes available at an addition in price.

Carton, 10. Standard package, 20.

Weight per standard package, 3 pounds.

No. 7218.....per 100 \$36.50



Hubbell Standard Socket Bases

Porcelain



No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
25	\$29.00	Small Concealed	10	100	20
57	29.00	Small Concealed, Slotted, Screw Holes 1½ Inches on Centers	10	100	19
27	37.50	Surface Wiring, Screw Holes 2½ Inches on Centers	10	100	28

For 3¼-Inch Outlet Boxes



No. 38

Standard finish is brush brass. Special finishes available at an addition in price.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
38	\$58.50	Insulated Ceiling, Screw Holes 2½ and 2¾ Inches on Centers	10	50	26

Hubbell Standard Brass Shell Sockets



No. 3618

No. 3664

No. 3667

Standard finish is brush brass. Special finishes available at addition in price.

Pull sockets regularly equipped with 6½-inch chains. Extra length chain \$11.00 per 100 feet or fraction, cord \$2.00 per 100 feet or fraction.

Standard length of keys for all key sockets is 1 inch.

250 Watts, 250 Volts

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
3618	\$31.50	Pull, 1/8-Inch, Brush Brass....	25	250	53
3618	30.50	Pull, 1/8-Inch, Bright Dipped...	25	250	53
3620	31.50	Pull, Pendant, Brush Brass....	25	250	50
*3664	25.50	Key, 1/8-Inch, Brush Brass....	25	250	55
*3664	24.50	Key, 1/8-Inch, Bright Dipped...	25	250	55
*3665	29.50	Key, 3/8-Inch, Brush Brass....	25	250	57
*3666	25.50	Key, Pendant, Brush Brass....	25	250	51
*3666	24.50	Key, Pendant, Bright Dipped..	25	250	51

660 Watts, 250 Volts

3667	\$22.00	Keyless, 1/8-Inch, Brush Brass..	25	250	46
3667	21.00	Keyless, 1/8-Inch, Bright Dipped	25	250	46
3668	26.00	Keyless, 3/8-Inch, Brush Brass..	25	250	50
3669	22.00	Keyless, Pendant, Brush Brass..	25	250	45

*Fitted with porcelain bushing on keyshaft, at point where it passes through shell, to prevent wear.

Hubbell Brass Shell Threaded-Catch Sockets

Socket Bodies



No. 1639

No. 1637

No. 1638

Threaded ring is included as part of socket body. Standard finish is brush brass.

250 Watts, 250 Volts

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
1637	\$27.00	Key Body.....	25	250	49
1639	37.00	Pull Body.....	25	250	45

660 Watts, 250 Volts

1638	\$22.50	Keyless Body.....	25	250	39
1636	41.50	Pull Body.....	25	250	42
1729	43.50	Key Body.....	25	250	47

Socket Caps



No. 1630

No. 1632

No. 1634

No. 2502

Standard finish is brush brass.

1630	\$7.50	1/8-Inch Cap.....	25	250	10
1631	18.00	1/4-Inch Cap.....	25	50	8
1632	11.00	3/8-Inch Cap.....	25	100	14
1633	25.50	1/2-Inch Cap.....	25	50	8
1634	7.50	Pendant Cap.....	25	250	13
1635	7.50	Strain Relief Pendant Cap.....	25	100	12

For 3/8-Inch Pipe

2236	\$57.00	Pendant Link Fixture Cap.....	10	100	18
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For .375 to .500-Inch Cord

2502	\$19.50	Pendant Cap, Cord Grip.....	25	100	7
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Hubbell Bakelite Threaded-Catch Sockets

Socket Bodies



No. 3988

No. 3984

No. 3986

Threaded ring is included as part of socket body. Brown bakelite is standard.

Parts of bakelite and brass shell threaded-catch sockets do not interchange.

250 Watts, 250 Volts

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
3984	\$27.00	Key Body.....	10	100	20
3988	37.00	Pull Body.....	10	100	19
3990	39.50	Pull Body, with Ins. Chain.....	10	100	19

660 Watts, 250 Volts

3985	\$43.50	Key Body.....	10	100	22
3986	22.50	Keyless Body.....	10	100	17
3987	27.00	Push Body.....	10	100	17
3989	41.50	Pull Body.....	10	100	21

Socket Caps



Nos. 3980 and 3981

No. 3982

No. 3983

Brown bakelite is standard.

3980	\$7.50	1/8-Inch Cap.....	10	100	5
3981	11.00	3/8-Inch Cap.....	10	100	6
3982	7.50	Pendant Cap.....	10	100	3
3983	19.50	Pendant Cap with Cord Grip...	10	100	7

Hubbell Aluminum Shell Sockets and Shade Holders

One Piece Type

660 Watts, 600 Volts



No. 3135 Socket



No. 3137 Shade Holder

Socket fitted with inside ring for holding porcelain body in shell.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
3135	\$71.00	Socket with 3/8-Inch Nipple.....	10	50	16
3136	71.00	Socket with 1/2-Inch Nipple.....	10	50	16
3137	30.00	2 1/4-Inch Shadeholder.....	10	50	3
3134	45.00	3 1/4-Inch Shadeholder.....	10	50	4

*For use with Nos. 3135 and 3136 sockets only.

Hubbell Socket Reducers and Bushings



No. 5380

No. 421

No. 392

No. 492

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
5380	\$1.50	1/8-Inch Socket Bushing, Comp.	*	1000	!
5381	3.00	3/8-Inch Socket Bushing, Comp.	*	1000	!
421	32.00	Mogul to Medium Reducer....	10	100	!
392	15.00	Medium to Candelabra Reducer	25	100	!
492	17.00	Medium to Intermediate Reducer	25	100	!

*Packed in bulk.

Hubbell Porcelain Socket Bodies, Caps and Bases

Standard finishes of exposed brass parts are brush brass and wash nickel. Brush brass furnished unless otherwise specified.

Bodies



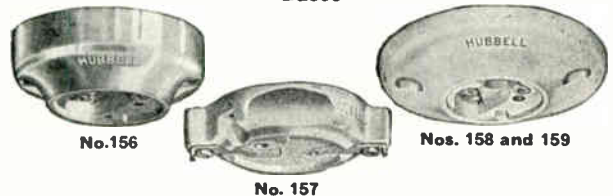
No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
160	\$71.00	Pull Body, 250 W., 250 V.....	10	100	31
1606	121.50	Pull Body, 660 W., 250 V.....	10	100	30
161	31.50	Key Body, 250 W., 250 V.....	10	100	25
1616	43.50	Key Body, 660 W., 250 V.....	10	100	35
162	28.00	Keyless Body, 660 W., 250 V....	10	100	17
173	43.50	Push Body, 2-Inch Button, 660 W., 250 V.....	10	100	32

Caps



150	\$12.00	Pendant.....	10	100	11
151	24.00	1/8-Inch Brass.....	10	100	13
153	29.00	3/8-Inch Brass.....	10	100	14
191	40.50	1/2-Inch Brass.....	10	100	20
175	90.50	3/8-Inch Angle Brass.....	10	100	19
198	30.00	Pendant Cord Grip.....	10	100	18

Bases



Screw holes spaced on centers: No. 156, 1 1/8 and 2 1/4 inches; No. 157, 1 13/16 inches; No. 158, 2 3/4 inches; and No. 159, 3 1/2 inches. O.D.: No. 156, 2 3/4 inches; No. 157, 2 7/8 x 2 1/2 inches; No. 158, 3 1/16 inches; and No. 159, 4 1/16 inches.

156	\$22.50	Concealed Type.....	10	100	36
157	21.00	Cleat Type.....	10	100	21
158	36.00	Ceiling Base, for 3 1/4-Inch Boxes	10	50	26
159	48.00	Ceiling Base, for 4-Inch Boxes.	5	50	36

Hubbell Porcelain Cleat Receptacles

660 Watts, 250 Volts

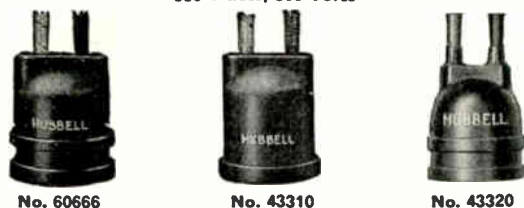


Holes for screws spaced on centers: No. 50715, 1 13/16 inches; Nos. 9402 and 4013, 2 3/8 inches. Base size: No. 50715, 2 1/2 x 2 3/8 inches; Nos. 9402 and 4013, 2 1/2 x 2 3/8 inches.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
50715	\$9.00	With Binding Screws.....	10	100	12
9402	29.00	With Binding Screws.....	10	100	38
4013	37.50	With Shade Holder Groove....	10	100	38

Hubbell Weatherproof Sockets

660 Watts, 600 Volts



Furnished with 6-inch No. 14 B. & S. stranded rubber-covered wire.

With Shade Holder Groove

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
60666	\$20.50	Composition.....	10	100	25
60666-B	20.50	Bakelite.....	10	100	23

Without Shade Holder Groove

43310	\$19.50	Composition.....	10	100	22
43310-B	19.50	Bakelite.....	10	100	20

With Moulded-In Leads

43320	\$19.50	Mica Compound.....	10	100	23
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No. 311 Hubbell Rubber Weatherproof Sockets

660 Watts, 600 Volts



Made of high-grade, soft rubber with 6-inch leads No. 14 rubber-covered wire. With spring center contact.

Carton, 10. Standard package, 100. Weight per standard package, 15 pounds.

No. 311..... per 100 \$22.00

No. 7454 Hubbell Pin Type Bakelite Weatherproof Sockets

660 Watts, 250 Volts



Carton 10. Standard package, 100.

Weight per standard package, 13 pounds.

No. 7454..... per 100 \$20.00

Hubbell Weatherproof Sockets

With Cast Aluminum Shell

660 Watts, 250 Volts



Ideal for inexpensive industrial installations. The 2 1/4-inch shade holder fits either shallow bowl or standard dome type reflectors.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
4006	\$70.00	1/2-Inch Threaded Bushing.....	10	50	25
4007	70.00	3/8-Inch Threaded Bushing.....	10	50	22
4016	80.00	1/2-Inch 90° Angle for 2 1/4-Inch Shade.....	10	100	65

Hubbell Keyless Pony Wall Sockets

660 Watts, 250 Volts



No. 50717



No. 50718

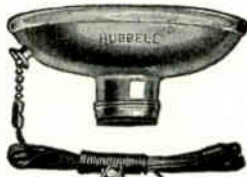
Supporting screw holes, 1 $\frac{1}{16}$ inches. Diameter, 2 inches. Height, 2 inches. Standard finish is brush brass.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
50717	\$40.50	Solid Base	10	100	22
50718	40.50	Slotted Base	10	100	22

Hubbell Brass Covered Ceiling Receptacles



No. 4100



No. 4104

Screw spacings: No. 4102, 2 $\frac{3}{4}$ inches; No. 4100 and No. 4104, 2 $\frac{3}{4}$ inches and 3 $\frac{1}{2}$ inches.

No. 4104 equipped with short chain, 4 feet of black cord and composition ball.

Standard finish, brush brass.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
4100	\$90.50	Keyless, for 3 $\frac{1}{4}$ and 4-Inch Boxes.	1	50	44
4102	74.50	Keyless, for 3 $\frac{1}{4}$ -Inch Boxes	1	50	30
4104	\$196.50	Pull, for 3 $\frac{1}{4}$ and 4-Inch Boxes	1	50	59

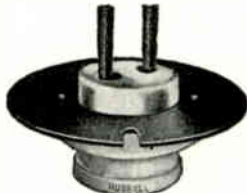
Hubbell Outlet Box Receptacles

With Metal Cover and No. 14 Wires

660 Watts, 600 Volts



No. 456



No. 458

Cadmium finish steel covers. Height, 1 $\frac{1}{16}$ inches above cover.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
456	\$15.00	Screw Terminals	10	100	45
458	18.00	6-Inch Leads	10	100	55
457	\$17.00	Screw Terminals	5	100	60
459	19.00	6-Inch Leads	5	100	66

Hubbell Porcelain Pull Receptacles

250 Watts, 250 Volts



No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
997	\$24.00	7-Inch Chain and Insulator	10	100	35
998	20.00	Short Chain and 4-Foot Cord	10	100	35
999	37.50	3-Foot Chain	10	100	36

Extra chain eyelets when sold separately add \$4.00 per 100.

Extra length cord, \$2.00 per 100 feet. For insulators, add \$8.00 per 100.

Hubbell Porcelain Pull Receptacles

One-Piece Construction

For 3 $\frac{1}{4}$ and 4-Inch Boxes

With Shade Holder Groove

250 Watts, 250 Volts



No. 40262



No. 40462

Designed for easier wiring without removing the interior. Rigid center-post holds mechanism firmly. Quick to install, few parts, requiring a minimum of handling. Large binding screws for No. 10 wire.

The 3 $\frac{1}{4}$ -inch size: diameter of base, 3 $\frac{1}{16}$ inches; height overall, 2 $\frac{1}{8}$ inches. Holes for supporting screws are spaced 2 $\frac{3}{4}$ inches on center.

The 4-inch size: diameter of base, 4 $\frac{1}{16}$ inches; height overall, 2 $\frac{1}{8}$ inches. Holes for supporting screws are spaced 2 $\frac{3}{4}$ and 3 $\frac{1}{2}$ inches on center.

No. 40462, the 4-inch size, is equipped with an extra set of mounting holes designed to fit a 3 $\frac{1}{4}$ -inch box if it should be necessary to cover up a carelessly cut hole in the plaster around the 3 $\frac{1}{4}$ -inch box.

No.	Per 100	Description	Size Box Inches	Car-ton	Std. Pkg.	Wt. Lb.
4026	\$32.00	6 $\frac{1}{2}$ -Inch Chain and Insulator	3 $\frac{1}{4}$	10	50	40
4046	47.00	6 $\frac{1}{2}$ -Inch Chain and Insulator	3 $\frac{1}{4}$, 4	10	50	60
40261	30.00	6 $\frac{1}{2}$ -Inch Chain Only	3 $\frac{1}{4}$	10	50	40
40461	42.50	6 $\frac{1}{2}$ -Inch Chain Only	3 $\frac{1}{4}$, 4	10	50	60
40262	24.00	Short Chain, 4-Foot Cord	3 $\frac{1}{4}$	10	50	40
40462	34.20	Short Chain, 4-Foot Cord	3 $\frac{1}{4}$, 4	10	50	56

Hubbell Porcelain Receptacles

With Flush Back

With Shadeholder Groove

Pull: 250 Watts, 250 Volts

Keyless: 660 Watts, 250 Volts



No. 829

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
829	\$140.00	Pull, Short Chain and Cord	10	24	40
830	140.00	Pull, Short Insulated Chain	10	24	41
860	78.00	Keyless	10	24	36

For 3 $\frac{1}{4}$ and 4-Inch Outlet Boxes

With Shadeholder Groove

Keyless—660 Watts, 250 Volts



Fitted with drain holes to permit drainage of moisture. Height, 1 $\frac{1}{16}$ inches. Supporting screws spaced on centers: No. 3922, 2 $\frac{3}{4}$ inches; No. 3923, 3 $\frac{1}{2}$ inches.

No.	Per 100	Size Inches	O.D. Inches	Car-ton	Std. Pkg.	Wt. Lb.
3922	\$19.00	3 $\frac{1}{4}$	3 $\frac{1}{16}$	10	100	55
3923	24.00	4	4 $\frac{1}{16}$	5	50	40

Hubbell Porcelain Sign Receptacles

With Glazed Rings
660 Watts, 250 Volts

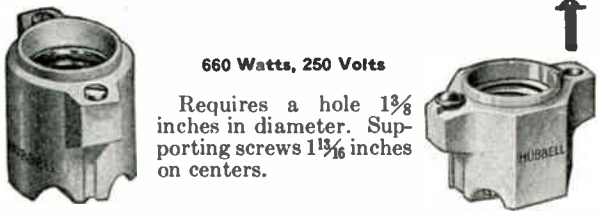


No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
*4003	\$23.50	5/16-Inch Ring.....	10	100	28
Shallow Type					
59108	\$17.50	5/16-Inch Ring, Binding Screws..	10	100	22
4109	26.50	5/16-Inch Ring, Covered Terminals.....	10	100	27

Deep Type					
61988	\$17.50	3/8-Inch Ring, Binding Screws..	10	100	23

*With longer leads \$4.50 additional per 100 feet, per conductor.
Separate fluted rings, \$9.50 per 100. Separate grooved rings, \$12.00 per 100. Standard package, 100.

Hubbell One-Piece Sign Receptacles



660 Watts, 250 Volts

Requires a hole 1 3/8 inches in diameter. Supporting screws 1 13/16 inches on centers.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
4063	\$16.00	With Binding Screws.....	10	100	22
4064	16.00	With Loop Terminals.....	10	100	22
4067	16.00	With Spring Stud and Binding Screws.....	25	250	59
4068	16.00	With Spring Stud and Loop Terminals.....	25	250	59

Hubbell Porcelain Mogul Sockets

1500 Watts, 600 Volts
Keyless

With 3/8-Inch Aluminum Cap

No.	Per 100	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
3390	\$81.50	2	50	62
With 1/2-Inch Aluminum Cap				
3391	\$81.50	2	50	65
With 3/8-Inch Aluminum Cap				
3468	\$79.00	2	50	34
With 1/2-Inch Aluminum Cap				
3469	\$79.00	2	50	35

No. 3464 Hubbell Mogul Cleat Receptacles

1500 Watts, 600 Volts

Screws spaced 2 7/8 inches. Diameter of base, 3 1/2 inches.

Carton, 2. Standard package, 50. Weight per std. pkg., 41 lb.
No. 3464.....per 100 \$81.00



Hubbell Acorn Wiring Devices

These Acorn Devices are designed and offered to meet competition, and priced accordingly. They should not be confused with the regular line of Hubbell Wiring Devices listed elsewhere.

Standard Size Brass Shell Sockets



Caps or bodies are not sold separately.

Pull—250 Watts, 250 Volts					
No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
2618	\$18.00	With 1/8-Inch Cap.....	25	250	52
2632	22.00	With 3/8-Inch Cap.....	25	250	50
2620	18.00	With Pendant Cap.....	25	250	50
Key—250 Watts, 250 Volts					
2664	\$14.50	With 1/8-Inch Cap.....	25	250	56
2634	18.50	With 3/8-Inch Cap.....	25	250	54
2666	14.50	With Pendant Cap.....	25	250	50
Keyless—660 Watts, 250 Volts					
2667	\$12.50	With 1/8-Inch Cap.....	25	250	46
2635	16.50	With 3/8-Inch Cap.....	25	250	45
2669	12.50	With Pendant Cap.....	25	250	41

Electrolier Size Brass Shell Sockets



Caps or bodies are not sold separately.

Push Thru—250 Watts, 250 Volts					
2950	\$15.30	With 1/8-Inch Cap.....	25	250	39
2920	15.30	With Pendant Cap.....	25	250	35
2999	16.20	With Side Outlet Cap.....	25	250	41
Keyless Short Shell—660 Watts, 250 Volts					
2899	\$11.70	With 1/8-Inch Cap.....	25	250	32
2820	11.70	With Pendant Cap.....	25	250	42

Weatherproof Sockets
660 Watts, 600 Volts



Furnished with 6 inches of moulded-in No. 14 B. & S. stranded rubber-covered wire.

With Shade Holder Groove					
310	\$14.50	Brown Bakelite.....	10	100	22
Without Shade Holder Groove					
309	\$10.50	Brown Bakelite.....	10	100	22

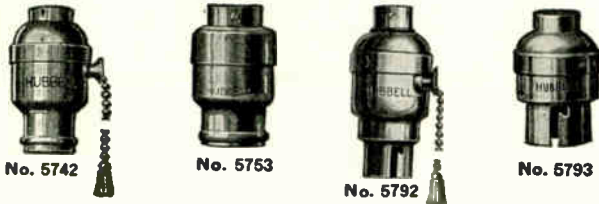
Unglazed Porcelain Sign Receptacles
660 Watts, 250 Volts



No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
4112	\$9.00	Exposed Terminals.....	25	250	51
4113	15.00	Covered Terminals.....	25	250	64
4114	16.00	With 9-Inch Leads, No. 14 Wire.	25	250	73
4118	9.00	With 9-Inch Leads, No. 18 Wire.	25	250	71

Hubbell Candelabra Sockets

75 Watts, 125 Volts



Standard finish is brush brass.

Quick-Catch Shell Fastening

No.	Per 100	Description	Carton	Std. Pkg.	Wt. Lb.
5742	\$83.00	Pull, 1/8-Inch Cap.	10	50	6

Screw Thread Shell Fastening

5753	\$45.00	Keyless, 1/8-Inch Cap.	25	100	9
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Bayonet Base—Lock Shell Fastening

5792	\$136.00	Pull, 1/8-Inch Cap.	10	50	7
5793	37.50	Keyless, 1/8-Inch Cap.	10	50	5



No. 3394 Hubbell Keyless Candle Sockets

With Hickey

660 Watts, 250 Volts

Bushing, 1/8 inch. Length, 2 3/16 inches. Carton, 25. Standard package, 250. Weight per standard package, 28 pounds.

No. 3394.....per 100 \$8.50

Hubbell Adjustable Candle Sockets



Pull—Complete

660 Watts, 250 Volts

No.	Per 100	Length, In. Min.	Length, In. Max.	Carton	Std. Pkg.	Wt. Lb.
3965	\$30.50	3 3/4	4 5/8	10	100	20
3966	30.50	4 3/4	5 5/8	10	100	20
3967	30.50	5 3/4	6 5/8	10	100	23

Keyless—Complete

660 Watts, 250 Volts

3969	\$12.00	3 3/4	4 5/8	25	250	35
3970	12.00	4 3/4	5 5/8	25	250	36
3971	12.00	5 3/4	6 5/8	25	250	40



No. 3965 No. 3969

Hubbell Adjustable Angle Adapter Sockets

660 Watts, 250 Volts



No. 3597

For use with New Projector and Reflector Lamps.

Carton, 10. Standard package, 100.

No. 3598

No.	Per 100	Description	Carton	Std. Pkg.	Wt. Lb.
3596	\$100.00	Adjustable Angle Adapter	10	100	35
3597	50.00	Angle Adapter Socket	10	100	19
3598	60.00	Socket on 3 1/4-Inch Galv. Cover	10	100	42
3599	65.00	Socket on 4-Inch Galv. Cover	10	100	54

Hubbell Lumiline Lampholders

The unique applications of Lumiline Lamps by means of Lumiline Receptacles and Caps are now many and varied, especially in the indirect cove, or trough lighting fields.

Ideally suited for built-in or built-on illumination where space limitation is a factor; showcases, mirrors, scales, signs, display windows, railroad cars, buses; and in all lighting where a tubular source of light is required.

Bakelite Receptacles

660 Watts, 250 Volts



No.	Per 100	Description	Carton	Std. Pkg.	Wt. Lb.
2910	\$17.00	Side Wired, Black	50	200	8
2911	19.00	Side Wired, White	50	200	8
2914	17.00	Back Wired, Black	50	200	6
2915	19.00	Back Wired, White	50	200	6
2916	26.00	Twin, Back Wired, Black	50	200	7
2917	28.00	Twin, Back Wired, White	50	200	7
2930	17.00	Back Wired, Single Screw Mounting, Black	50	200	8
2931	19.00	Back Wired, Single Screw Mounting, White	50	200	8

Bakelite Caps



No. 2912

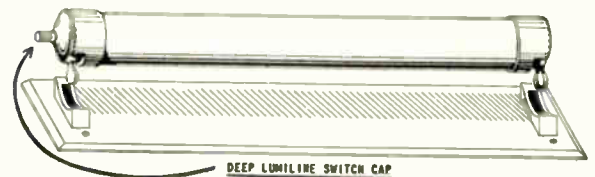


No. 2932

No.	Per 100	Description	Carton	Std. Pkg.	Wt. Lb.
2912	\$9.00	Black	50	200	2
2913	10.00	White	50	200	2
2932	11.00	Deep Type, Black	50	200	5
2933	12.00	Deep Type, White	50	200	5

Deep Lumiline Switch Caps

For Individual Control of Lumiline Lamps
10 Amperes, 250 Volts; 15 Amperes, 125 Volts



DEEP LUMILINE SWITCH CAP



No. 2934

No.	Per 100	Description	Carton	Std. Pkg.	Wt. Lb.
2934	\$22.00	Black Enclosed Cap and Switch	50	200	5
2935	23.00	White Enclosed Cap and Switch	50	200	5

Hubbell Fluorescent Lamp Starters and Sockets

660 Watts, 250 Volts



No. FS-2 Starter No. FS-4 Starter

No. 2946



No. 2947



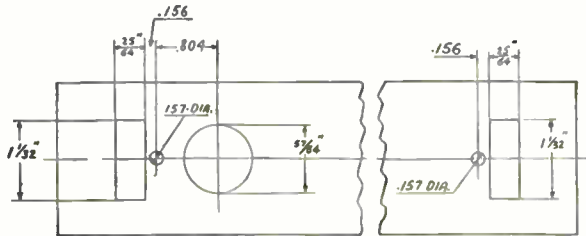
No. 2948

A new development makes the essential starting switch and condenser of a fluorescent lamp auxiliary replaceable. Heretofore, the switch and condenser, assembled with a choke coil, comprised a complete auxiliary unit.

Now, the switch and condenser are mounted in a small aluminum container fitted with contacts. This unit, designated as a starter, fits into the socket of the lampholders. When mounted, the starter projects through a reflector or channel surface immediately below the lamp.

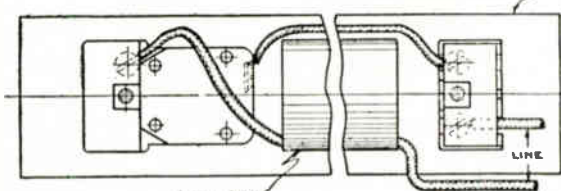
The starter is inserted and locked in contact by a slight turn in a clockwise direction. Reversing the procedure removes the starter.

Auxiliaries are required.



Suggested Mounting Dimensions

BOTTOM VIEW SHOWING WIRING



Wiring Diagram Starters

No.	Per 100	Description	Color	Pkg. Car-ton	Std. Pkg.	Wt. Lb.
FS-2	\$50.00	For 15 or 20-Watt Lamps.	Aluminum	10	100	4
FS-4	50.00	For 30 or 40-Watt Lamps.	Aluminum	10	100	4

Lampholders and Starter Sockets

2944	\$36.00	Straight Push Contacting	Black	10	100	10
2945	38.00	Straight Push Contacting	*White	10	100	10
2942	36.00	Twist-Turn Contacting	Black	10	100	10
2943	38.00	Twist-Turn Contacting	*White	10	100	10

Starter Sockets

2946	\$16.00		Black	10	100	6
2947	16.00	For Separate Mounting		10	100	5
2948	1.00	Spacer Sleeves for No. 2947		100	1000	5

*Only the lampholder is white. Starter socket is black.

Hubbell Fluorescent Lampholders

Nos. 2940 and 2936 fluorescent lampholders are designed for 1 and 1½-inch fluorescent lamps, and may be used for either flush or surface mounting. Wiring is protected with insulation cover plate. Lampholders are held to reflector or wiring channel with one screw and nut. Wiring grooves take conductors up to size 14, solid wire. Casing of lampholder is of molded black or white bakelite.

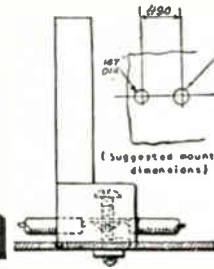
No. 2938 fluorescent lampholder is designed for use exclusively with a 1-inch fluorescent lamp. Particularly suitable for narrow channel wiring work, show case lighting and side-wall fixtures. Built for flush mounting, and wiring is protected with sheet insulation cover plate. One screw mounting provides easy and rapid assembly. Available in black or white bakelite.

Straight Push Contacting

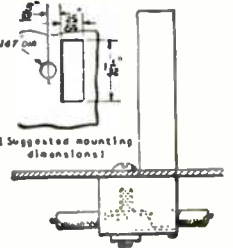
Flush or Surface Mounting
660 Watts, 250 Volts



No. 2940



No. 2940, Surface Mounted



No. 2940, Flush Mounted

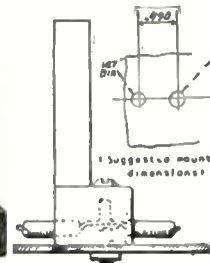
No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
2940	\$20.00	Black	10	100	6
2941	22.00	White	10	100	6

Twist Turn Contacting

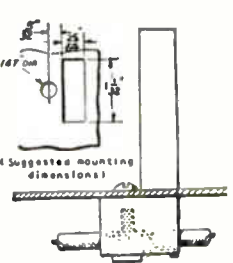
Flush or Surface Mounting
660 Watts, 250 Volts



No. 2936



No. 2936, Surface Mounted



No. 2936, Flush Mounted

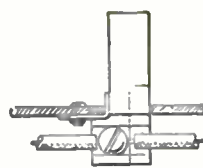
2936	\$20.00	Black	10	100	6
2937	22.00	White	10	100	6

Flush Mounting For Narrow Channel Wiring

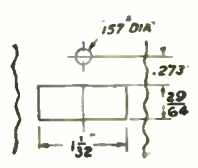
660 Watts, 250 Volts



No. 2938



No. 2938, Mounting Method



No. 2938, Mounting Dimensions

2938	\$20.00	Black	10	100	6
2939	22.00	White	10	100	6

H & H Interchangeable Socket Bodies

250 Volts



No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
50	\$17.50	Key, 250 Watts	25	250	42
53	52.00	Key, 660 Watts	25	250	42
14	17.50	Turn Knob, 250 Watts	25	250	42
51	14.00	Keyless, 660 Watts	25	250	36
52	23.50	Pull, 250 Watts	25	250	32
62	27.50	Pull, 660 Watts	25	250	32
12	17.50	Push, 250 Watts	25	250	38
60	19.00	Push, 660 Watts	25	250	38

H & H Electrolier Socket Bodies

250 Volts



No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
30	\$17.50	Key, 250 Watts	25	250	34
15	17.50	Turn Knob, 250 Watts	25	250	40
16	21.50	Turn Knob, Removable, 250 Watts	25	250	42
33	12.50	Keyless, Short Shell, 660 Watts	25	250	23
31	14.00	Keyless, Long Shell, 660 Watts	25	250	28
32	23.50	Pull, 250 Watts	25	250	32
34	23.00	Push, 660 Watts	25	250	31
35	17.50	Push, 250 Watts	25	250	31
19	19.00	Tumbler, 660 Watts	25	250	32

H & H Interchangeable Socket Caps



1/8-Inch Size

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
A	\$8.00	Female Thread	25	250	12
AM	15.00	Male Thread	5	25	1
E	35.00	90° Angle	25	50	3
AP	9.00	Side Outlet with Bushing	25	100	5

3/8-Inch Size

K	\$12.00	Female Thread	25	100	6
M	\$8.00	1 1/2-Inch Cord Hole	25	250	9

Pendent

H & H Electrolier Socket Caps



No. EA

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
EA	\$8.00	1/8-Inch	25	250	11
EAP	9.00	1/8-Inch, Side Outlet	25	50	3

H & H Electrolier Assembled Sockets

With 1/8-Inch Cap

250 Volts



No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
5862	\$20.50	Keyless, Short Shell, 660 Watts	25	250	31
5861	31.50	Pull, 250 Watts	25	250	42
5863	31.00	Push, 660 Watts	25	250	41

H & H Porcelain Interchangeable Socket Bases



No.	Per 100	Description	Screw Spacings Inches	Base Dim. or Diam. Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
W	\$37.50	Cleat	2 5/32	2 7/8 x 3 1/8	10	100	33
NA	29.00	Small, Slotted	1 3/16	2 1/16	10	100	17
N	29.00	Small, Concealed	1 3/16	2 1/16	10	100	18

H & H Standard Assembled Sockets

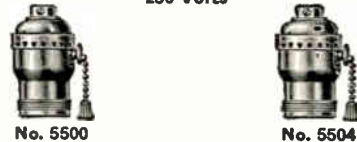
250 Volts



No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
59480	\$25.50	Key, 1/8-Inch Cap, 250 Watts	25	250	53
59486	25.50	Key, Pendent, 250 Watts	25	250	53
59482	22.00	Keyless, 1/8-Inch Cap, 660 Watts	25	250	45
5400	31.50	Pull, 1/8-Inch Cap, 250 Watts	25	250	43
5866	27.00	Push, 1/8-Inch Cap, 660 Watts	25	250	49

H & H 5500 Line Sockets

250 Volts



Standard finish is brush brass. Nickel, gun metal, chromium, electro nickel and bright nickel are available.

Bodies and caps are not sold separately. Price includes caps.

Pull, 250 Watts

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
5500	\$18.00	1/8-Inch	25	250	40
5573	21.00	1/4-Inch	25	250	46
5570	22.00	3/8-Inch	25	250	42
5501	18.00	Pendent	25	250	40
5504	18.90	Side Outlet, 1/8-Inch	25	250	42
*5502	16.00	Flat	25	250	38
5503	20.00	Bracket	25	250	46

Pull, 660 Watts

5510	\$22.00	1/8-Inch	25	250	42
5574	25.00	1/4-Inch	25	250	42
5575	26.00	3/8-Inch	25	250	42
5511	22.00	Pendent	25	250	40
5514	22.90	Side Outlet	25	250	42
*5512	20.00	Flat	25	250	38
5513	24.00	Bracket	25	250	46

*Bright dipped.

H & H 5500 Line Sockets

Key

250 Watts, 250 Volts

Standard finish is brush brass. Nickel, gun metal, chromium, electro nickel and bright nickel are available.

Bodies and caps are not sold separately. Price includes caps.



No. 5520



No. 5523

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
5520	\$14.50	1/8-Inch	25	250	51
5576	17.50	1/4-Inch	25	250	51
5571	18.50	3/8-Inch	25	250	49
5521	14.50	Pendent	25	250	48
5524	15.40	Side Outlet	25	250	51
5523	16.50	Bracket	25	250	55

H & H Electrolier 5500 Line Sockets

Pull

250 Watts, 250 Volts

Standard finish is brush brass. Nickel, gun metal, chromium, electro nickel and bright nickel are available.

Bodies and caps are not sold separately. Price includes caps.



No. 5505

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
5505	\$19.00	1/8-Inch	25	250	42
5506	22.00	1/4-Inch	25	250	42
5507	23.00	3/8-Inch	25	250	42
5508	19.00	Pendent	25	250	41
5509	19.90	Side Outlet	25	250	42
*5519	17.00	Flat	25	250	39
5538	21.00	Bracket	25	250	45

*Bright dipped.

H & H 5500 Line Sockets

Non-Removable Turn Knob, 250 Watts

250 Watts, 250 Volts

Standard finish is brush brass. Nickel, gun metal, chromium, electro nickel and bright nickel are available.

Bodies and caps are not sold separately. Price includes caps.



No. 5525

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
5525	\$14.50	1/8-Inch	25	250	51
5577	17.50	1/4-Inch	25	250	51
5578	18.50	3/8-Inch	25	250	51
5526	14.50	Pendent	25	250	48
5528	15.40	Side Outlet	25	250	51
5529	16.50	Bracket	25	250	55

H & H Electrolier 5500 Line Sockets

Key

250 Watts, 250 Volts

Standard finish is brush brass. Nickel, gun metal, chromium, electro nickel and bright nickel are available.

Bodies and caps are not sold separately. Price includes caps.



No. 5545

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
5545	\$14.50	1/8-Inch	25	250	44
5546	17.50	1/4-Inch	25	250	44
5547	18.50	3/8-Inch	25	250	44
5548	14.50	Pendent	25	250	43
5549	15.40	Side Outlet	25	250	43
5537	16.50	Bracket	25	250	47

H & H 5500 Line Sockets

Keyless

660 Watts, 250 Volts

Standard finish is brush brass. Nickel, gun metal, chromium, electro nickel and bright nickel are available.

Bodies and caps are not sold separately. Price includes caps.



No. 5540



No. 5542

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
5540	\$12.50	1/8-Inch	25	250	46
5579	15.50	1/4-Inch	25	250	46
5572	16.50	3/8-Inch	25	250	46
5541	12.50	Pendent	25	250	43
5544	13.40	Side Outlet	25	250	46
*5542	10.60	Flat	25	250	42
5543	14.50	Bracket	25	250	50

*Bright dipped.

H & H Electrolier 5500 Line Sockets

Tumbler

660 Watts, 250 Volts

Standard finish is brush brass. Nickel, gun metal, chromium, electro nickel and bright nickel are available.

Bodies and caps are not sold separately. Price includes caps.



No. 5555

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
5555	\$15.30	1/8-Inch	25	250	43
5516	18.30	1/4-Inch	25	250	43
5556	19.30	3/8-Inch	25	250	43
5517	15.30	Pendent	25	250	43
5558	16.20	Side Outlet, 1/8-Inch	25	250	43
5557	20.20	Side Outlet, 3/8-Inch	25	250	43
5559	17.30	Bracket	25	250	46

H & H 5500 Line Sockets

Push

250 Volts

Standard finish is brush brass. Nickel, gun metal, chromium, electro nickel and bright nickel are available.

Bodies and caps are not sold separately. Price includes caps.



No. 5535

250 Watts		660 Watts		Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
No.	Per 100	No.	Per 100				
5535	\$15.30	5530	\$16.30	1/8-Inch	25	250	48
5580	18.30	5584	19.30	1/4-Inch	25	250	48
5581	19.30	5585	20.30	3/8-Inch	25	250	48
5536	15.30	5531	16.30	Pendent	25	250	45
5582	16.20	*5534	17.20	Side Outlet	25	250	41
5583	17.30	5533	18.30	Bracket	25	250	52

*1/8-Inch.

H & H Electrolier 5500 Line Sockets

250 Watts, 250 Volts

Standard finish is brush brass. Nickel, gun metal, chromium, electro nickel and bright nickel are available.

Bodies and caps are not sold separately. Price includes caps.



No. 5567

Non-Removable Turn Knob		Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
No.	Per 100				
5567	\$14.50	1/8-Inch	25	250	44
5568	17.50	1/4-Inch	25	250	44
5569	18.50	3/8-Inch	25	250	44
5595	14.50	Pendent	25	250	43
5596	15.40	Side Outlet	25	250	44
5597	16.50	Bracket	25	250	47

Removable Turn Knob		Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
No.	Per 100				
5598	\$16.00	1/8-Inch	25	250	44
5539	19.00	1/4-Inch	25	250	44
5566	20.00	3/8-Inch	25	250	44

H & H Electrolier 5500 Line Sockets

Push
250 Volts



No. 5590

Standard finish is brush brass. Nickel, gun metal, chromium, electro nickel and bright nickel are available.

Bodies and caps are not sold separately. Price includes caps.



No. 5594

No.	660W No.	Per 100	Description	Car-ton	Std. Pkg.	Std. Lb.	Pkg. Wt. 250W660W
5590	5550	\$15.30	1/8-Inch	25	250	40	41
5586	5589	18.30	1/4-Inch	25	250	40	41
5591	5551	19.30	3/8-Inch	25	250	40	41
5587	5515	15.30	Pendent	25	250	39	40
5594	5554	16.20	Side Outlet, 1/8-Inch	25	250	40	41
5592	5552	20.20	Side Outlet, 3/8-Inch	25	250	40	41
5588	5553	17.30	Bracket	25	250	43	44

H & H Electrolier 5500 Line Sockets

Keyless Short Shell
660 Watts, 250 Volts



No. 5560

Standard finish is brush brass. Nickel, gun metal, chromium, electro nickel and bright nickel are available.

Bodies and caps are not sold separately. Price includes caps.



No. 5562

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Lb.
5560	\$11.70	1/8-Inch	25	250	31
5518	14.70	1/4-Inch	25	250	43
5563	15.70	3/8-Inch	25	250	31
5561	11.70	Pendent	25	250	30
5564	12.60	Side Outlet, 1/8-Inch	25	250	31
5565	16.60	Side Outlet, 3/8-Inch	25	250	31
*5562	9.80	Flat	25	250	28

*Bright dipped.

H & H Threaded Catch Socket Bodies

250 Volts



No. 65



No. 66



No. 67



No. 63

This socket body is fastened to the cap by a threaded ring which may be set very tightly.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
65	\$27.00	Key, 250 Watts	25	250	47
13	43.50	Key, 660 Watts	25	250	47
66	22.50	Keyless, 660 Watts	25	250	40
67	37.00	Pull, 250 Watts	25	250	46
17	41.50	Pull, 660 Watts	25	250	46
18	26.00	Push, 250 Watts	25	250	47
63	27.00	Push, 660 Watts	25	250	47

H & H Threaded Catch Socket Caps



No. TA

This cap is fastened to the socket body by a threaded ring which may be very tightly set. The cap cannot pull away from the body and vibration will not loosen the parts.



No. TK



No. TM



No. TG

No. TG

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
TA	\$7.50	1/8-Inch	25	250	9
TC	11.50	1/8-Inch, Side Outlet, Cord Hole .281-156 Inch (5/32 x 3/32 Inch)	25	100	4
TB	18.00	1/4-Inch	25	50	3
TK	11.00	3/8-Inch	25	100	6
TZ	25.50	1/2-Inch	25	50	3
TM	7.50	Pendent, 1 3/8-Inch Cord Hole	25	250	6
TG	19.50	Cord Grip, 3/8-1/2 Inch, .375-500 Inch	25	100	8
TMG	19.50	Cord Grip, 1/4-3/8 Inch, .250-375 Inch	25	100	8

H & H Interchangeable Porcelain Socket Bodies

250 Volts



No. 40



No. 41



Nos. 42 and 44



No. 45

Wash nickel is the standard finish on chain.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
40	\$31.50	Key, 250 Watts	10	100	29
41	28.00	Keyless, 660 Watts	10	100	18
42	71.00	Pull, 250 W., 7-Inch Insulated Chain	10	100	31
44	121.50	Pull, 660 W., 7-Inch Insulated Chain	10	100	33
45	43.50	Push, 660 Watts, 2-Inch Button	10	100	32

H & H Interchangeable Socket Caps



No. PM



No. PE



No. PA

This cap is brass covered, finished wash nickel, with the exception of pendent which is porcelain.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
PM	\$12.00	Pendent	10	100	11
PE	30.00	Cord Grip Pendent, 1/4 to 1/2-Inch	10	100	18
PA	24.00	1/8-Inch	10	100	14
PK	29.00	3/8-Inch	10	100	15

H & H Interchangeable Porcelain Socket Bases



No. PB



No. PR

No.	Per 100	Description	Base Diam. Inches	Screw Spacing Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
PB	\$18.00	Combination	2 7/16	2	10	100	25
PR	36.00	Flat Back, 3 1/4 Inches	3 1/16	2 3/4	10	50	15

Relyon Snap-Cap Porcelain Assembled Sockets

15 Amperes, 125 Volts;
10 Amperes, 250 Volts



No. 9303



No. 9306

Cap and body snap together easily and securely. Designed for easy wiring to the interior and a quick job of installing. Available only assembled.



No. 9313

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
9303	\$32.00	Pull, Pendent Cap	10	100	40
9304	38.00	Pull, 1/8-Inch Cap	10	100	41
9318	50.00	Pull, 3/8-Inch Cap	10	100	40
9305	24.00	Key, Pendent Cap	10	100	45
9306	30.00	Key, 1/8-Inch Cap	10	100	47
9316	44.00	Key, 3/8-Inch Cap	10	100	45
9313	23.00	Keyless, Pendent Cap	10	100	32
9314	36.00	Keyless, 1/8-Inch Cap	10	100	33
9317	40.00	Keyless, 3/8-Inch Cap	10	100	33

H & H Porcelain Husk Sockets With Body Terminals



No. 1263

Plain Side

660 Watts, 250 Volts



No. 1267

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
1269	\$13.50	Body Only, No Cap.....	10	100	28
1263	20.00	With 1/8-Inch Cap.....	10	100	32
1264	20.00	With 1/4-Inch Cap.....	10	100	29
1265	20.00	With 3/8-Inch Cap.....	10	100	28
1266	23.50	With 1/2-Inch Cap.....	10	100	28
1262	38.50	With 1/2-Hexagonal Cap.....	10	100	28
1267	29.00	With 3/8-Inch Angle Cap.....	10	100	39

H & H Pull Candle Sockets 250 Watts, 250 Volts



No. 5990



No. 4171



No. 5999

Brush brass is the standard finish on chain. Any nickel finish or wash silver furnished without extra charge.

Carton, 10. Standard package, 100.

No.	Fixed Length	Fixed Length, Close Hickey	Adjustable
No. 5990	5990	4171	5999
Per 100	\$28.50	28.50	30.50
Body Length.....inches	2 1/8	2 1/8	2 3/8
Overall Length.....inches	3 3/8	3	3 3/8 to 5 1/2
Package Weight.....pounds	9	9	12



No. 4208

H & H Keyless Candle Sockets

660 Watts, 250 Volts

Body length, 1 5/8 inches.

Carton, 25. Standard package, 250.

No.	Fixed Length	Adjustable
No. 4208	4208	5998
Per 100	\$8.50	12.00
Overall Length.....inches	2 5/8	3 1/8 to 5 3/8
Package Weight.....pounds	18	32



No. 5998

H & H Adjustable Angle Adapters

Adjustment, 180° Vertical, 340° Horizontal

660 Watts, 250 Volts



No. 4364



No. 4365

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
4364	\$50.00	Adjustable Adapter.....	10	100	10
4365	60.00	With 3 1/4-Inch Galv. Cover.....	10	50	18
4366	65.00	With 4-Inch Galv. Cover.....	10	50	20

H & H Aluminum Weatherproof Sockets and Shadeholders

Keyless—Two-Piece Style

660 Watts, 600 Volts



No. 8110



No. 8050



No. 8190

Cap has a permanently fastened porcelain lining with binding screws in the cap. Screw shells have lamp grip and aluminum shell is threaded to take aluminum shadeholders.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
8096	\$71.00	Socket, 3/8-Inch Cap.....	10	50	20
8110	71.00	Socket, 1/2-Inch Cap.....	10	50	20
8050	71.00	Socket, Cord Grip Cap.....	10	50	20
8190	32.00	2 1/4-Inch Shadeholder.....	10	50	4
8570	45.00	3 1/4-Inch Shadeholder.....	10	50	4

H & H Lumiline Lampholders

660 Watts, 250 Volts

These lampholders, designed to fit Lumiline Lamps, are supplied in black or white bakelite, either front or back connected styles. Single Lumiline Sockets fit one lamp and the Twin style supports two lamps in line.

There are two parts to each socket, the receptacle and the cap. The cap snaps over the end of the Lumiline Lamp and the circular contact goes into the receptacle with the contact screws facing inwards so that the flat surface is at the end of the lamp. Another lamp can then be installed very closely with only a small space between.

Receptacles



No. 7979-W



No. 7969



No. 7992

Front Connected Single

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7979	\$17.00	Black.....	50	200	8
7979-W	19.00	White.....	50	200	8
Back Connected					
7969	\$17.00	Single, Black.....	50	200	6
7969-W	19.00	Single, White.....	50	200	6
7992	26.00	Twin, Black.....	50	200	9
7992-W	28.00	Twin, White.....	50	200	9



No. 7980-W

Shallow Type Caps

7980	\$9.00	Black.....	50	200	4
7980-W	10.00	White.....	50	200	4

Deep Type Caps

Switch Rating: 15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 7993



No. 7994

7993	\$11.00	Black.....	50	200	5
7993-W	12.00	White.....	50	200	5
7994	22.00	Black, with Switch.....	50	200	4
7994-W	23.00	White, with Switch.....	50	200	4

H & H Fluorescent Lampholders, Starters and Combinations

The starter switch and condenser are mounted in a small aluminum container fitted with contacts. This development makes the essential starting switch and condenser of a fluorescent lamp auxiliary easily replaceable.

The starter unit, No. FS-2, FS-4 fits into the combination starter socket and lampholder. When mounted, the starter projects through the reflector or channel surface immediately below the lamp.

The starter unit is easily inserted and locked in contact by a short turn in a clockwise direction. If replacements are necessary reversing the process removes the starter.

A reactor is required when installed.

Starters



No. FS-2



No. 7019



No. 7020

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
FS-2	\$50.00	For 15 or 20 Watt Lamp.....	10	50	1 1/2
FS-4	50.00	For 30 or 40 Watt Lamp.....	10	50	1 1/2

Combination Starter Socket and No. 7013 Lampholder
660 Watts, 250 Volts

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7019	\$42.00	Black.....	10	100	18
7019-W	44.00	*White.....	10	100	18

Combination Starter Socket and No. 7017 Lampholder
660 Watts, 250 Volts

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7020	\$42.00	Black.....	10	100	18
7020-W	44.00	*White.....	10	100	18

Starter Sockets



No. 7018



No. 7021

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7018	\$18.00	For Nos. 7013, 7017.....	10	100	9
7021	18.00	For Flush or Surface Mounting.....	10	100	7
7022	1.00	Spacer for No. 7021.....	100	1000	5

Lampholders

660 Watts, 250 Volts



No. 7013



No. 7014



No. 7016



No. 7017

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7013	\$24.00	Black, Flush or Surface.....	10	100	9
7013-W	26.00	White, Flush or Surface.....	10	100	9
7014	24.00	Black, Flush.....	10	100	6
7014-W	26.00	White, Flush.....	10	100	6
7016	24.00	Black, Show Case.....	10	100	6
7017	24.00	Black, Flush or Surface.....	10	100	9
7017-W	26.00	White, Flush or Surface.....	10	100	9

*Starter socket is black.

H & H Mogul Base Devices
2-Piece Interchangeable Porcelain Bodies
1500 Watts, 600 Volts



No. 211

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
211	\$50.00	Height, 3 3/16 In.....	5	50	47
212	50.00	Height, 3 1/2 In.....	5	50	58

One-Piece Interchangeable Porcelain Bodies
1500 Watts, 600 Volts



No. 213



No. 214



No. 215

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
213	\$47.00	With Binding Posts.....	5	50	38
214	75.50	*With Wire Leads.....	5	50	44
215	59.50	With Side Terminals.....	5	50	32

*15 inches No. 12 R.C. wire.

Caps



No. PMA

For above mogul socket bodies. Flat steel, brass finish.

PMA	PMC	Description	Car-ton	Std. Pkg.	Wt. Lb.
\$18.50	18.50	3/8 Inch.....	10	50	8
		1/2 Inch.....	10	50	7

3-Wire Porcelain Sockets
1500 Watts, 250 Volts



No. 7946



No. 7947

For 2-element lamp.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7946	\$68.00	Porcelain Body.....	5	50	31
7947	74.50	Socket with 3/8-In. Flat Steel Cap.....	5	50	35
7948	74.50	Socket with 1/2-In. Flat Steel Cap.....	5	50	35

One Piece Porcelain Assembled Sockets
1500 Watts, 600 Volts



No. 7852

Porcelain is tapered towards the cast malleable iron cap to fit commercial units and reflectors.
Base diameter, 2 3/16 inches. Height assembled, 3 1/4 inches.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7852	\$47.00	With 3/8-Inch Cap.....	10	50	40
7853	50.50	With 1/2-Inch Cap.....	10	50	40
7851	45.00	Body Only.....	10	50	29

No. 5920 Porcelain Receptacles
1500 Watts, 600 Volts



Cleat type. Screw spacing, 2 1/2 inches.
Carton, 5. Standard package, 50. Weight per standard package, 42 pounds.
No. 5920.....per 100 \$81.00

No. 7917 Mogul to Mogul Extension Pieces
1500 Watts, 600 Volts



Lamps in reflectors designed for 750-1500 watts may be changed for smaller lamps by using this extension, which extends the light center of the smaller lamp.
Carton, 10. Standard package, 50. Weight per standard package, 40 pounds.
No. 7917.....per 100 \$117.00

H & H Weatherproof Sockets With One-Piece Die-Cast Hood 660 Watts, 250 Volts



No. 1300



No. 1308

For all locations exposed to weather. Hood is die-cast of zinc-base metal which stops corrosion in all weather. Standard finish, aluminum. Green finish at no extra charge.

With 2 1/4-Inch Shadeholder

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
1300	\$70.00	1/2-Inch Hex. Cap.	10	100	55
1305	70.00	3/8-Inch Hex. Cap.	10	100	55

Without Shadeholder

1308	56.00	1/2-Inch Hex. Cap.	10	100	51
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With 6-Inch Wire Leads

660 Watts, 600 Volts



No. 9366



No. 43310-B



No. 43319



No. 1500

No. 14 B. & S. stranded R. C. wire is standard.

399	\$15.00	Porcelain, Plain	10	100	26
9366	21.50	Porcelain, Shadeholder Gr.	10	100	26
43310	19.50	Composition, Shadeholder Gr.	10	100	25
43310-B	13.50	Bakelite, Shadeholder Groove	10	100	13
43319	10.50	Bakelite, Without Groove	10	100	13
60666	20.50	Composition, Shadeholder Gr.	10	100	25
1500	22.00	All Rubber	10	100	19



No. 43308

H & H Pin Type Weatherproof Bakelite Sockets

With Suspension Hook

Medium—660 Watts, 250 Volts
Intermediate—75 Watts, 250 Volts
Candelabra—75 Watts, 125 Volts

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
43308	\$20.00	Medium, for No. 12, 14 Wire	10	100	12
43318	20.00	Medium, for No. 10, 12 Wire	10	100	12
44408	10.00	Intermediate, for No. 16, 18, 20 Wire	10	100	4
44418	16.00	Intermediate, for No. 14 Wire	10	100	4
33308	10.00	Candelabra, for No. 16, 18, 20 Wire	10	100	4

H & H Reducers or Adapters

For Sockets and Receptacles



No. 4011



No. 649

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
4011	\$32.00	Mogul to Medium	10	100	18
649	17.00	Medium to Intermediate	25	100	4
392	15.00	Medium to Candelabra	25	100	5
391	15.00	Candelabra to Miniature	20	100	1

H & H Surface Cleat Receptacles

660 Watts, 250 Volts



No. 50715



No. 50715-C



No. 50721



No. 9171



No. 28795



No. 9402



No. 9403



No. 59275

These receptacles are all porcelain, except Nos. 50715-C and 50721 which are bakelite.

No.	Per 100	Base Dimensions, Inches	Screw Spacings Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
50715	\$9.00	Porcelain, 2 1/16 x 2 1/16"	1 15/16	10	100	24
50715-C	9.00	Bakelite, 2 1/16 x 2 1/16"	1 15/16	10	100	12
50721	14.50	Bakelite, Covered Terminals, 1 7/8 x 1 7/8"	1 3/4	10	100	12
9171	14.00	Plain, 1 15/16" Diameter	1 Screw	10	100	23
28795	30.00	Plain, 2 15/16" Diameter	1 7/8	10	100	35
9402	29.00	Plain, 2 15/16 x 2 3/32"	2 3/8	10	100	41
9001	37.50	Groove, 2 15/16 x 2 3/32"	2 3/8	10	100	40
9403	45.00	Brass Shell, 2 15/16 x 2 3/32"	2 3/8	10	100	34
*59275	38.50	2 15/16" Diameter	2	10	100	43

*Wires will run 1 inch from the surface.

H & H Porcelain Sign and Fixture Receptacles

660 Watts, 250 Volts



No. 9154



No. 5413



No. 3952

Size hole required, 1 3/8 inches. Screw hole spacings, 1 15/16 inches.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
9154	\$16.00	Screw Terminals	10	250	65
5413	16.00	One Spring Stud, Octagon Base	10	250	65
7046	16.00	Clip Terminals	10	250	56
3951	16.00	Screw Terminals, Spring Stud	10	250	56
3952	16.00	Clip Terminals, Spring, Stud	10	250	60

H & H Porcelain Ring Receptacles

Competitive Type

Shallow, Keyless—660 Watts



No. 7718



No. 7720



No. 7721



No. 7722

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7718	\$9.00	Screw Terminals, 1 3/16" Back	25	250	54
7720	15.00	Covered Terminals, 1 1/8" Back	25	250	64
7721	16.00	9" No. 14 Wire, 3/4" Back	25	250	64
7722	9.00	9" No. 18 C.F. Wire, 3/4" Back	25	250	57

No. 7799 H & H Rubber Handle Sockets

Turn Knob Type
250 Watts, 250 Volts



No. 7799

Carton, 10. Standard package, 20. Weight per standard package, 6 pounds.

per 100 \$40.00

H & H Outlet Box Porcelain Pull Receptacles

One Piece, with Shadeholder Groove

Lampholder, 250 Watts, 250 Volts



No. 4341

Nickel is the standard finish on chain. Special finishes will be supplied on special order.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
4340	\$30.00	7" Chain, 3/4" Box	10	50	40
4341	24.00	Chain and 3' Cord, 3/4" Box	10	50	40
4342	32.00	Chain and Ins. 3/4" Box	10	50	40
4343	42.50	7" Chain, 4" Box	10	50	55
4344	34.20	Chain and 3' Cord, 4" Box	10	50	55
4345	47.00	Chain and Ins. 4" Box	10	50	55

H & H Outlet Box Porcelain Pull Receptacles

Two Piece, with Shadeholder Ring

250 Watts, 250 Volts



No. 7425

Nickel is the standard finish on chain. Special finishes will be supplied on special order.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7430	\$30.00	7" Chain, 3/4" Box	10	50	30
7423	24.00	Chain and 3' Cord, 3/4" Box	10	50	30
7425	32.00	Chain and Ins. 3/4" Box	10	50	30
7733	42.50	7" Chain, 4" Box	10	50	60
7734	34.20	Chain and 3' Cord, 4" Box	10	50	60
7735	47.00	Chain and Ins. 4" Box	10	50	60

H & H Outlet Box Porcelain Pull Receptacles

One Piece, with Shadeholder Groove and Convenience Outlet

Lampholder, 250 Watts, 250 Volts
Outlet: 15 Amperes, 125 Volts
10 Amperes, 250 Volts



No. 4348

Nickel is the standard finish on chain. Special finishes will be supplied on special order.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
4346	\$41.00	7" Chain, 3/4" Box	10	50	40
4347	35.00	Chain and 3' Cord, 3/4" Box	10	50	40
4348	43.00	Chain and Ins. 3/4" Box	10	50	40
4349	53.50	7" Chain, 4" Box	10	50	55
4350	46.00	Chain and 3' Cord, 4" Box	10	50	55
4351	58.00	Chain and Ins. 4" Box	10	50	55

H & H Outlet Box Keyless Receptacles

660 Watts, 250 Volts



No. 292

Weatherproof receptacles have 6 inches of No. 14 wire.



No. 290

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
9307	\$19.50	Receptacle Only	10	100	29
292	15.00	With Metal Cover, 3/4" Box	10	100	50
445	17.00	With Metal Cover, 4" Box	5	100	60
290	18.00	Weatherproof, with Metal Cover, 3/4" Box	10	100	58
443	19.00	Weatherproof, with Metal Cover, 4" Box	5	100	70

H & H Porcelain Receptacles With 2 1/4-Inch Porcelain Shadeholder

For 3/4 and 4-Inch Boxes
Pull, 250 Watts, 250 Volts
Keyless, 660 Watts, 250 Volts



No. 277

Furnished with mounting straps and screws.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
277	\$90.00	Pull, With Chain and Insulator	2	10	18
282	140.00	Same as No. 277 with Plug Outlet	2	10	19
278	80.00	Keyless	2	10	18
283	120.00	Same as No. 278 with Plug Outlet	2	10	19

No. 284 H & H Porcelain Beam Lights Pull—Decorated

For 3/4 and 4-Inch Boxes
250 Watts, 250 Volts



Furnished with mounting straps and screws, chain and insulator with outlet. Carton, 2. Standard package, 10. Weight per standard package, 19 pounds. No. 284.....per 100 \$130.00

No. 998 H & H Porcelain Pull Canopy Receptacles

250 Watts, 250 Volts



Equipped with short chain and four feet of cord. Nickel chain is standard. Carton, 10. Standard package, 100. Weight per standard package, 34 pounds. No. 998.....per 100 \$20.00

H & H Outlet Box Porcelain Keyless Receptacles

One Piece

660 Watts, 250 Volts



No. 5965



No. 5968

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
5965	\$19.00	3/4-Inch Box	10	100	61
5968	24.00	4-Inch Box	5	50	54

H & H Outlet Box Porcelain Receptacles One-Piece, with Shadeholder Groove

Pull, 250 Watts, 250 Volts
Keyless, 660 Watts, 250 Volts



No. 7383



No. 7385



No. 7389

This receptacle has a recessed back for stud mounting. Stud straps are required.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7382	\$68.00	Pull, Chain and 3' Cord, 3/4" Box	10	50	34
7383	68.00	Pull, 7" Chain and Insulator, 3/4" Box	10	50	34
7385	56.50	Keyless, 3/4" Box	10	50	49
7371	68.00	Keyless, 4" Box	10	50	76
7389	78.50	Pull, Chain and 3' Cord, 4" Box	10	50	76
7390	78.50	Pull, 7" Chain and Insulator, 4" Box	10	50	76

Benco Weatherproof Sockets

With Type S (1¹/₁₆-Inch Diam.) Screw Thread



No. 4200

Listed by Underwriters' Laboratories

Benco Sockets are made for industrial or heavy duty use. They have highly insulated, rugged interior and strong metal casing. Thread on casing may be used for attaching reflectors with S holder and Benco holders.

Keyless Type—Medium Base

660 Watts, 600 Volts

Keyless sockets have a porcelain interior and lamp grip. Standard package, 50; carton, 10; weight, 17 pounds.

Casing Material	Finish	Tapped for 1/2-Inch I. P. Connection		Tapped for 3/8-Inch I. P. Connection	
		No.	Per 100	No.	Per 100
Aluminum	Pol. Alum.	4200	\$71.00	4201	\$71.00
Brass	Brush Brass	4202	85.00	4203	85.00
Copper	Nat. Copper	4204	71.00	4205	71.00

Pull Chain Type—Medium Base

660 Watts, 250 Volts



No. 4207

The inner-pull is a big feature of these Benco Sockets. It is a means to make them weather-proof and the chain action is unobstructed.

Molded composition interior and Benjamin Lamp Grip.

Standard package, 50; carton, 10; weight, 17 pounds.

Pull socket interior packed 50 in a standard package; carton, 10; weight, 13 pounds.

Casing Material	Finish	Tapped for 1/2-Inch I. P. Connection		Tapped for 3/8-Inch I. P. Connection	
		No.	Per 100	No.	Per 100
Aluminum	Pol. Alum.	4225	\$140.00	4226	\$140.00
Brass	Brush Brass	4207	140.00	4208	140.00
Copper	Nat. Copper	4236	140.00	4237	140.00

No. 4209, Pull Socket Interior Only.....per 100 \$90.00

Benjamin Benco Threaded Holders

With Type S (1¹/₁₆-Inch Diam.) Screw Thread

Benco Holders provide an easy means for attaching shades or reflectors to the Benco Sockets and Outlet Box Fittings. These holders are made to fit any glass or metal reflectors with standard neck sizes.

It should be noted, while considering the Benco Holders, that Benjamin Porcelain Enameled Steel Reflectors are furnished with holders for attachment to Benco Sockets and Outlet Box Fittings.

Polished Aluminum Holders—Weatherproof

	No.	Per 100	Size In.	Std. Pkg.	Car. Wt., Lbs. ton	Lbs. Std. Pkg.
2 1/4-Inch Holder	4215	\$30.00	2 1/4	50	10	3
	4217	45.00	3 1/4	50	10	4

Copper Holders—Weatherproof

	No.	Per 100	Size In.	Std. Pkg.	Car. Wt., Lbs. ton	Lbs. Std. Pkg.
3 1/4-Inch Holder	4370	\$30.00	2 1/4	50	10	8
	4372	45.00	3 1/4	50	10	9
	4373	72.00	4	50	10	10

Brushed Brass Holders

	No.	Per 100	Size In.	Std. Pkg.	Car. Wt., Lbs. ton	Lbs. Std. Pkg.
4-Inch Holder	4377	\$30.00	2 1/4	50	10	8
	4379	45.00	3 1/4	50	10	9
	4380	72.00	4	50	10	10

No. 43310 Union Weatherproof Sockets

Bakelite sockets are recommended where the socket will be subjected to abuse and high temperatures up to 500° C., and with gas filled lamps above 75 watts.

Mica sockets recommended; where adequate ventilation is provided they withstand the heat from gas filled lamps up to 75 watts.

All sockets supplied with spring contact unless solid contact is specified.

Sockets can be furnished with left hand thread if desired.

Medium screw base.

Packed 10 in a carton, 100 in std. pkg.



No.	Per 100	Kind	Thread	Per Pkg.	Wt. Lb.
43310	\$13.50	Bakelite	R.H.	14	
43310M	16.85	Mica	R.H.	20	
43310LH	17.60	Bakelite	L.H.	14	
43310M-LH	21.00	Mica	L.H.	20	

No. 60666 Union Weatherproof Sockets

Bakelite sockets are recommended where the socket will be subjected to abuse and high temperatures up to 500° C., and with gas filled lamps above 75 watts.

Composition sockets recommended; where adequate ventilation is provided they withstand the heat from gas filled lamps up to 75 watts.

All sockets supplied with spring contact unless solid contact is specified.

Sockets can be furnished with left hand thread if desired.

Medium screw base.

Packed 10 in a carton, 100 in std. pkg.



No.	Per 100	Kind	Thread	Per Pkg.	Wt. Lb.
60666	\$20.50	Bakelite	R.H.	16	
60666C	20.50	Composition	R.H.	22	
60666LH	24.25	Bakelite	L.H.	16	
60666C-LH	24.25	Composition	L.H.	22	

Union Ever-Ready Sockets

Bakelite Ever-Ready pin contact sockets, are absolutely weatherproof. The base has a long screw so that the cap may be screwed on after the wires are inserted.

A hook for supporting is supplied with each socket.

Packed 10 in a carton, 100 in a standard pkg.



No. 44408

No.	Per 100	Base	Wire No.	Std. Pkg.	Wt. Lb.
43308	\$20.00	Medium	14-12	11	
43318	20.00	Medium	12-10	11	
44408	10.00	Intermediate	18-16	4	
44418	16.00	Intermediate	14	5	
11108	7.00	Candelabra	18-16	5	

No. 600 Watertite Weatherproof Sockets

660 Watts, 600 Volts

Used as an under-water unit without injury or short-circuit in socket or lamp. Meets all requirements for outside use. Also, for service in mines, tunnels, boiler rooms, etc., and all places where there is moisture and condensation or where sediments form on sockets.

Standard weatherproof shade holder will fit socket. Fits standard sign receptacle cover.

Outside diameter, 1 1/2 inches. Leads are No. 14 stranded wire; 6 inches long. Carton, 10; standard package, 100.

Weight, standard package, 20 pounds.

No. 600.....each \$ 25



Protex Rubber Covered Sockets

660-Watts, 250-Volts



No. 700

The outer covering of this socket is made of high quality rubber compound to protect the interior from breakage and also make the socket shockproof and safe.

Packed 10 in a carton, 100 in a standard package.

Push Type



No. 717

To remove the interior of the socket, pull out fiber bar. When lamp is in socket, bar cannot be removed, as spring contact locks bar in.

No.	Each	Description	Wt., Lb. Std. Pkg.
700	\$.75	Pendant with 1/16-inch Cord Hole.....	27
701	.85	1/8-Inch Cap.....	29
702	.85	1/4-Inch Cap.....	29
703	.90	3/8-Inch Cap.....	31
704	.90	1/2-Inch Cap.....	32
705	.95	Pendant with 1/8 to 1/2-Inch Cord Grip.....	38

Keyless Type

Socket interior can be removed from the rubber cover by pushing or pulling it out.

No.	Each	Description	Wt., Lb. Std. Pkg.
710	\$.60	Pendant with 1/16 Inch Cord Hole.....	22
711	.70	1/8-Inch Cap.....	23
712	.70	1/4-Inch Cap.....	23
713	.75	3/8-Inch Cap.....	25
714	.75	1/2-Inch Cap.....	26
*715	.75	3/8-Inch Cap.....	24
*716	.75	1/2-Inch Cap.....	25
717	.80	Pendant with 1/8 to 1/2-Inch Cord Grip.....	33

*Seal-Tite socket; allows rubber to contact light bulb and make it moisture-proof.

Watertite Rubber Weatherproof Sockets

With Cadmium-Plated Covers

660-Watts, 600-Volts



Specify flat or raised covers as desired.

Leads consist of all rubber No. 14 stranded wire, 6 inches long. For leads longer than 6 inches, add 3 cents for each additional lineal foot desired.

Packed 10 in a carton, 100 in a standard package.

No.	601	602
Each	\$.35	.35
For Outlet Box	inches 3 1/4	4
Weight per Standard Package.....	pounds 54	55

Watertite Molded Rubber Lamp Receptacles

Made of one-piece molded rubber.

Packed 10 in a carton, 100 in a standard package.

Weight per standard package, 31 pounds.



No. 603, with Side Wires

For indoor and outdoor use; tunnel work and mine lighting; and for railway signal and crossing gate lighting.

Screw spacing, 2 inches, center to center.

No. 603.....each \$.50



No. 604, with Back Wires

Designed for spider outlet box covers. Especially suitable for locations where there is moisture and dust.

Screw spacing, 2 inches, center to center.

No. 604.....each \$.50

Benco Outlet Box Receptacle Covers

With Type S (1 1/16-Inch Diameter) Screw Thread

Listed by Underwriters' Laboratories
660-Watts, 250-Volts—Medium Base



No. 1405



No. 1406



No. 1410

Provides a cover for the outlet box; a medium base receptacle for a lamp and threaded shell which makes it easy to attach Benco Threaded Holders and Benjamin Reflectors with Type S Holder.

Nos. 1406 and 1403 are for use in factories, warehouses and similar industrial locations.

Nos. 1405, 1402 and 1410, are for use in stores, offices and public buildings.

All fittings may be attached direct to the ears of the outlet box. No. 1410 attached either direct to the outlet box ears or through a stirrup, which is furnished, for connection to fixture stud.

Fits Round or Octagonal Outlet Boxes at Least 1 1/2 Inches Deep

No.	Per 100	Description	For Box Size Inches	Car-ton	Std. Pkg.	Ship. Wt., Lb. Std. Pkg.
1405	\$90.50	*Complete.....	3 1/4, 4	10	50	49
1406	72.50	†Less Brass Cover.....	3 1/4, 4	10	50	50
1407	18.00	*Brass Cover Only.....	3 1/4, 4	10	50	10
1402	74.50	*Complete.....	3 1/4	10	50	49
1403	57.50	†Less Brass Cover.....	3 1/4	10	50	45
1404	17.00	*Brass Cover Only.....	3 1/4	10	50	5

Fits Round or Octagonal Outlet Boxes 1/2 to 1 1/2 Inches Deep Or Mounts on Flat Surface

1410	\$115.00	*Complete.....	4	10	50	54
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*Brush brass. †Green enamel.

No. 91 Benjamin Socket Extensions

Medium Base
660 Watts, 250 Volts



For attaching glassware to flush sockets or ceiling receptacles. Lowers the lamp, in long narrow shades, 1/2 inch. Permits use of 60, 100 and 150-watt lamps in reflectors designed for next larger size lamp. Lacquered brass finish.

Packed 10 in a carton, 50 in a standard package.

No. 91, Weight per Standard Package, 10 Lb. per 100 \$17.00

No. 4396 Benjamin Mogul Base Socket Extensions

Listed by Underwriters' Laboratories
1500-Watts, 600-Volts



By means of this device the socket may be extended 2 1/2 inches, and lamp filament lowered correspondingly.

Fixtures designed for 750, 1000 and 1500-watt lamps may be converted for use with 300 and 500-watt lamps, with the addition of this extension.

Body is of porcelain with contact parts of brass or copper.

Packed 10 in a carton, 50 in a standard package.

Weight per standard package, 55 pounds.

No. 4396.....per 100 \$110.00

Bryant Socket Reducers



No. 391



No. 392

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
421	\$32.00	Mogul to Medium.....	10	100	19
392	15.00	Medium to Candelabra.....	25	100	6
391	15.00	Candelabra to Miniature.....	20	100	1

Bryant Porcelain Rosettes

With Fusible Caps
2 Amperes, 125 Volts



No. 1501



No. 1502

No.	Per 100	Diam. In.	Screw Spacing In.	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
*1501	\$29.00	2 31/32	1 5/8	10	100	40
*1502	29.00	2 11/32	1 5/8	10	100	49

With Screw Terminals
660 Watts, 250 Volts



No. 574



No. 575

No.	Per 100	O.D. In.	Screw Spacing In.	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
574	\$35.00	3 11/16	2 3/4	10	50	27
575	48.50	4 21/32	3 9/32 & 3 1/2	5	50	48

*Not listed as standard by Underwriters' Laboratories, Inc.

H & H Porcelain Rosettes

Fuseless, 660 Watts, 250 Volts

Fusible, 2 Amperes, 125 Volts



No. 483



No. 484

Nos. 483, and 838 have a base diameter of 2 1/4 inches. Nos. 484 and 839 have a base diameter of 2 5/8 inches. Screws spaced 1 5/8 inches on centers.

No. 485 has a base size 2 5/16 inches square.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb. Pkg.
483	\$16.00	Fuseless, Cleat Base.....	10	100	41
484	16.00	Fuseless, Concealed Base.....	10	100	48
485	16.00	Fuseless, Molding Base.....	10	100	42
838	29.00	Fusible, Cleat Base.....	10	100	40
839	29.00	Fusible, Concealed Base.....	10	100	49

No. 1999 H & H Porcelain Rosettes

One Piece—Fuseless



Cleat and concealed type. Diameter, 2 3/32 inches, screws spaced 1 1/8 inches on centers. Carton, 10. Standard package, 100. Weight per standard package, 23 pounds.

No. 1999..... per 100 \$13.00

H & H Porcelain Rosettes

For Outlet Boxes



No. 1174



No. 1173

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb. Pkg.
1174	\$35.00	With Terminals, 3 1/4" Box.....	10	50	27
1175	48.50	With Terminals, 4" Box.....	5	50	37
1172	11.00	Without Terminals, 3 1/4" Box....	10	50	19
1173	15.00	Without Terminals, 4" Box.....	5	50	36

Hubbell Socket Chain, Cord, and Tassels



No. 5382



No. 3946



No. 5919



No. 7015



No. 3436

Pull sockets furnished with short chain and 4 feet of cord, complete with tassel instead of 6 1/2-inch chain, add \$3.00 per 100.

Standard finish is brush brass. For special finishes on chain add \$2.00 per 100 feet or fraction.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb. Pkg.
5382	†\$7.50	No. 6 Standard Socket Chain.....	* 1000	18	
5535	†8.00	No. 3 Candelabra Chain.....	* 1500	7	
6563	†2.00	Black Linen Cord.....	* 1000	10	
6733	†2.00	White Linen Cord.....	* 1000	10	
6735	†3.50	Heavy Black Linen Cord.....	* 1100	3	
3436	21.00	6-Foot Cord, Chain and Tassel....	* 250	10	
3321	32.00	6 1/2-Inch Chain, Ins. and Tassel...	* 250	10	
3946	9.50	Tassel, Standard Detachable.....	* 250	5	
3947	9.50	Tassel, Candelabra Detachable....	* 50	1	
†6561	†20.50	6-Foot Cord Only with Tassel....	* 250	10	
†6562	†28.50	10-Foot Cord Only with Tassel....	* 250	15	
†5919	9.50	Tassel, Adjustable for Linen Cord.	* 250	5	
7015	26.50	Tassel, Detachable, Luminous....	25	50	19

*Packed in bulk. †Price per 100 feet. ‡No. of feet.
§Furnished in black finish to match cord. ||Ounces.
¶Can be supplied with black cord at no extra price.

Hubbell Detachable Links



No. 6999



No. 7026



No. 6814



Nos. 1650 and 1651

These links are easy to attach and detach. Neat in appearance.

Standard finish is brush brass. Other finishes on order.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb. Pkg.
6999	\$13.50	Detachable Insulator.....	100	100	16
7026	4.50	Detachable Chain Connector.....	100	200	8
*6814	13.00	Detachable Insulating Link...	100	100	8
1650	4.50	Splicing Link for No. 3 Chain.....	200	200	8
1651	4.50	Splicing Link for No. 6 Chain.....	200	200	8
1652	9.50	Porcelain Pendant.....	50	100	2

*This device is fitted with slotted catches for chain.

Hubbell Pull Socket Attachments



No. 5828

For Brass Shell Pull Sockets

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb. Pkg.
5828	\$42.50	For 8, 10 and 12-Inch Reflectors..	25	100	7
5829	42.50	For 14-Inch Reflectors.....	25	100	8

For Porcelain Pull Sockets

5957	\$42.50	For 8, 10 and 12-Inch Reflectors..	25	100	7
5958	42.50	For 14-Inch Reflectors.....	25	100	8

Hubbell Shade Holders

Direct Threading 3-Screw Type



No. 501

For Brass Shell Sockets

Standard finish is brush brass.

Can be furnished less screws, untapped and unfinished.

No.	Per 100	Description	Size Inches	Car-ton	Std. Pkg.	Wt. Lb.
501	\$10.00	Finished	2 1/4	50	500	26
501	9.50	Unfinished	2 1/4	50	500	26
505	28.00	Finished	3 1/4	25	250	30
505	27.50	Unfinished	3 1/4	25	250	30

For Medium Base Weatherproof Sockets

Standard finish is brush brass or wash nickel. Brush brass is furnished unless otherwise specified.



No. 6633

No.	Per 100	Size Inches	Car-ton	Std. Pkg.	Wt. Lb.
6633	\$17.00	2 1/4	25	200	13
6634	24.50	3 1/4	10	100	15
6635	48.00	4	10	100	23

H & H Uno Shadeholders

With Ventilating Holes



No. 4000



No. 4004

Standard finish is brass.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
4000	\$10.00	2 1/4-Inch, with Screws	50	500	25
4004	16.00	2 1/4-Inch, Wire Spring	50	250	14
4007	30.00	Form H, Wire Spring	25	100	11
4001	28.00	3 1/4-Inch, with Screws	25	250	27
4002	40.00	4-Inch, with Screws	10	100	16

Morse Eureka Bayonet Sockets



No. 30



No. 20

Has black bakelite base, plunger inserts, brass shell and screws. Nickel plated.

No.	Double Contact		Single Contact
	30	20	21
Each	\$.50	.40	.40
Base	1 5/8 x 1 1/16 inches	*1 3/8	*1 3/8
Overall Height	1 1/8 inches	1 5/16	1 5/16

*Diameter.

Morse Eureka Candelabra Bayonet Lamp Socket Adapters



Extensively used as photo and flash lamp adapters.

No.	Description	Each
67	Medium to Double Contact	\$.40
68	Medium to Single Contact	.40

Bryant Shade-Holders
Ventilated Uno

Uno Shade-Holders attach directly to the threaded bead on medium base sockets and receptacles. Because of the wedge thread, the fit between socket-shell and holder is rigid.



No. 501



No. 504



No. 533

With Screws to Hold Shade

Cat. No.	Per 100 Finished	Per 100 Unfinished	Size In.	Car-ton	Std. Pkg.	Wt. Lbs.
501	\$10.00	\$9.50	2 1/4	50	500	21
505	28.00	27.50	3 1/4	25	250	31
511	40.00	39.00	4	10	100	18

With Spring Grip to Hold Shade

Cat. No.	Per 100 Finished	Per 100 Unfinished	Size In.	Car-ton	Std. Pkg.	Wt. Lbs.
502	\$16.00	\$15.50	2 1/4	50	250	13
504	30.00	29.50	2 1/4	25	100	11

Solid Uno

With Spring Grip to Hold Shade

Cat. No.	Per 100 Finished	Per 100 Unfinished	Size In.	Car-ton	Std. Pkg.	Wt. Lbs.
533	\$18.00	\$17.00	2 1/4	50	250	14

No. 443 Bryant Emergency Shade-Holders

Solid Type



Emergency Shade-Holders made with spring grip only, are designed for medium screw base porcelain sockets and receptacles. They are not approved for use on circuits exceeding 250 volts. The screw shell of the shade-holder is insulated from the body of the shade-holder and screws over the shell of the socket or receptacle without interfering with the lamp. Size, 2 1/4 inches.

Carton, 25. Standard package, 100.

Weight package, 7 pounds.

No. 443	per 100	\$33.00
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Bryant Weatherproof Shade-Holders

Used with any medium base porcelain or composition socket or receptacle provided with a shade-holder groove.

Not N.E.C.S.



Cat. No.	Per 100 Finished	Size Inches	Car-ton	Std. Pkg.	Wt. Lbs.
628	\$17.00	2 1/4	25	250	15
629	24.50	3 1/4	10	100	9

No. 549 Bryant Fixture Rings

Listed by Underwriters' Laboratories, Inc.



Used for lamp shade frames and ornamental fixture pieces.

No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
549	\$9.50	50	200	4

Bryant Insulating and Splicing Links



No. 811



No. 813

Standard finish is brush brass, which will be supplied when no other finish is specified.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs.
513	\$13.00	Insulating Link for No. 3 or No. 6 Chain	20	100	1/2
810	4.50	Splicing Link to Connect No. 6 Chain to Small Cord	40	200	1/2
811	4.50	Splicing Link for No. 3 Chain	40	200	1/2

Bryant Bakelite Flush Receptacles

For Plates without Doors

15 Amps., 125 Volts; 10 Amps., 250 Volts Each Outlet

Top Wiring Terminals



No. 4810 Single

Cat. No.	Per 100	Depth In.	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
4810	\$32.00	27/32	10	100	16



No. 4812 Duplex

4812	\$42.50	29/32	10	100	22
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Side Wiring Terminals



No. 4831 Single

4831	\$24.50	21/32	10	100	15
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No. 4832 Duplex
Common Feed, Common Ground

Two binding screws in each side wiring terminal.

4832	\$32.00	27/32	10	100	22
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No. 4832X Duplex
2 Feeds, 2 Returns

4832X	\$42.50	27/32	10	100	22
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No. 4832Y Duplex
2 Feeds, 1 Return

4832Y	\$42.50	27/32	10	100	22
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No. 770 for Tumbler Switch Plate
For use with Bakelite plates only.

770	\$24.50	7/8	10	100	13
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Hemco Bakelite Receptacles



No. H141



No. H142

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
H141	\$8.50	Single Receptacle...	10	100	12
H142	10.50	Duplex Receptacle...	10	100	17

Bryant Top Wired Duplex Flush Receptacles

With Bakelite Plate Having Integral Bosses

15 Amps., 125 Volts; 10 Amps., 250 Volts, Each Outlet



Body and plate are of brown Bakelite.
Top wiring terminals, with two binding screws in each side.

Bakelite shoulders protect the screws and hold the wires in place.

Completely enclosed moisture-proof bakelite back.

Base is 2 1/16 x 1 11/16 inches.

Depth, 29/32 inches.

Supporting screw spacing, 3 3/32 inches.

4822	\$63.00		10	100	31
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Bryant 3-Wire Duplex Flush Receptacles

Side Wired

15 Amperes, 125 Volts; 10 Amperes, 250 Volts Each Outlet

Listed by Underwriters' Laboratories, Inc.



No. 4326

For use with standard duplex receptacle plates (V section).

Base, 2 1/16 x 1 15/32 inches. Depth, 27/32 inch. Supporting screw spacing, 3 3/32 inches.

No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
4326	\$168.00	10	30	6
*4327	168.00	10	30	6

*Has grounded yoke.

Bryant Duplex Radio Outlets

Listed by Underwriters' Laboratories, Inc.



No. 3807

Provides power, ground and antenna connections for radios which have two aerial connections and one ground. This combination fills the need for a compact radio outlet for use with combination short wave and standard wave sets with two antenna connections.

Equipped with divider plate which fits 1 1/2, 2 and 2 1/2-inch boxes.

Power side rated, 15 amperes, 125 volts; 10 amperes, 250 volts.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
3807	\$132.50	Brown....	2	10	3
3807-I	139.50	White....	2	10	3

Caps

3808	\$17.00	Brown....	2	10	1/2
3808-I	23.50	White....	2	10	1/2



No. 3808

Bryant Pilot Light Combinations

Switches: 10 A., 125 V.; 5 A., 250 V.



Combination of one switch and one pilot light with one brass guard, with .060-inch plate ready-wired, 1-gang.

Porcelain cup is 1 1/2 inches deep.

Carton, 2. Standard package, 10.

Weight standard package, 7 1/4 pounds.

No. 2959, Double-Pole Tumbler Switch....	per 100	\$300.00
No. 3959, Single-Pole Quadruple Break Tumbler Switch.....	per 100	300.00
Nos. 2959 and 3959, without Plate.....	per 100	227.50
Nos. 2959 and 3959, without No. 618 Lamp, Deduct	per 100	35.00

Bryant Receptacle and Pilot Lamp Combinations

Receptacles; 15 A., 125 V.; 10 A., 250 V.



Single gang. With porcelain cup. Plate, 2 3/4 x 4 1/2 inches.

Suitable machine screws furnished for mounting on boxes.

Carton, 2. Standard package, 10.

Weight standard package No. 5121, 15 pounds; No. 5122, 12 pounds.

No. 5121, with .060-In. Brush Brass Plate....	per 100	\$194.00
No. 5122, with Brown Bakelite Plate.....	per 100	194.00

Bryant Receptacle and Switch Combinations

Listed as Standard by Underwriters' Laboratories

Carton, 2. Standard package, 10.

With .060-Inch Brass Plate
10 Amperes, 250 Volts

Cat. No.	Per 100	Description	Wt., Lbs. Std. Pkg.
2994	\$187.00	Double Pole.....	6
3994	187.00	Single Pole Quadruple Break.....	6



No. 2994

20 Amperes, 250 Volts			
2995	\$201.50	Double Pole.....	6
3995	201.50	Single Pole Quadruple Break.....	6

With Brown Templus Plate with Integral Boss

10 Amperes, 250 Volts			
2989	\$187.00	Double Pole.....	5
3989	187.00	Single Pole Quadruple Break.....	5
20 Amperes, 250 Volts			
2999	\$201.50	Double Pole.....	5
3999	201.50	Single Pole Quadruple Break.....	5

.060-Inch Brush Brass Plates

Nos. 2994 & 3994 Less OW461.....	per 100	\$163.50
Nos. 2995 & 3995 Less OW461.....	per 100	178.00

No. 763 Bryant Pilot Light Combinations

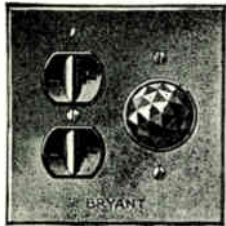
Receptacles: 15 A., 125 V.; 10 A., 250 V.

Ready-wired combination of one duplex flush receptacle, one pilot light, with solid plate, 2-gang.

The insertion of the plug illuminates the bull's eye.

Porcelain cup is 2⁹/₁₆ inches long, 3¹/₂ inches wide, 1⁵/₈ inches deep.

Four supporting screw holes, spaced 3³/₈ inches on centers vertically and 1¹/₁₆ inches on centers horizontally for installation in standard 2-gang outlet box.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
763	\$387.50	2	10	18

Bryant Fan Hanger Outlets

15 Amps., 125 Volts; 10 Amps., 250 Volts



A cadmium-plated steel sub-plate supports the bakelite receptacle. The brush brass flush plate is held independently and therefore will not loosen even if the fan hanger supporting screw is not replaced when fan is removed.

Special finishes on plates for fan hangers take a 10 per cent advance over usual special finish charges.

Packed 10 in a carton, 20 in a standard package.

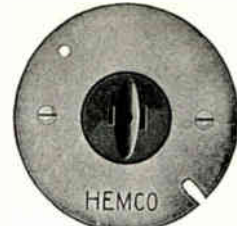
Weight per standard package, 14 pounds.

Listed standard by Underwriters' Laboratories.

No. 3750, Yoke Mounting Type.....	per 100	\$260.00
No. 3751, Stud Support.....	per 100	260.00



Hemco Outlet Box Receptacles



No. H341

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lbs.
H341	\$12.50	Single, on 3 ¹ / ₄ -Inch Box Cover.	10	50	15
H342	15.00	Duplex, on 3 ¹ / ₄ -Inch Box Cover.	10	50	15
H441	14.00	Single, on 4-Inch Box Cover...	10	50	22
H442	16.00	Duplex, on 4-Inch Box Cover...	10	50	25

Bryant Outlet Box Receptacles

Brown Bakelite—With T Slots

With Satin Cadmium Finish Metal Covers

15 Amps., 125 Volts; 10 Amps., 250 Volts Each Outlet

These devices are provided with side-wired brown bakelite receptacles.

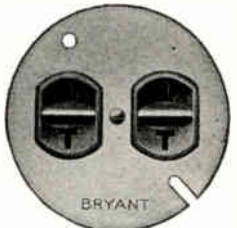
The receptacles are also provided with raised ribs which facilitate insertion of caps in the concave surfaces.

Single, Side Wired



No.	Per 100	Size Box Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
3780	\$32.00	3 ¹ / ₄	10	100	34
4780	35.00	4	5	50	23

Duplex, Side Wired



No.	Per 100	Size Box Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
3781	\$39.50	3 ¹ / ₄	5	50	16
4782	42.50	4	5	50	26

Bryant Round Porcelain Receptacles

15 Amperes, 125 Volts

10 Amperes, 250 Volts



No. 115

Suitable machine screws are furnished for mounting these devices on boxes.

The standard finish is brush brass which will be furnished when no finish is specified.

With Solid Brass Plate

Cat. No.	Per 100	Diam. Plate In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
115	\$106.00	2 ³ / ₄	2	50	19
116	118.00	3 ⁵ / ₈	2	50	28

With Ears

No. 733	733	\$31.00	...	10	50	9
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Bryant Bull's Eye Jewels

The Bryant Bull's Eye is a warning signal of great utility and convenience. It consists of a ruby glass jewel fastened in the center of a flush plate of standard dimensions, behind which is a small electric lamp in a special receptacle. This lamp is wired in multiple with the devices whose operation it indicates.

Green, clear, opalescent, amber, or blue jewels can be furnished on special order without extra charge.

Ruby Jewels—Molded Plastic



No. 3850



No. 737



No. 746

Round, for Mounting in F Plates
With Solid Brush Brass Rim

Removable from front.

No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
3850	\$36.00	10	30	1 1/2

With Ventilated Brush Brass Rim

Non-removable.

737	\$113.00	10	30	2
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Rectangular, for Mounting in Slot of an S Plate
—With Solid Brush Brass Rim

Non-removable.

746	\$36.00	10	30	1/2
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Bryant Flush Lamp Receptacles for Use with Jeweled and Louvre Plates



No. 427

75 Watts—125 Volts

With No. 618 125-volt lamp.
Will take either Form H or Type S-7 candelabra base lamps, rated 125 volts.
Porcelain cups, 2 5/16 inches long; 1 1/16 inches wide; 1 3/8 inches deep.

Supporting screw spacing, 3 3/8 inches.

May be installed individually or may be mounted in a combination with switches and receptacles and the entire combination covered by a single flush plate.

For receptacle without lamp, deduct \$35.00 per 100 from price.

No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
427	\$106.00	10	30	6

Bryant Louvre Plate

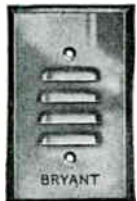
for Use with Flush Lamp Receptacles

Can be used with No. 427 receptacle and flush buzzers.

Made in .040-inch brass only.

Single gang.

OL241	\$121.00	5	30	18
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No. OL241



No. 618

Bryant Flush Lamp Receptacles

125 Volts

Candelabra base, 6 watts Mazda.

For No. 427 receptacle, and also Nos. KE, 2959, and 3959.

618	\$30.00	10	30	1/2
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Insert to Fill Opening in "S" Plate

Brown bakelite. Insert on metal yoke.

756	\$22.50	10	30	1
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No. 756

Bryant Receptacle with No. 618 Lamp

for Plates with Removable Bull's Eye

75 Watts—125 Volts

For use only with plates with removable bull's eye No. 3850 and ventilated jewel No. 737. With No. 618 125-volt lamp.

For receptacle without lamp, deduct \$35.00 per 100 from price.

3851	\$106.00	10	30	7 1/2
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Bryant Hemco Cube-Taps, Twin-Lite, and Thru-Lite Plugs



No. H17
Cube-Tap



No. H18
Cord Cube-Tap



No. H20
Twin-Lite



No. H204
Thru-Lite

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs. Pkg.
H17	\$7.60	Bakelite Cube-Tap.....	20	100	9
H18	8.54	Bakelite Cord Cube-Tap.....	20	100	10
H20	10.50	Bakelite Twin-Lite.....	10	100	11
H204	40.00	Bakelite Thru-Lite.....	10	100	15

No. H706 Hemco Bakelite Plug Bodies



Cat. No.
H706

Per 100 \$5.00

Car-ton 25

Std. Pkg. 500

Wt. Lbs. Std. Pkg. 21

Bryant Hemco Bakelite and Rubber Handle Caps



No. HF

Bakelite Handle Caps

Cat. No.
HF

Per 100 \$5.00

Description With 1/2-Inch Hole.

Car-ton 10

Std. Pkg. 100

Wt. Lbs. 5



Nos. HRE
and HRF

Rubber Handle Caps

HRA
HRB
HRE
HRF
HRS

\$7.00
7.00
7.00
7.00
32.00

.312 to .390-In. Hole
.260 to .312-In. Hole
.312 to .390-In. Hole
.260 to .312-In. Hole
.578-Inch Hole....

25
25
25
25
25

100
100
100
100
100

7
7
8
8
7



No. HRD

HRD

\$9.50

With .425-Inch Hole

25

100

8 1/4



Nos. HUV
and HUX

Bakelite Caps

HUV
HUY
HUT
HUX

\$3.50
3.50
3.50
3.50

1 1/2-Inch Hole.....
5/16-Inch Hole.....
3/8 x 3/8-Inch Hole....
1/4 x 3/16-Inch Hole...

25
25
25
25

500
500
500
500

18
18
18
18

No. 345 Bryant Attachment Plugs Molded Weatherproof, Fuseless 660 Watts, 600 Volts



In one piece. Has 6-inch No. 14 stranded wire leads. For longer wires add \$4.50 per 100 devices for each extra foot on each conductor.

Carton, 10; standard package, 250.

Package weight, 44 pounds.

No. 345.....per 100 \$34.00

**No. JX Bryant Composition Caps
With Cord Grip**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts
 $\frac{7}{16}$ -inch cord hole.
 Steel armored cap, cadmium-plated.
 With cord grip.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
JX	\$37.50	10	50	6

**No. KG Bryant Composition
Motor Attachment Caps**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts
 Has $\frac{13}{32}$ -inch cord hole.
 Base is $1\frac{1}{2}$ inches in diameter and $\frac{11}{16}$ inches thick. Screw spacings, 1 inch.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
KG	\$17.00	10	50	4

No. TW Bryant Double T Caps

With Cord Grip—For Heavy Duty
 15 Amperes, 125 Volts; 10 Amperes, 250 Volts
 Armored cadmium-plated cap.
 Has $\frac{13}{32}$ -inch cord hole.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
TW	\$56.00	10	30	4

No. TV Bryant Double T Caps

For Heavy Duty

15 Amperes, 125 Volts; 10 Amperes, 250 Volts
 Brown Bakelite cap.
 Has $\frac{13}{32}$ -inch cord hole.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
TV	\$50.00	10	50	3

No. KL Bryant Composition Adapters

660 Watts, 250 Volts

Diameter, $1\frac{1}{16}$ inches.
 Length, $1\frac{1}{2}$ inches.
 Carton, 10. Standard package, 50.
 Package weight, 7 pounds.



No. KL..... per 100 \$39.50

No. UR Bryant Flush Motor Plug Caps

Back Connected

15 Amps., 125 V.; 10 Amps., 250 V.
 Diameter of cup, $1\frac{1}{2}$ inches. Depth, $1\frac{1}{4}$ inches. Screw hole spacing, $1\frac{1}{16}$ in.
 Carton, 10; standard package, 50.
 Weight standard package, 7 pounds.
 No. UR..... per 100 \$39.50



**No. KE Bryant Composition
Pilot Caps**

15 Amperes, 125 Volts

Furnished with brass guard and lamp for 125 volts.

Diameter, $1\frac{3}{8}$ inches.
 Length, $3\frac{1}{2}$ inches.

Extra lamp, No. 618, for this cap is listed on another page.

When No. 618 lamp is omitted deduct \$35.00 per 100 lamps from price of No. K.E.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
KE	\$113.50	2	10	2

Bryant Porcelain Receptacles

15 Amperes, 125 Volts; 10 Amperes, 250 Volts
 Listed by Underwriters' Laboratories, Inc.



No. 105



No. 112



No. 114

Packed 10 in a carton, 50 in a standard package.

Concealed Wiring

No.	Per 100	Diameter Inches	Height Inches	Screw Spacings Inches	Wt., Lb. Std. Pkg.
105	\$51.00	$2\frac{1}{32}$	$1\frac{3}{8}$	$1\frac{1}{2}$	15

Cleat Wiring

112	\$47.00	$1\frac{3}{4}$	$1\frac{1}{2}$	$\frac{5}{8}$	13
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Panel or Plate Mounting

Requires $1\frac{1}{16}$ -inch hole. Projects $\frac{1}{2}$ inch above and $\frac{3}{32}$ inch below mounting level. Distance from back of cover to bottom of wire grooves, $1\frac{1}{16}$ inch.

114	\$51.00	$1\frac{1}{16}$	12
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Bryant Plug Receptacles

For Mounting in Canopies
 15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
4730	\$32.50	Bakelite, with 6-Inch Wires	10	50	4
4723	26.50	White Porcelain, without Wire Leads	10	50	3

**No. 113 Bryant Composition
Outlet Box Bodies**

For $\frac{1}{2}$ -Inch Knockouts

15 Amperes, 125 Volts; 10 Amperes, 250 Volts
 Does not have tandem slots
 Will not take polarity caps.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
113	\$37.00	10	50	9

**No. 103 Bryant Composition Cord
Connector Bodies**

15 Amperes, 125 Volts
 10 Amperes, 250 Volts

Diameter, $1\frac{3}{8}$ inches. Cord hole, $1\frac{1}{32}$ inch.
 Length, $1\frac{3}{8}$ inches. Has T slots.
 Carton, 10; standard package, 50.
 Package weight, 7 pounds.



No. 103..... per 100 \$39.50

**No. H130 Bryant Bakelite Cord Connector
Bodies**

10 Amperes, 250 Volts—15 Amperes, 125 Volts

Diameter, $1\frac{3}{16}$ inches.
 Length, $1\frac{3}{8}$ inch.
 With $\frac{5}{16}$ -inch cord hole.
 Carton, 10. Standard package, 50.
 Weight package, 4 pounds.



No. H130..... per 100 \$12.34



Bryant 2-Wire Twistlock Midget Cord Connectors

15 Amperes, 125 Volts—10 Amperes, 250 Volts
Listed by Underwriters' Laboratories, Inc.

For small appliances and equipment. Prevents service interruptions caused by accidental separation of connectors. Extremely compact.

Made of brown bakelite. The steel cord grips match the bakelite.

Packed 10 in a carton, 50 in a standard package.



No. TL7462



No. TL7465



No. TL7461



No. TL7464



No. TL7466



Bryant Duplex Flush Convenience Outlets



No. 9200

Twist-Tite—Grip Contacts

15 Amperes, 125 Volts
10 Amperes, 250 Volts

Listed by Underwriters' Laboratories, Inc.



No. 9206

For Standard Wall Boxes

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
9200	\$32.00	Brown Bakelite	10	100	25
9200-I	\$39.00	Ivory Bakelite	10	50	13
With Cadmium Finished Covers					
9205	\$39.50	3 1/4-Inch Box	10	50	20
9206	\$42.50	4-Inch Box	5	50	25

Bryant 3-Wire Caps, Connectors, and Receptacles

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 9111



Nos. 9112 and 9322



No. 9115



Nos. 9113 and 9323



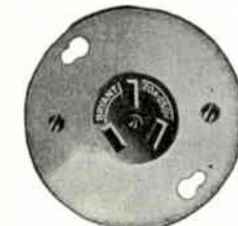
No. 9119



No. 9117



Nos. 9119 and 9325



No. 9324

Caps Brown Bakelite

Cat. No.	Per 100	Cord Hole In.	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
9110	\$34.00	1 1/2	10	50	4
Composition					
9111	\$34.00	1 1/2	10	50	6
Armored Cord Grip					
9112	\$54.00	3/8 to 1/2	10	50	8
Flush Motor Plug Cap					
9115	\$78.50	Screw spacing, 2 1/16 in.	10	50	10

Composition Cord Connectors

Cat. No.	Per 100	Body In.	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
9113	\$71.50	7/64	10	50	9
9114	\$92.50	3/8 to 1/2	10	50	12

Receptacles

Bases of Nos. 9116 and 9120 are 2 1/2 x 1 5/8 inches. Depth, 1 1/2 inches. Supporting screw spacing, 3 3/4 inches. Top wiring terminals. Take standard F plates.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
Composition Flush				
9116	\$115.00	10	50	15
Porcelain, Flush Conduit Box				
9117	\$54.00	10	50	12
Porcelain Concealed Base				
9119	\$79.50	10	50	20
Composition Flush, with Grounding Terminal Connected to Yoke				
9120	\$115.00	10	50	15
3-Wire Composition Flush				
9121	\$128.00	5	50	35

20 Amperes, 250 Volts Cord Grip Cap

Steel covered, cadmium-plated.
No. 9322G has grounded cover.

9322	\$101.00	3/8-5/8	10	20	4 1/4
9322G	101.00	3/8-5/8	10	20	4 1/4

Composition Cord Connector

9323	\$156.00	3/8-5/8	10	20	8
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Porcelain Receptacles Flush

Base, 2 5/16 x 1 5/8 inches.
Depth, 1 1/2 inches.
Screw spacing, 3 3/4 inches.
Takes standard F plate.
No. 9326G has grounded yoke.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
9326	\$127.00	10	30	12
9326G	127.00	10	30	12

Concealed Base

9325	\$102.00	10	30	14
For 4-Inch Outlet Box				
9324	\$140.00	5	30	22

Bryant 3-Wire Polarized Caps and Receptacles

**Heavy Duty
3-Wire Polarized Caps**

**With Screw Terminals
30 Amperes, 250 Volts**

Composition cap, with grounding prongs and $\frac{3}{8}$ to $\frac{3}{4}$ -inch cord grip.

Has ears for permanently attaching cap to the plate; also for ground connection. Ears can be removed if not required.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
No. 786	786	\$151.00	2	10 10

**With Solder Lugs
50 Amperes, 250 Volts**

Composition caps, with grounding prongs and clamp for armored conductor.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
No. 775	775	\$212.00	2	10 14
No. 776	776	\$228.00	2	10 16

Straight Clamp

Angle Clamp

3-Wire Polarized Receptacles with Solder Lugs

50 Amperes, 250 Volts

Nos. 747 and 787 fit (Universal) No. 72C102 cover for $4\frac{1}{16}$ -inch square box.



Porcelain Surface Receptacle
Mounting screw spacing, $2\frac{1}{2}$ inches.

No. 747	747	\$106.00	5	10 11
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No. 757



No. 757	757	\$466.00	2	10 12
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Composition Surface Receptacle
Mounting screw spacing, $2\frac{1}{2}$ inches.

No. 787	787	\$165.50	5	10 7
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No. 787

Flush Plates for 3-Wire Receptacle No. 757

These plates are $5\frac{1}{2}$ inches square with $2\frac{1}{8}$ -inch center hole and are fitted with contacts for grounding prongs.

Supporting screw spacings are $3\frac{1}{8} \times 3\frac{3}{4}$ inches to fit No. 758 plaster box cover.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
No. 691	691	\$151.00	2	10 8

No. 691



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
No. 788	788	\$75.50	2	10 5

No. 788

Box Covers for 3-Wire Receptacle No. 757

For Plaster Box

No. 758	758	\$75.50	2	10 5
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No. 758

For $4\frac{1}{16}$ -Inch Box

Will fit No. 72171 Box, as manufactured by General Electric Company, National Electrical Products Company, Roach-Appleton Mfg. Company, and Steel City Electric Company.



No. 759	759	\$151.00	2	10 9
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No. 759

Bryant 3-Wire Polarized Connectors and Fittings

Listed by Underwriters' Laboratories, Inc.

Rubber Cable Cord Sets—Molded Rubber Caps



No. 3829

Length, 38 inches. Furnished without grounding prongs.

35 Amperes, 250 Volts

No.	Per 100	Description	Car-ton	Std. Pkg.	Std. Pkg.	Wt., Lb.
3829	\$289.50	Two No. 8, One No. 10 Wires	2	10	19	

50 Amperes, 250 Volts

3830	343.50	Two No. 6, One No. 8 Wires	2	10	23	
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Rubber Cable Cord Sets—Non-Separable Bakelite Caps



No. 3898

Length, 36 inches. Furnished without grounding prongs.

35 Amperes, 250 Volts

3898	\$230.00	Two No. 8, One No. 10 Wires	2	10	20	
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50 Amperes, 250 Volts

3899	240.00	Two No. 6, One No. 8 Wires	2	10	25	
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Bakelite Receptacles

Solderless Terminals



With $\frac{3}{4}$ and 1-inch knockouts for conduit in bottom and back.

No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
3826	\$193.00	2	10	11

Grounding Straps

For use with No. 3826 terminal.

3827	\$43.00	2	10	$\frac{1}{2}$
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Tube and Connector Clamps

For use with No. 3826 terminal. Holds three No. 6 wires.

3828	\$75.00	2	10	4
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Angle Connectors

Furnished with $\frac{3}{4}$ -inch lock nut and rubber bushing.

No. 3839 for use with No. 3829 cord set; No. 3840 for No. 3830 cord set.

3839	\$64.00	2	10	3
3840	64.00	2	10	3



No. 3839

Bryant Hemco Heater and Cube-Tap Cord Sets

Listed by Underwriters' Laboratories, Inc.



No. HC630G



No. HC633

Switch and switchless plugs have a rating of 10 amperes, 125 volts; 5 amperes, 250 volts.

Packed 10 in a carton, 50 in a standard package.

Heater Cord Sets

No.	Per 100	Description	Wt., Lb. Std. Pkg.
HC630	\$65.00	With 6-Foot 3M Cycle Heater Cord with Switch Plug	23
HC630G	68.50	Same as No. HC630 Except has HG Handle Grip Attachment	26
HC633	50.00	6-Foot 3M Cycle Heater Cord with Switchless Plug	22
HC830	75.00	8-Foot 3M Cycle Heater Cord with Switch Plug	29
HC833	60.00	8-Foot 3M Cycle Heater Cord with Switchless Plug	25

Cube-Tap Cord Sets

No.	Per 100	Description	Wt., Lb. Std. Pkg.
HR0618	\$38.50	6-Foot No. 18 Rayon Cord	16
HR0918	45.00	9-Foot No. 18 Rayon Cord	18
HR1218	51.00	12-Foot No. 18 Rayon Cord	20
HR1518	57.50	15-Foot No. 18 Rayon Cord	24

When equipped with HG handle grip, add G to number and \$3.00 per list price per 100 sets or devices.

When equipped with HF cap, add \$1.50 per 100 sets.

When equipped with HRA or HRB caps, add \$5.95 per 100 sets.

Bryant Hemco Appliance Switch Plugs and Cord Switches

Listed by Underwriters' Laboratories, Inc.



No. HG



No. H280



No. H271

Packed 10 in a carton.

No.	Per 100	Description	Std. Pkg.	Wt., Lb. Std. Pkg.
HG	\$5.50	Handle Grip Attachment for Appliance Plugs	100	3
H280	24.50	Bakelite Switch Plug	50	11
H271	32.00	Bakelite Cord Switch, Single-Pole	50	5

Bryant Hemco Switchless Plugs



No. H250



No. H738



No. 738G



No. H966



No. 669

Packed 10 in a carton.

No.	Per 100	Description	Std. Pkg.	Wt., Lb. Std. Pkg.
H250	\$26.50	Bakelite Switchless Plug	100	16
H738	9.50	Bakelite Switchless Plug	100	16
H966	12.00	Bakelite Switchless Table Appliance Plug	100	11

H & H Heater Plugs

10 Amperes, 125 Volts; 5 Amperes, 250 Volts



No. 7762

Bakelite—With Spring Clips

No screws to lose or loosen on this plug. Sections are held together by spring clips which are self-adjusting to yanks, strains and temperature changes.



No. 7760

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7762	\$31.00	With Switch	25	100	21
7760	14.00	Switchless	25	100	14

Bakelite—Pony Size Composition—With Spring Clips



No. 7761



No. 7763

7761	\$12.00	Bakelite, Pony, Switchless	25	100	8
7763	14.00	Composition, Switchless	25	100	14

H & H Heater Cord Sets

With Strain Relief Plug

Listed as Standard by Underwriters' Laboratories, Inc.



No. 151

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
151	\$53.00	6 Feet Long, Switchless	10	50	23
152	64.00	8 Feet Long, Switchless	10	50	26
153	51.00	6 Feet Long, Pony, Switchless	10	50	21
156	62.00	8 Feet Long, Pony, Switchless	10	50	25

Nos. 151, 152 and 156 supplied with rubber cap at \$5.00 extra per 100.

H & H Heater Cord Sets

With Bakelite Switch Plug



No. 154

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
154	\$69.00	6 Feet Long, Switch	10	50	25
155	80.00	8 Feet Long, Switch	10	50	30

Supplied with rubber cap at \$5.00 extra per 100.

H & H Cube Tap Extension Cord Sets



No. 7790

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7790	\$38.50	6 Feet Long	10	50	16
7791	45.00	9 Feet Long	10	50	19
7937	51.00	12 Feet Long	10	50	22
7938	57.50	15 Feet Long	10	50	23

Hubbellock Devices

For High-Cycle Portable Equipment

These rugged devices break the circuit and seal it in a split second; the safest and most practical means of applying electrical current to industrial use.

The rugged contacts of the cap are machined from heavy brass stock and molded into special, impact-resisting bakelite supporting posts which absolutely prevents shifting out of alignment or bending or twisting, no matter how rough the usage. Positive polarity and ground connection is thus assured at all times under all conditions. The lock is positive with nothing to jam out-of-order and therefore allows no accidental breaking of current with consequent loss of production.

3-Wire Connectors

With Adjustable Cord Grip

10 Amperes, 250 Volts D.C.; 460 Volts A.C.
20 Amperes, 125 Volts A.C. or D.C.



No. 23002



No. 23005

Cadmium is standard finish.

If desired with ground shunt from contact to cover or casing, suffix letter G to number.

No.	Per 100	Description	Cable Diameter Inches	Car-ton	Std. Pkg.	Wt. Lb.
23002	\$350.00	Connector Body	.296 to .562	5	20	9
23005	225.00	Cap.	.296 to .562	5	20	8
23003	350.00	Connector Body	.406 to .625	5	20	9
23006	225.00	Cap.	.406 to .625	5	20	8
23009	365.00	Connector Body with 1/2" Female Pipe Thread		5	20	9
23016	237.00	Cap, 1/2" Female Pipe Thread		5	20	8

3-Wire Receptacles and Plates

10 Amperes, 250 Volts D.C.; 460 Volts A.C.
20 Amperes, 125 Volts A.C. or D.C.



No. 23000



Nos. 23000 and 23007 Assembled to Outlet Box

Receptacle and plate will fit FS and FD outlet boxes. Fits any single convenience outlet plate. Receptacle will also fit standard switch and outlet boxes.

Outlet box not supplied.

Cadmium is standard finish.

If desired grounded, suffix letter G to number.

No.	Per 100	Description	Cable Diameter Inches	Car-ton	Std. Pkg.	Wt. Lb.
23000	\$275.00	Bakelite Receptacle		5	20	8
23007	75.00	Cast Iron Plate with Lift Cover		5	20	13
23008	65.00	Cast Iron Plate without Lift Cover		5	20	10

4-Wire Receptacles and Plates

20 Amperes, 250 Volts D.C.; 30 Amperes, 600 Volts A.C.
3 Hp. 250 Volts D.C.; 5 Hp. 230 Volts A.C. 1-Phase
10 Hp. 230 Volts A.C. 2-Phase; 15 Hp. 460 Volts A.C. 3-Phase



No. 20403 Receptacle with No. 20416 Plate



No. 20403

Receptacle and plates will fit FS and FD outlet boxes.

Cadmium is standard finish.

Furnished grounded unless otherwise specified.

No.	Per 100	Description	Cable Diameter Inches	Car-ton	Std. Pkg.	Wt. Lb.
20403	\$425.00	Bakelite Receptacle		2	10	5
20416	75.00	Iron Plate, with Cover		2	10	9
20417	65.00	Iron Plate, without Cover		2	10	4

4-Wire Connectors and Caps

With Metal Adjustable Cord Grip

20 Amperes, 250 Volts D.C.; 30 Amperes, 600 Volts A.C.
3 Hp. 250 Volts D.C.; 5 Hp. 230 Volts A.C. 1-Phase
10 Hp. 230 Volts A.C. 2-Phase; 15 Hp. 460 Volts A.C. 3-Phase



No. 20415



No. 20414

No.	Per 100	Description	Cable Diameter Inches	Car-ton	Std. Pkg.	Wt. Lb.
20414	\$485.00	Connector Body	.400 to .750	2	10	10
20415	325.00	Cap.	.400 to .750	2	10	7

With Rubber Cord Grip



No. 21415



No. 21414

No.	Per 100	Description	Cable Diameter Inches	Car-ton	Std. Pkg.	Wt. Lb.
21414	\$485.00	Connector Body	.360 to .484	2	10	10
21415	325.00	Cap.	.360 to .484	2	10	7

Hubbell 10-Ampere Twist-Lock Devices

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

National Electric Code rules advise installation of polarized and grounded devices to protect the users of portable motor driven tools and equipment.

Positive protection against both electrical hazard and disconnection delays is provided by Twist-Lock Polarized Devices. Twist-Lock Devices never part in the middle of a job, no matter how hard the cord is yanked. A lock-fast connection is made by a twist of the cap.

All 3 and 4-wire Twist-Lock Devices are polarized by blades designed to engage correspondingly shaped slots in receptacles or connector bodies. Grounding blade is longer than others so as to make contact first and break last.

2-Wire Midget Cord Connectors



No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
Without Cord Grip—.375-Inch Cord Hole					
No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7460	\$60.00	Connector Complete	10	50	4
*7461	40.00	Connector Body Only	10	50	2 1/2
7462	20.00	Cap Only	10	50	1 1/4
7476	60.00	Connector Complete, Polarized	10	50	4
7477	20.00	Cap Only, Polarized	10	50	1 1/4

With Cord Grip—Clamp Spread .218-Inch to .312 Inch

Standard finish for cord grips is statuary bronze.

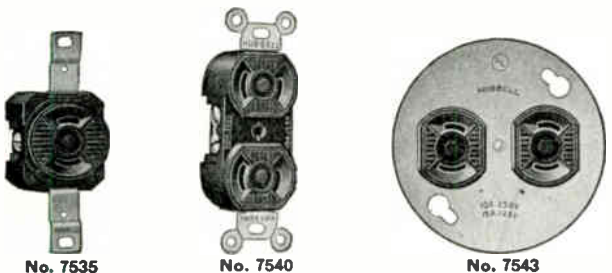
7463	\$72.00	Connector Complete	10	50	5
7464	46.00	Connector Body Only	10	50	3
7465	26.00	Cap Only	10	50	1 1/2
7478	72.00	Connector Complete, Polarized	10	50	5
7479	26.00	Cap Only, Polarized	10	50	1 1/2

2-Wire Midget Flush Motor Bases



No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7466	\$45.00	Male Base	10	50	3
7467	45.00	Male Base, Polarized	10	50	3
*7468	50.00	Female Base	10	50	3
7473	65.00	No. 7468 Receptacle on 3 1/4-Inch Steel Box Cover	10	50	6
*7471	55.00	Female Base, Covered Terminals without Cord Grips	10	50	3 1/2
*7472	65.00	Female Base, Covered Terminals with Cord Grips	10	50	4

2-Wire Receptacles



Standard finish of cover is cadmium.

Single					
No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
*7535	\$50.00	Bakelite Receptacle	10	50	8
*7536	60.00	Bake. Receptacle with 3 1/4" Cover	10	30	10
*7537	65.00	Bake Receptacle with 4" Cover	5	30	12
Duplex					
*7540	\$100.00	Bakelite Receptacle	10	50	14
*7543	110.00	Bake. Receptacle with 3 1/4" Cover	10	50	25
*7544	115.00	Bake. Receptacle with 4" Cover	5	30	15

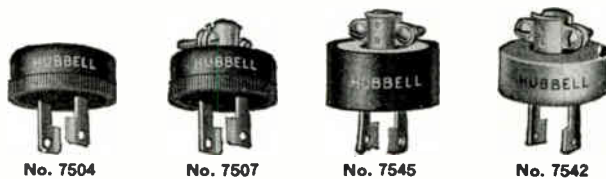
*Will accommodate both polarized and non-polarized caps.

2-Wire Bakelite Connector Bodies



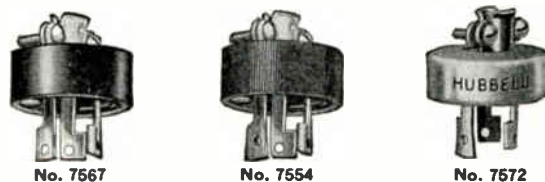
No.	Per 100	Description	Cord Diameter Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7503	\$50.00	Connector Body	.375	10	50	7
7506	60.00	Cord Grip Body	.296 to .562	10	50	7

2-Wire Plug Caps



No.	Per 100	Description	Cord Diameter Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7504	\$35.00	Bakelite	.375	10	50	6
7507	40.00	Bakelite, Cord Grip	.296 to .562	10	50	6
†7505	35.00	Bakelite	.375	10	50	6
†7508	40.00	Bakelite, Cord Grip	.296 to .562	10	50	6
7545	40.00	Rubber	.296 to .562	10	50	6
7546	40.00	Rubber	.406 to .625	10	50	6
†7547	40.00	Rubber	.296 to .562	10	50	6
†7548	40.00	Rubber	.406 to .625	10	50	6
7542	45.00	Armored	.296 to .562	10	50	7
7549	45.00	Armored	.406 to .625	10	50	7
†7548	45.00	Armored	.296 to .562	10	50	7
†7589	45.00	Armored	.406 to .625	10	50	7

3-Wire Polarized Caps



No.	Per 100	Description	Cord Diameter Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7567	\$70.00	Rubber	.296 to .562	10	50	6
7568	70.00	Rubber	.406 to .625	10	50	6
7554	70.00	Bakelite	.296 to .562	10	50	6
7558	70.00	Bakelite	.406 to .625	10	50	6
†7572	75.00	Metal Covered Comp.	.296 to .562	10	50	6
7573	75.00	Metal Covered Comp.	.406 to .625	10	50	6

†Polarized—one wide and one narrow blade.

Hubbell 10-Ampere Twist-Lock Devices

10 Amperes, 250 Volts; 15 Amperes, 125 Volts
Continued

**3-Wire Receptacles
Single**



No. 7582



Nos. 7583 and 7584

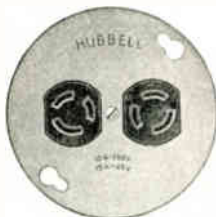
No. 7582 receptacle fits any standard single flush receptacle plate.

If desired grounded, suffix letter G to number.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.	Pkg. Lb.
7582	\$130.00	Bakelite Single Receptacle	10	50	9	
7583	140.00	Bakelite Single Receptacle with 3/4-Inch Cover	10	30	11	
7584	150.00	Bakelite Single Receptacle with 4-Inch Cover	5	30	13	



No. 7580



No. 7581

No. 7580 receptacle takes any standard duplex receptacle flush plate.

If desired grounded, suffix letter G to number.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.	Pkg. Lb.
7580	\$190.00	Bakelite Duplex Receptacle	10	50	11	
7581	210.00	Bakelite Duplex Receptacle with 4-Inch Cover	5	30	15	

3-Wire Bakelite Connector Bodies



No. 7555

If desired grounded, suffix letter G to number.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.	Pkg. Lb.
7555	\$120.00	Body	10	50	8	
7559	120.00	Body	10	50	8	

3-Wire Polarized Motor Plugs



No. 7556



No. 7557

Supporting screw holes are 1 1/16 inches on centers. Diameter of base, 1 1/2 inches. Height of No. 7556, 1 1/8 inches; No. 7557, 1 1/4 inches.

If desired grounded, suffix letter G to number.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.	Pkg. Lb.
7556	\$90.00	Bakelite, with Contact Blades	10	50	5	
7557	100.00	Bakelite, Female Flush Base	10	50	7	

Hubbell 20-Ampere Twist-Lock Devices

2-Wire Plug Caps
20 Amperes, 250 Volts



No. 9763



No. 7102



No. 7062

Rubber Cord Grip Caps

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.	Pkg. Lb.
9763	\$50.00	.296" to .562" Cord Hole	10	30	5	
*9764	50.00	.296" to .562" Cord Hole	10	30	5	
9765	50.00	.406" to .625" Cord Hole	10	30	5	
*9766	50.00	.406" to .625" Cord Hole	10	30	5	

Metal Covered Cord Grip Caps

7102	\$50.00	.296" to .562" Cord Hole	10	30	5	
*9102	50.00	.296" to .562" Cord Hole	10	30	5	
7238	50.00	.406" to .625" Cord Hole	10	30	5	
*9103	50.00	.406" to .625" Cord Hole	10	30	5	

Composition Caps

7062	\$40.00	.406" Cord Hole	10	50	7	
*7063	40.00	.406" Cord Hole	10	50	7	

2-Wire Flush Receptacles

20 Amperes, 250 Volts



No. 7210



Nos. 7216 and 7217

No. 7210 receptacle may be used with either polarized or non-polarized Twist-Lock Caps, and fits any standard single convenience outlet plate.

Standard finish of cover is cadmium.

7210	\$60.00	Single Receptacle, Porcelain	10	50	12	
7216	70.00	Single Receptacle, Porcelain, with 3/4-Inch Cover	10	50	25	
7217	75.00	Single Receptacle, Porcelain, with 4-Inch Cover	5	30	17	

2-Wire Porcelain Receptacles

20 Amperes, 250 Volts



7624	\$60.00	Receptacle	10	15	14	
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Appleton Type W Unilet with their No. 5681 Cover accommodates this receptacle. Mounting screws 3/32 inches. Diameter 1 1/4 inches. Height, 1 3/4 inches. Face diameter, 1 1/2 inches.

2-Wire Motor Plugs

20 Amperes, 250 Volts



No. 7191



No. 8809



Nos. 8808 and 9105

Bodies may be used with polarized or non-polarized bases. Nos. 9104 and 9105 have nickel plated metal container.

7191	\$40.00	Surface Base, Comp., Male	10	30	4	
*9104	40.00	Surface Base, Comp., Male	10	30	4	
8808	60.00	Flush Base, Male	10	30	6	
*9105	60.00	Flush Base, Male	10	30	4	
8809	90.00	Flush Base, Female	10	30	8	

*Polarized—one wide and one narrow blade.

Hubbell 20-Ampere Twist-Lock Devices

Continued

2-Wire Cord Grip Connector Bodies and Plugs

20 Amperes, 250 Volts



No. 7101



No. 7612

Made of bakelite. Steel covered, cadmium plated. Bodies may be used with either polarized or non-polarized caps.

No.	Per 100	Description	Cord Diam. Inches	Car-ton	Std. Pkg.	Wt. Lb.
7101	\$80.00	Body	.296 to .562	10	30	9
7224	80.00	Body	.406 to .625	10	30	9
7612	60.00	Screw Base Plug, 660 W., 250 V.		10	100	18

3-Wire Polarized Caps and Connectors

20 Amperes, 250 Volts, A.C. or D.C.; 10 Amperes, 575 Volts, A.C.



No. 9965



No. 7311



No. 7313

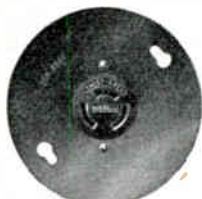
No.	Per 100	Description	Cord Diam. Inches	Car-ton	Std. Pkg.	Wt. Lb.
9965	\$110.00	Rubber	.437 to .750	10	30	8
7311	110.00	Composition, Armored	.437 to .750	10	30	8
7313	170.00	Bakelite Body	.437 to .750	10	30	11

3-Wire Flush Receptacles

20 Amperes, 250 Volts, A.C. or D.C.; 10 Amperes, 575 Volts A.C.



No. 7310



No. 7517

No. 7310 takes standard single outlet plate. No. 7502 requires 3-gang outlet box.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7310	\$150.00	Porcelain Receptacle	10	30	11
7517	170.00	Porcelain Receptacle with 4-Inch Box Cover Attached	5	20	13
7502	80.00	Two Outlet Brass Plate, .060"	5	10	5

3-Wire Conduit Box Receptacles

20 Amperes, 250 Volts



Designed for permanent grounding from one contact to conduit system.

Mounting screws 5/8-inch centers. Suitable for use with Crouse-Hinds W condulets and O cover, Appleton Electric Co. W unilets with No. 5680 cover, and Adalet Mfg. Co. fittings Nos. G2H, G3H and G4H.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7329	\$130.00	Porcelain Receptacle	10	30	10

Hubbell 20-Ampere Twist-Lock Devices

Continued

3-Wire Motor Plugs

20 Amperes, 250 Volts, A.C. or D.C.; 10 Amperes, 575 Volts, A.C.



No. 7318



No. 7327



No. 7328

Screw holes are spaced 120° apart on 1 1/4-inch radius for No. 8 screws.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7318	\$50.00	Surface Base, Comp., Male	10	30	6
7327	90.00	Flush Base in Casing, Male	10	30	13
7328	190.00	Flush Base, Female	10	30	10

4-Wire Polarized Caps and Connectors

20 Amperes, 250 Volts, A.C. or D.C.; 10 Amperes, 575 Volts A.C.



No. 9967



No. 7411



No. 7413

No.	Per 100	Description	Cord Diameter Inches	Car-ton	Std. Pkg.	Wt. Lb.
9967	\$150.00	Rubber	.437 to .750	10	20	9
7411	150.00	Composition, Armored	.437 to .750	10	20	8
7413	210.00	Bakelite Body	.437 to .750	10	20	11

4-Wire Flush Receptacles

20 Amperes, 250 Volts, A.C. or D.C.; 10 Amperes, 575 Volts A.C.



No. 7410



No. 7417

No. 7422 requires a 3-gang outlet box.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7410	\$190.00	Porcelain Receptacle	10	20	9
7417	200.00	Porcelain Receptacle with 4-Inch Box Cover Attached	5	15	10
7421	26.00	Single Brass Plate .060"	10	20	6
7422	80.00	Two Outlet Brass Plate .060"	5	10	5

4-Wire Motor Plugs

20 Amperes, 250 Volts, A.C. or D.C.; 10 Amperes, 575 Volts A.C.



No. 7415



No. 7408



No. 7409

Screw holes are spaced 90° apart.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7415	\$70.00	Surface Base, Comp., Male	10	20	7
7408	110.00	Flush Base in Casing, Male	10	20	10
7409	230.00	Flush Base, Female	10	20	9

Hubbell Seal-Tite Rubber Covers

Provide protection against breakage and moisture. Recommended for lock-fast connectors in packing plants, fire departments, breweries, distilleries, mines, bottling plants, dairies, tunnels and for general industrial requirements.

For Twist-Lock Connectors

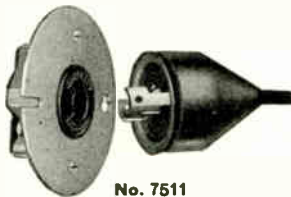


No. 7510

Number covers one-half only, and does not include connector, cap or wire. Two covers are required for each complete connector.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7510	\$30.00	For Nos. 7101 or 7102, 20A, 2-Wire.....	10	30	5
7521	30.00	Long Cover for No. 7101 when used with No. 7511, below.....	10	30	5
7530	50.00	For Nos. 7311 or 7313, 20A, 3-Wire.....	10	30	6½
7522	50.00	Long Cover for No. 7313, when used with No. 7531, below.....	10	30	5
7569	30.00	For Nos. 7554 or 7555, 10A, 3-Wire.....	10	30	5
7435	70.00	For Nos. 7411 or 7413, 20A, 4-Wire.....	10	20	4
7509	70.00	Long Cover for No. 7413 when used with No. 7541, below.....	10	20	4

For Twist-Lock Caps Used with Flush Receptacles



No. 7511

The No. 7511 rubber cover is slightly shorter than those listed above for cord connectors, and is designed for use with Twist-Lock Flush Receptacles with steel box covers attached or with standard brass flush plates.

7511	\$30.00	For No. 7102, 2-Wire Cap.....	10	30	4
7531	50.00	For No. 7311, 3-Wire Cap.....	10	30	5½
7541	70.00	For No. 7411, 4-Wire Cap.....	10	20	4

For Midget Twist-Lock Connectors

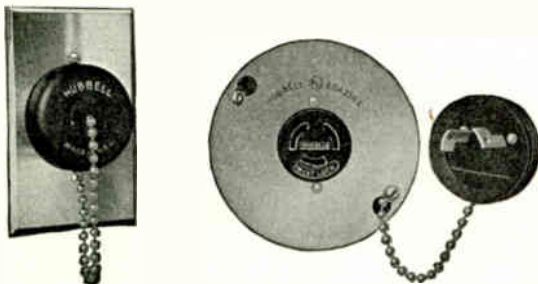


No. 7470 Assembled to No. 7463 Connector

Number covers one half only and does not include connector, cap or wire. Two are required for a complete cord connector.

7470	\$30.00	For Midget Connectors.....	10	30	3
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Hubbell Seal-Tite Rubber Closure Plugs For Twist-Lock Receptacles



This closure plug is made of high quality rubber and is designed to Seal-Tite Twist-Lock Flush Receptacles when not in use. Furnished complete with polished nickel chain.

7532	\$40.00	For 2-Wire 20 Amp. Receptacles..	10	20	3
7529	40.00	For 3-Wire 10 Amp. Receptacles..	10	20	3
7533	40.00	For 3-Wire 20 Amp. Receptacles..	10	20	3
7534	45.00	For 4-Wire 20 Amp. Receptacles..	10	20	3

Hubbell Twist-Tite Convenience Outlets

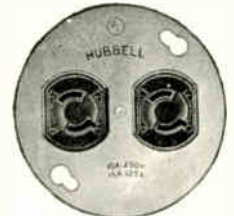
10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 9200



No. 9210



No. 9206

This convenience outlet takes standard parallel bladed caps. A regular cap is plugged in, twisted slightly to the right, and the Twist-Tite feature grips the cap tightly and holds it, preventing it from falling out.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
9200	\$32.00	Brown Bakelite, Duplex.....	10	100	25
9200-I	39.00	Ivoryine Bakelite, Duplex.....	10	50	13
9205	39.50	With ¾ Inch Box Cover, Duplex.....	10	50	20
9206	42.50	With 4 Inch Box Cover, Duplex.....	5	50	25
9210	24.50	Brown Bakelite, Single.....	10	100	20
9210-I	30.00	Ivoryine Bakelite, Single.....	10	50	11
9211	32.00	With ¾-Inch Box Cover, Single.....	10	100	40
9212	35.00	With 4-Inch Box Cover, Single..	5	50	23

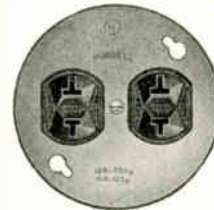
Hubbell Standard Grade Duplex Convenience Outlets

Side Wired—Double Binding Screws

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 9595



Nos. 7260 and 7137



No. 9595-I

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
9595	\$32.00	Bakelite, Wide Ears.....	10	100	26
9595-I	39.00	Ivoryine, Wide Ears.....	10	50	13
9575	32.00	Bakelite, Narrow Ears.....	10	100	25
7260	39.50	With ¾ Inch Cover.....	10	50	21
7137	42.50	With 4 Inch Cover.....	5	50	26

Side Wired—With Separate Feeds

Each Outlet: 10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 9573

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
9571	\$42.50	Bakelite, 2 Feeds, 1 Return....	10	100	24
9571-I	49.50	Ivoryine, 2 Feeds, 1 Return....	10	50	12
9573	42.50	Bakelite, 2 Feeds, 2 Returns...	10	100	24
9573-I	49.50	Ivoryine, 2 Feeds, 2 Returns....	10	50	12

One outlet can be wired to a switch for independent control of lamps, and the other outlet kept permanently alive at all times.

Hubbell Standard Grade Duplex Convenience Outlets

Top Wired—Double Binding Screws
10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 7626



No. 6257

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7626	\$42.50	Bakelite, Wide Ears.....	10	100	24
7626-I	49.50	Ivoryite, Wide Ears.....	10	50	13
7625	42.50	Bakelite, Narrow Ears.....	10	100	23

Side Wired

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 7590



Nos. 7135 and 7136



No. 5547

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7590	\$24.50	Bakelite, Wide Ears.....	10	100	20
7590-I	30.00	Ivoryite, Wide Ears.....	10	50	11
7550	24.50	Bakelite, Narrow Ears.....	10	100	18
7135	32.00	With 3/4-Inch Cover.....	10	100	40
7136	35.00	With 4-Inch Cover.....	5	50	23

Top Wired

5547	\$32.00	Black Porcelain, Wide Ears....	10	100	32
5850	32.00	Brown Composition, Wide Ears.	10	100	30

Hubbell Outdoor Flush Receptacles

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 7792



No. 7793



No. 7794

When not in use, the metal cap threads over the receptacle opening. When connected, the regular plug cap may be protected from the weather by the use of metal cover No. 7793. A rubber mat fitting under the plate completes the weatherproofing.

Exposed metal parts are cadmium plated brass to resist rust and corrosion.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7792	\$172.00	2-Wire, less No. 7793 Cover.....	2	10	7
7791	260.00	2-Wire, Duplex, With Plate.....	2	10	7
7790	202.50	2-Wire, Single, for FS Type Fittings.....	2	10	7
*7794	244.00	3-Wire, less No. 7793 Cover.....	2	10	7
7793	43.50	Metal Cap for Covering Regular Cap.....	2	10	1

*No. 6149 3-Wire cap should be used with No. 7794.

Hubbell Pilot Lamp Receptacles

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



Nos. 425 and 432



No. 427

Intermediate Base

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
425	\$106.00	With 125-Volt Lamp.....	10	30	6
426	48.00	Lamp Only, 125 Volts.....	10	30	1
431	141.00	Lamp Only, 250 Volts.....	10	30	1

Candelabra Base

432	\$106.00	With 125-Volt Lamp.....	10	30	6
433	30.00	Lamp Only, 125 Volts.....	10	30	2
434	141.00	Lamp Only, 250 Volts.....	10	30	2

Porcelain Candelabra Base

427	\$106.00	With 125-Volt Lamp.....	10	30	13
429	30.00	Lamp for No. 427.....	10	30	3
428	202.50	With 250-Volt Lamp.....	10	30	12
430	141.00	Lamp for No. 428.....	10	30	3

Hubbell Outlets and Pilot Lights

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

Light goes on when plug is inserted.
No. 433 lamp fits Nos. 7711 and 7712.



No. 7711

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7711	\$194.00	With Plate.....	2	10	7 1/2
7712	131.00	Receptacle Only.....	2	10	4
7713	63.00	.060" Brass Plate.....	2	10	4

Hubbell Switches and Pilot Lights

Single Pole and 3-Way: 10 Amperes, 125 Volts; 5 Amperes, 250 Volts
Double Pole: 10 Amperes, 250 Volts

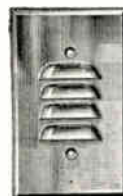
Nos. 426 and 431 lamps fit all these lights.



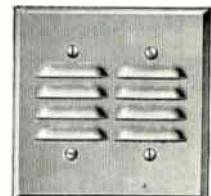
No. 7739

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7739	\$300.00	S. P. with .060" Plate.....	2	10	8
7956	300.00	D. P. with .060" Plate.....	2	10	12
7953	300.00	3-Way with .060" Plate.....	2	10	12

Hubbell Louvre Plates and Lighting Units



No. 7766

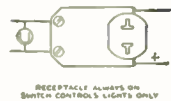


No. 7767

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7766	\$121.00	Single Gang, .040-In.....	5	30	6
7767	320.00	Lighting Unit, Brush Brass Plate.....	2	10	13
7768	350.00	Lighting Unit, White Enamel Plate.....	2	10	13

Hubbell Convenience Outlets and Switches

Switch Rating: 10 Amperes, 250 Volts
 Receptacle Rating: 10 Amperes, 250 Volts; 15 Amperes, 125 Volts



**Wiring Diagram Showing
 Variation of Control**



No. 8885

No.	Per 100	Description	Car-ton	Std. Wt. Pkg. Lb.
8885	\$187.00	S. P., with .060" Brass Plate.....	1	10 8
8886	163.50	S. P., without Plate.....	1	10 4
8891	187.00	S. P., with Bakelite Plate.....	1	10 8
8887	187.00	D. P., with .060" Brass Plate.....	1	10 8
8888	163.50	D. P., without Plate.....	1	10 4
8892	187.00	D. P., with Bakelite Plate.....	1	10 8

Separate Plates

8894	\$23.50	.060" Brush Brass Plate.....	2	10 4
8895	23.50	Sand Blast Bakelite Plate.....	2	10 3

Hubbell Fan Hanger Outlets

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 7710

No.	Per 100	Description	Car-ton	Std. Wt. Pkg. Lb.
7710	\$260.00	Yoke Support and .060" Plate.....	10	20 19
7714	260.00	Stud Support and .060" Plate.....	10	20 19

Hubbell Clock Hanger Outlets

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 7707

No.	Per 100	Description	Car-ton	Std. Wt. Pkg. Lb.
7707	\$151.00	2-Wire, .040" Plate..	2	10 5
7715	161.50	2-Wire, .060" Plate..	2	10 5
7708	247.00	3-Wire, .040" Plate..	2	10 6
7709	258.00	3-Wire, .060" Plate..	2	10 7

Hubbell Floor Outlets

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 7797

Two threaded solid brass covers are supplied—one for completely closing the outlet when not in use; the other, with cord hole and bushing.

No.	Per 100	Description	Car-ton	Std. Wt. Pkg. Lb.
7797	\$148.50	Bevel Edge, .060" Plate.....	2	10 8
7798	180.50	Square Edge, Solid Plate.....	2	10 8

Hubbell Round Flush Receptacles

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 7331



No. 7255

Tapped for 8x32 screws. Furnished with mounting bridges of various dimensions on special orders.

No.	Per 100	Description	Screw Hole Ctrs. In.	Diam. In.	Car-ton	Std. Wt. Pkg. Lb.
7331	\$31.00	Bakelite.....	1 3/4	1 1/16	10	50 8
5614	31.00	Porcelain.....	1 3/4	1 1/16	10	50 8
7255	31.00	Composition.....	1 5/8	1 1/16	10	50 7

No. 10108 Hubbell Polarized Round Flush Receptacles

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 10108

Tapped for 6x32 screws. Furnished with mounting bridges of various dimensions on special orders.

No.	Per 100	Description	Screw Hole Ctrs. In.	Diam. In.	Car-ton	Std. Wt. Pkg. Lb.
10108	\$42.50	Black Porcelain.....	1 5/8	1 1/16	10	30 5

**Hubbell 10-Ampere Porcelain Receptacles
 With Double T Slots**

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 5617



No. 5618

No.	Per 100	Description	Car-ton	Std. Wt. Pkg. Lb.
5617	\$51.00	Concealed Base, Screws, 1 1/2" Centers.....	10	50 18
5618	51.00	Cleat Base, Screws, 1 1/2" Centers.....	10	50 18



No. 5619



No. 5620

5619	\$51.00	Moulding Base, Screws, 1 1/8" Centers.....	10	50 18
5620	59.50	Fielding Base, Screws, 2 5/16" Centers.....	10	50 16



No. 5624



No. 7027

5624	\$47.00	Conduit Box Base, Screws, 5/8" Centers.....	10	50 13
7027	51.00	Outlet Box Receptacle.....	10	50 16

No. 5624 fits Appleton W Unilet and No. 5680 Cover, also fits Crouse-Hinds W Condulet.

Hubbell Pony Size Separable Attachment Plugs

All Bakelite—With Parallel Blades



Modernistic Design
660 Watts, 250 Volts

Brown is standard color, but black is available on special order at no advance in price.

No. 9012

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
9012	\$8.50	Plug, Complete	.375x.281	25	500	35
9013	5.00	Body		25	500	18
9010	3.50	Cap	.375x.281	25	500	22

Hubbell Standard Size Separable Attachment Plugs

Composition—With Parallel Blades

With Composition or Brass Covered Caps

660 Watts, 250 Volts



No. 5915

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
5915	\$21.00	Plug, Complete	.406	10	250	36
5917	11.50	Body		10	250	20
5964	9.50	Composition Cap	.406	10	250	19
5965	37.50	Brass Covered Cap	.406	10	250	24
6708	9.50	Composition Cap	.312	10	250	20

Hubbell Bakelite Attachment Plugs

With Double T Slots

660 Watts, 250 Volts



No. 5467



No. 5612

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
5467	\$56.00	Bakelite Plug, Complete	.406	10	100	18
5420	19.50	Cap, Tandem Blades	.406	10	100	6½
5612	36.50	Body, Double T Slots		10	100	11

No. 6293 Hubbell Weatherproof Plug Receptacles

With Double T Slots

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



Made of composition.

Carton, 10. Standard package, 30.

Weight per standard package, 9 pounds.

No. 6293.....per 100 \$91.50

Hubbell 10-Ampere Attachment Plug Caps With Parallel Blades

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

Pony Size—Bakelite



No. 9010



No. 9016



No. 9010-I



No. 9014



No. 5964



No. 6764

No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
9010	\$3.50	.375x.281	25	500	22
9016	3.50	.250	25	500	22

Pony Size—Ivoryine

No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
9010-I	\$5.00	.375x.281	25	100	7

Pony Size—Finger Grip—Bakelite

No. 9017 is polarized—one wide and one narrow blade.

No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
9014	\$5.00	.312	10	100	6
9017	6.00	.312	10	100	6

Standard Size—Composition

No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
5964	\$9.50	.406	10	250	19
6708	9.50	.312	10	250	20

Polarized—Standard Size—Composition

Polarized—one wide and one narrow blade.

No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
6764	\$11.00	.406	10	250	20

Hubbell 10-Ampere Attachment Plug Caps With Tandem Blades

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

Heavy Duty—Bakelite



No. 5420

No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
5420	\$19.50	.406	10	100	6½

Steel Covered—Finger Grip—Composition

This finger-grip cap has 1-inch extension to facilitate insertion and removal from the receptacle. Curved lip prevents undue wear on the cord at the point where it enters the cap.



No. 10057

No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
10057	\$50.00	.406	10	50	10

Hubbell T-Slot Plug Caps

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 6771



No. 6772



No. 7772

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
6771	\$37.50	Multiple, Tandem Blades	10	20	3
6772	34.00	Multiple, Parallel Blades	10	20	3
7772	34.00	Series, Parallel Blades	10	20	4

Hubbell Rubber Cord-Grip Attachment Plug Caps

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No.	Per 100	Description	Cord Diameter Inches	Car-ton	Std. Pkg.	Wt. Lb.
9752	\$35.00	Tandem Blades	.296 to .562	10	50	7
9753	35.00	Tandem Blades	.406 to .625	10	50	7
9754	35.00	Parallel Blades	.296 to .562	10	50	7
*9755	42.50	Parallel Blades	.296 to .562	10	50	7
9756	35.00	Parallel Blades	.406 to .625	10	50	7
*9757	42.50	Parallel Blades	.406 to .625	10	50	7
9759	53.00	Double T Blades	.296 to .562	10	50	7
9760	64.00	Double T Blades, Polarized	.296 to .562	10	50	7
9761	53.00	Double T Blades	.406 to .625	10	50	7
9762	64.00	Double T Blades, Polarized	.406 to .625	10	50	7

*Polarized—one wide and one narrow blade.

Hubbell Armored Cord-Grip Attachment Plug Caps

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



A special impact resisting composition cap, steel covered, cadmium plated.

No.	Per 100	Description	Cord Diameter Inches	Car-ton	Std. Pkg.	Wt. Lb.
7056	\$37.50	Tandem Blades	.296 to .562	10	50	7
7057	37.50	Parallel Blades	.296 to .562	10	50	7
*7059	45.00	Parallel Blades	.296 to .562	10	50	7
7183	37.50	Tandem Blades	.406 to .625	10	50	7
7184	37.50	Parallel Blades	.406 to .625	10	50	8
*7185	45.00	Parallel Blades	.406 to .625	10	50	8
9076	57.50	Tandem Blades, Angle	.500 to .625	10	50	9
9077	57.50	Parallel Blades, Angle	.500 to .625	10	50	9

*Polarized—one wide and one narrow blade.

Hubbell Attachment Plug Caps With Double T Blades

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No.	Per 100	Description	Cord Diameter Inches	Car-ton	Std. Pkg.	Wt. Lb.
7162	\$56.00	Armored, Composition	.296 to .562	10	30	5
7286	68.00	Armored, Polarized	.296 to .562	10	30	5
7196	50.00	Bakelite	.406	10	50	4

Hubbell Rubber Cord Connector Bodies

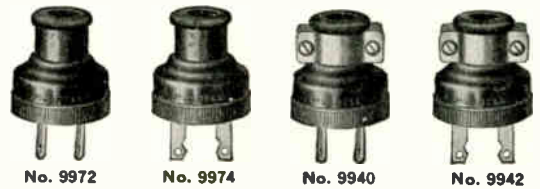
10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.
9952	\$39.50	Regular	.312 to .468	10	50	9
9954	39.50	Regular	.625	10	50	9
9953	48.00	With Cord Grip	.312 to .468	10	50	11
9955	48.00	With Cord Grip	.625	10	50	11

Hubbell Rubber Finger Grip Attachment Plug Caps

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.
9972	\$9.50	Parallel Blades	.312 to .437	25	100	8
*9973	11.50	Parallel Blades	.312 to .437	25	100	8
9934	9.50	Parallel Blades	.625	25	100	8
*9935	11.50	Parallel Blades	.625	25	100	8
9974	19.50	Tandem Blades	.312 to .437	25	100	8
9936	19.50	Tandem Blades	.625	25	100	8

With Cord Grip

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.
9940	\$17.00	Parallel Blades	.312 to .437	25	100	10
*9941	19.50	Parallel Blades	.312 to .437	25	100	10
9937	17.00	Parallel Blades	.625	25	100	10
*9938	19.50	Parallel Blades	.625	25	100	10
9942	27.50	Tandem Blades	.312 to .437	25	100	10
9939	27.50	Tandem Blades	.625	25	100	10

*Polarized—one wide and one narrow blade.

Hubbell Composition Cord Connector Bodies

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



Bodies with cord grip have steel covers, cadmium plated.

With Double T Slots—Composition

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.
5574	\$40.50	Regular	.406	10	50	8
7080	39.50	Regular	.312	10	50	8
7084	63.50	With Cord Grip	.296 to .562	10	50	11
7187	64.00	With Cord Grip	.406 to .625	10	50	11

With Parallel Slots—Bakelite

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.
Diameter of connector body, 1 1/8 inches; height, 1 3/8 inches.						
7430	\$12.34	Brown Conn. Body	.312	10	50	4
7431	3.50	Brown Cap	.281 to .375	25	500	18

Hubbell Small Size Flush Motor Plugs

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



Nos. 6808 and 9808 No. 9819 No. 6631 Nos. 6630 and 6979 Nos. 7257 and 7259

Screw holes spaced 1 3/4 inches. Diameter shell, 1 1/2 inches.

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.	Pkg.
6808	\$39.50	Male Base in Casing	.406	10	50	7	
*9808	40.50	Male Base in Casing	.406	10	50	7	
9819	51.00	Female Base	.406	10	50	7	
6631	16.00	Male Base		10	50	3	
6630	12.34	Body	.406	10	50	5	
6979	12.34	Body	.312	10	50	5	

*Polarized—one wide and one narrow blade.

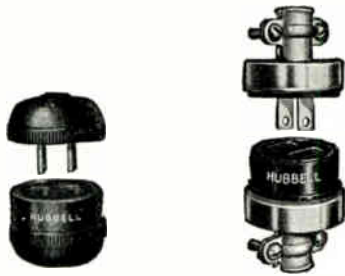
Polarized—Armored Cord Grip

These bodies fit Flush Motor Bases Nos. 6808 or 9808, listed above.

7257	\$56.00	Body	.406 to .625	10	50	8	
7259	56.00	Body	.296 to .406	10	50	8	

Hubbell Small Size Composition Cord Connectors

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



Nos. 6630 and 6181 Nos. 7257 and 7357

None of these small size devices interchange with standard parallel blade devices.

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.	Pkg.
6180	\$21.84	Plug, Complete	.406	10	50	7	
*6630	12.34	Body	.406	10	50	5	
6181	9.50	Cap, Complete	.406	10	50	3	
†9181	9.50	Cap	.406	10	50	3	
7257	56.00	Cord Grip Body	.406 to .625	10	50	8	
7357	37.50	Cord Grip Cap	.406 to .625	10	50	8	
†9357	37.50	Cord Grip Cap	.406 to .625	10	50	8	

*Takes either polarized or non-polarized caps.

†Polarized—one wide and one narrow blade.

No. 4896 Hubbell Standard Size Flush Motor Plugs

With Tandem Blades

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



This plug takes connector bodies Nos. 5574 and 7080.

Base is polished nickel brass casing has supporting screw holes spaced 2 1/8 inches on centers for No. 8 screws. Diameter of shells, 1 1/2 inches and depth, 1 1/2 inches.

Cord hole size, .406x.312 inch.

Carton, 10. Standard package, 50. Weight per standard package, 9 pounds.

No. 4896per 100 \$50.00

Hubbell Surface Motor Plugs

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



Nos. 6118 and 6823 Nos. 6822 and 7918 Nos. 5574 and 5896
Diameter base, 1 1/2 inches. Screw holes 1 inch on centers.

With Parallel Blades and Slots

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.	Pkg.
*6118	\$12.34	Body	.406	10	50	8	
6823	17.00	Base	.406x.312	10	50	4	

With Polarized Blades and Slots

Interchanges with No. 6822 body and No. 7330 base.							
6822	\$42.50	Body	.406	10	50	7	
7918	19.50	Base	.375	10	50	6	

With Double T Slots and Tandem Blades

5574	\$40.50	Body	.406	10	50	8	
7080	39.50	Body	.312	10	50	8	
5896	19.50	Base	.406x.312	10	50	4	

*Also takes No. 5964 cap.

Hubbell Polarized Attachment Plug Caps Without Cord Grip



Nos. 5567 No. 6730 Nos. 5553 and 6156 No. 6720

Standard finish on brass-covered caps is brush brass.

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No.	Per 100	Description	Cord Diam. In.	Car-ton	Std. Pkg.	Wt. Lb.	Pkg.
5567	\$71.50	Porcelain, Brass Covered	.406	10	30	5	
6730	42.50	Composition	.406	10	30	4	
20 Amperes, 250 Volts							
5553	\$77.50	Porcelain, Brass Covered	.500	10	30	6	
6156	79.50	Composition, Brass Covered	.500	10	30	6	
6720	51.00	Composition	.500	10	30	5	

Hubbell 2-Wire Polarized Attachment Plug Caps

With Cord Grip



Nos. 9970 and 9758 Nos. 7092 and 7058

Rubber Cord Grip
10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No.	Per 100	Cord Diameter Inches	Car-ton	Std. Pkg.	Wt. Lb.	Pkg.
9970	\$64.00	.296 to .562	10	30	5	
9971	64.00	.406 to .625	10	30	5	
20 Amperes, 250 Volts						
9758	76.50	.406 to .625	10	30	6	

Armored Composition Cord Grip
10 Amperes, 250 Volts; 15 Amperes, 125 Volts

7092	\$67.00	.296 to .562	10	30	5	
7241	67.00	.406 to .625	10	30	5	
20 Amperes, 250 Volts						
7058	79.50	.406 to .625	10	30	8	

Hubbell Polarized Flush Receptacles



Nos. 5566 and 5552



Nos. 7270 and 7272



No. 5566-1

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
5566	\$58.50	Black Porcelain	10	30	11
5566-B	58.50	Black Bakelite	10	30	7
5566-I	65.50	Ivoryine	10	30	7
*7270	67.00	Bakelite with 3 1/4-Inch Cover	10	30	18
7271	74.50	Bakelite with 4-Inch Cover	5	30	20

20 Amperes, 250 Volts

5552	\$106.00	Black Porcelain	10	30	11
5552-B	106.00	Black Bakelite	10	30	7
5552-I	113.00	Ivoryine	10	30	7
*7272	113.50	Bakelite with 3 1/4-Inch Cover	10	30	18
7273	121.00	Bakelite with 4-Inch Cover	5	30	20

*These receptacles will readily fit 3 1/4-inch outlet boxes when only one box connector is used. When two or more box connectors are needed the receptacles with 4-inch covers are required.

Hubbell Polarized Wall Receptacles Concealed and Cleat Base



Nos. 5885 and 5621



Nos. 5886 and 5622

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
5885	\$68.00	Concealed Base, Screw Holes Spaced 1 17/32 Inches	10	30	11
5886	68.00	Cleat Base, Screw Holes Spaced 1 13/32 Inches	10	30	14
20 Amperes, 250 Volts					
5621	\$85.00	Concealed Base, Screw Holes Spaced 1 1/8 Inches	10	30	14
5622	85.00	Cleat Base, Screw Holes Spaced 1 25/32 Inches	10	30	15

Moulding and Conduit Box Base



Nos. 5887 and 5623



No. 5757

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

5887	\$76.50	Moulding Base, Screw Holes Spaced 1 1/8 Inches	10	30	12
20 Amperes, 250 Volts					
5623	\$93.50	Moulding Base, Screw Holes Spaced 1 1/2 Inches	10	30	15
5757	85.00	Conduit Box Base, Screw Holes Spaced 5/8 Inch	10	30	12

Hubbell Polarized Composition Cord Connectors

With Cord Grip

Caps are steel covered, cadmium plated.

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No.	Per 100	Description	Cord Diameter Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7091	\$92.50	Body	.296 to .562	10	30	9
7092	67.00	Cap	.296 to .562	10	30	5
7240	92.50	Body	.406 to .625	10	30	8
7241	67.00	Cap	.406 to .625	10	30	5

20 Amperes, 250 Volts

7086	\$106.00	Body	.406 to .625	10	30	10
7058	79.50	Cap	.406 to .625	10	30	8

Hubbell 30-Ampere 2-Wire Polarized Flush Receptacles and Caps

30 Amperes, 250 Volts

Single Gang Size



No. 7436



No. 7437

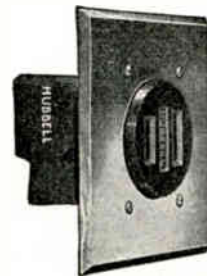


No. 7438

The face diameter of No. 7438 is larger than standard and requires the special plate No. 7439. The outside diameter of the cap is such that it will not fit when used in a two-gang installation of No. 7438 receptacles.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7436	\$159.00	Cord Grip Cap, .625" to 1.000" Cord Hole	5	30	15
7437	74.50	Composition Cap, .656" Cord Hole	5	30	20
7438	141.00	Composition Face Porcelain Receptacle	10	30	16
7439	23.50	.040" Brush Brass Plate	10	30	6

Two-Gang Size



Nos. 7070, 7071 and 7072

Supporting lugs have mounting holes spaced to fit standard 2-gang outlet boxes 2 inches deep or over. Standard finish is brush brass.

7070	\$318.00	Black Porcelain Receptacle	1	5	7
7071	156.00	Black Porcelain Cap, .718" Cord Hole	1	5	2
7127	191.00	Metal Covered Cord Grip Cap, Cord Hole, .625" to 1.000"	1	5	4
7072	117.00	.060" Brass Plate, 4 1/2 x 4 1/8"	1	5	2
*7116	132.50	.100" Brass Plate, 5 1/2" Square	1	5	2

*Extra large plate for covering irregularities in plaster.

Hubbell 3-Wire Polarized Flush Receptacles



Nos. 6051 and 6810



Nos. 7275 and 7277

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No. 7189 has same design as No. 6051 but has ground shunt from one terminal to the back supporting strap.

No. 9051 can be supplied grounded by suffixing letter G to number.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
6051	\$115.00	Composition	10	50	18
7189	115.00	Composition, Grounded	10	50	19
9051	115.00	Porcelain	10	50	20
7607	126.50	Composition, with 3 1/4-Inch Cover	10	50	20
7275	128.00	Porcelain, with 4-Inch Cover	5	50	30

20 Amperes, 250 Volts

6810	\$127.00	Porcelain	10	30	13
7277	140.00	Porcelain, with 4-Inch Cover	5	30	24

If desired grounded, suffix letter G to number.

Hubbell 3-Wire Polarized Flush Receptacles

With Close Mounting Strap

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 7214

Screw holes, 1 3/4 inches on centers, tapped for 8x32 screws.

Fits in 1 1/2-inch diameter hole.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7214	\$87.00	Composition, Grounded, 2 Binding Screws	10	30	5
7215	87.00	Composition, Not Grounded, 3 Binding Screws	10	30	7

Hubbell 3-Wire Polarized Duplex Receptacles

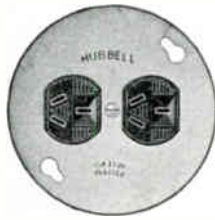
10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 7051



No. 7051-I



No. 7208

If desired with ground shunt, suffix letter G to number.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7051	\$168.00	Black Bakelite	10	30	12
7051-I	175.00	Ivory	10	30	12
7208	176.00	Black Bakelite with 4-Inch Cover	5	30	21

Hubbell Combination 3-Wire and Double T-Slot Receptacles

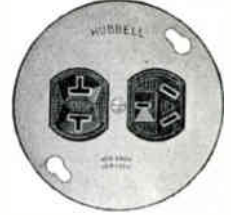
Each Outlet Rated: 10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 7053



No. 7053-I



No. 7333

Fit standard duplex receptacle plates and standard switch boxes.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7053	\$150.00	Black Bakelite, Each Outlet Wired Independently	10	30	12
7053-I	157.00	Ivory, Same as No. 7053	10	30	12
7333	158.00	Same as No. 7053, with 4-Inch Cover	5	30	21
7054	150.00	Black Bakelite, Arranged With One Feed and One Return Common to Both Outlets; 3-Wire End Permanently Grounded to Supporting Strap	10	30	12
7054-I	157.00	Ivory, Same as No. 7054	10	30	12
7334	158.00	Same as No. 7054, with 4-Inch Cover	5	30	21
7064	150.00	Black Bakelite, Arranged With One Feed and One Return Common to Both Outlets; Grounding Terminal 3-Wire End Equipped With Binding Screw	10	30	12
7064-I	157.00	Ivory, Same as No. 7064	10	30	12
7335	158.00	Same as No. 7064, on 4-Inch Cover	5	30	21

Hubbell 3-Wire Porcelain Polarized Receptacles



No. 6047

Screw holes, 1 3/4 inches on centers. Outside diameter of base, 2 1/2 inches.

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
6047	\$79.50	Concealed	10	50	22
6059	102.00	Concealed	10	30	16

Hubbell 2 to 3-Wire Composition Plug Adapters

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 7052



No. 9052-L

Third blade grounded by use of a binding post at side of body. Wire is led to flush plate screws.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7052	\$54.00	Tandem Blades	10	30	6
9052	54.00	Parallel Blades	10	30	6
7052-L	58.00	Tandem Blades with Ground Wire	10	30	7
9052-L	58.00	Parallel Blades with Ground Wire	10	30	7

Hubbell 3-Wire Polarized Attachment Plug Caps

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

Finger-Grip



No. 10056



No. 9975

This finger grip cap has extensions to facilitate insertion and removal from the receptacle.

If No. 10056 is desired grounded, suffix letter G to number. Cap is cadmium finished.

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.
10056	\$71.50	Armored, Composition....	.406	10	50	10
9975	34.00	All Rubber.....	.312 to .468	10	50	6

Regular



Nos. 6149 and 7252



No. 6150

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.
6149	\$34.00	Bakelite.....	.437	10	50	5
7252	34.00	Bakelite.....	.250	10	50	6
6150	55.50	Brass Covered Comp.....	.437	10	50	6

If desired grounded, suffix letter G to number.

**Armored Cord Grip
Cadmium Plated**



No. 7055



No. 7089

If desired grounded, suffix letter G to number.

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.
7055	\$60.00	Armored.....	.296 to .562	10	50	8
7309	60.00	Armored.....	.406 to .625	10	50	8
20 Amperes, 250 Volts						
7089	101.00	Armored.....	.406 to .625	10	20	9

Rubber Cord Grip



No. 9750



No. 9977

If desired grounded, suffix letter G to number.

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.
9750	\$60.00	Rubber.....	.296 to .562	10	50	8
9751	60.00	Rubber.....	.406 to .625	10	50	8
20 Amperes, 250 Volts						
9977	95.50	Rubber.....	.406 to .625	10	20	5

Hubbell 3-Wire Indestructible Polarized Rubber Cord Connectors

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 9409



No. 9975



No. 9410



No. 9413

Roll-back handle section of body, easily detached and attached for wiring.

Self-aligning phosphor bronze contact springs. Brass contact blades securely riveted to specially designed brass inserts which are moulded solidly into rubber body of cap.

Without Cord Grip

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.
9409	\$71.50	Body.....	.312 to .468	10	50	10
9411	71.50	Body.....	.625	10	50	10
9975	34.00	Cap.....	.312 to .468	10	50	6
9976	34.00	Cap.....	.625	10	50	6

With Cord Grip

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.
9410	\$79.50	Body.....	.312 to .468	10	50	11
9412	79.50	Body.....	.625	10	50	11
9413	41.50	Cap.....	.312 to .468	10	50	7
9414	41.50	Cap.....	.625	10	50	7

Hubbell 3-Wire Polarized Cord Connectors



No. 6409



No. 6149



No. 7082



No. 7055

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.
6409	\$71.50	Body, Composition.....	.437	10	50	12
6149	34.00	Cap, Bakelite.....	.437	10	50	5
7252	34.00	Cap, Bakelite.....	.250	10	50	6

Armored—With Cord Grip

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

Cap is steel covered, cadmium plated. If desired grounded, suffix letter G to number.

No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lb.
7082	\$98.50	Body, Composition.....	.296 to .562	10	50	13
7055	60.00	Cap, Composition..	.296 to .562	10	50	8
7308	100.00	Body, Composition.....	.406 to .625	10	50	8
7309	60.00	Cap, Composition..	.406 to .625	10	50	8
20 Amperes, 250 Volts						
7088	\$156.00	Body, Composition.....	.406 to .625	10	20	9
7089	101.00	Cap, Composition..	.406 to .625	10	20	9

Hubbell 3-Wire Polarized Cord Connectors

With Cord Grip

30 Amperes, 250 Volts



No. 7113



No. 7283

No.	Per 100	Description	Cord Diameter Inches	Car-ton	Std. Pkg.	Wt. Lb.
7283	\$386.00	Composition Body.....	.625 to 1.000	1	5	5
7113	152.00	Armored Cap.....	.625 to 1.000	1	5	5

Hubbell 3-Wire Polarized Surface Receptacles



No. 9306



No. 9307

50 Amperes, 250 Volts

Nos. 7513, 7520, 9304 and 9305 caps with ground contacts removed may be used with this receptacle.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
9306	\$106.00	All Porcelain	2	10	10

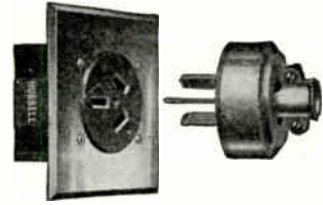
30 Amperes, 250 Volts

Nos. 7113 and 7514 caps fit this receptacle.

9307	\$165.50	All Composition	2	10	7
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Hubbell 3-Wire Flush Receptacles

30 Amperes, 250 Volts



Nos. 7112, 7113 and 7114

No. 7112 fits standard 2-gang box 2 inches deep or over, as listed below. If desired grounded, suffix letter G to number.

Nos. 7113 and 7514 are composition, steel covered, cadmium plated with adjustable cord grip, .625 to 1.000-inch. No. 7114 is standard 2-gang size. Finished in brush brass.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7112	\$430.00	Black Porcelain Receptacle	1	5	8
7113	152.00	Cord Grip Cap	1	5	5
7514	152.00	Grounded Cord Grip Cap	1	5	4
7114	100.00	.060-Inch Brass Plate	1	5	2
7115	114.00	.100-Inch Brass Plate, 5½ Inches Square	1	5	3

Hubbell 4-Wire Polarized Flush Receptacles and Cord Grip Caps

20 Amperes, 250 Volts



No. 7250



No. 7279



No. 7251



No. 9951

Takes standard single outlet plates. Gang plates must be of special size.

No. 9251 has shunt from ground blade to metal cover for grounding to metal-sheathed 3-wire cable.

If No. 7250 or 7279 is desired grounded, suffix letter G to number.

No.	Per 100	Description	Cord Diameter Inches	Car-ton	Std. Pkg.	Wt. Lb.
7250	\$156.00	Composition Receptacle		10	20	8
7279	170.00	Receptacle on 4-Inch Cover			5	20 13
7251	121.00	Metal Covered Cap	.437 to .750	10	20	6
9251	134.00	Grounded Metal Covered Cap	.437 to .750	10	20	5
9951	120.00	Rubber Cap	.437 to .750	10	20	5

With Soldering Terminals

50 Amperes, 250 Volts



No. 7512



No. 7513



No. 7114

If Nos. 7512, 7513 and 7520 are desired grounded, suffix letter G to number.

No. 7114 is standard 2-gang size. Finished in brush brass.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7512	\$500.00	Porcelain Receptacle	1	5	7
7513	182.00	Cord Grip Cap, .875 to 1.218-Inch	1	5	5
7520	182.00	Cord Grip Cap, .625 to .937-Inch	1	5	6
7114	100.00	.060-Inch Brass Plate	1	5	2
7115	114.00	.100-Inch Brass Plate, 5½ Inches Square	1	5	3

Suitable Fittings for Nos. 7112 and 7512 Receptacles

APPLETON ELECTRIC Co.—19025, 19026, 19010, 19011 Boxes. GSC-2 Cover on GSB-2 Box. 8486 Cover on 4-SJ-½, 4-SJD-½, 4-SJD¾, 4-SJD-1 Boxes. 8469 and 8469-A Covers on 4-S-½, 4-S-¾ and 4-S Special Boxes. 14097 Cover on Type FS2-gang Unilet fits 7070 only. 14098 Cover required for 7112 or 7512.

CROUSE-HINDS Co.—2-Gang FS Series Condulets. Covers for use with 7070 on these condulets are S-612—surface type. SS-612—flush type. Covers for use with 7112 or 7512 on these condulets are S-622—surface and SS-622—flush.

NATIONAL METAL MLDG. Co.—24K, 24KK and 24KL Covers on 2400, 2401, 2402, 2403, 2404, 2405 and 2410 Boxes. 25K Cover on 2500, 2501, 2514, 2515 and 2590 Boxes. 30C2 Cover on 3002 and 3012 Boxes. 4230 and 4231 Boxes.

TAPLET MFG. Co.—2-Gang FS Series Taplets. Hubbell Plate Nos. 7072 and 7114 will fit above Taplets.

GENERAL ELECTRIC Co.—SP52C17 and SP52C18 Covers on SP51151 and SP52151 4-inch Square Boxes. SP6751 Cover on SP6733 Box.

STEEL CITY ELECTRIC Co.—2GC Cover on 2G Box and Nos. 52C17, 52C18, 52C19 on 51151 and 52151 Boxes, and 72C18 Cover on 72171 Box.

THOMAS & BETTS.—32 (Box and Cover) and FD Tubelets.

Hubbell 4-Wire Polarized Cord Grip Cord Connectors

20 Amperes, 250 Volts



No. 7351



No. 7251

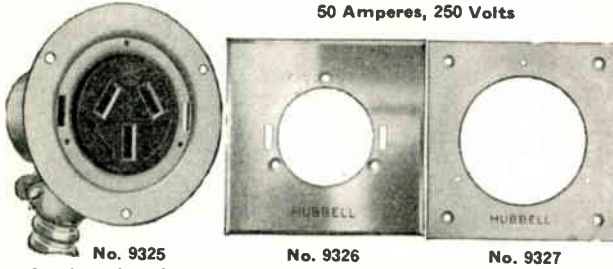


No. 9951

No.	Per 100	Description	Cord Diameter Inches	Car-ton	Std. Pkg.	Wt. Lb.
7351	\$191.00	Composition Body	.437 to .750	10	20	10
7251	121.00	Metal Covered Cap	.437 to .750	10	20	6
9251	134.00	Grounded Metal Covered Cap	.437 to .750	10	20	5
9951	120.00	Rubber Cap	.437 to .750	10	20	5

**Hubbell 50-Ampere 3-Wire Power Outlets
With Solderless Terminals**

50 Amperes, 250 Volts



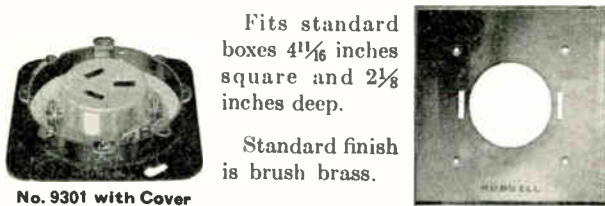
Designed to be mounted through a 3 1/8-inch hole. Receptacle body is of black bakelite. Regularly supplied with grounding slots through plate to accommodate caps with independent ground clips as on Nos. 7923, 7977, 7952, 9304 and 9305. Also takes all standard 50-ampere, 250-volt 3-wire caps without grounding clips. Receptacle has angle cable grip clamp which will accommodate BX, or other metal sheathed cable, or non-metallic cable measuring .750-inch to 1.187 inches. Diameter of flange is 4 5/8 inches. Maximum depth from underside of flange to bottom of cord clamp, with largest cable in place is 3 1/2 inches. Regularly supplied with three nickel plated wood screws. Specify No. 9325-G if receptacle is desired with one contact grounded to metal casing.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
9325	\$265.00	Bakelite Receptacle	2	10	13
9326	64.00	Stainless Steel Face Plate, Semi-Polished Finish	2	10	3
*9327	30.00	Steel Sub Plate, Cadmium Finish	2	10	3

*No. 9327 sub plate is equipped with an extra set of mounting holes and is for use under the face plate, where it may be necessary to cover up a carelessly cut hole in the plaster wall.

Hubbell 50-Ampere 3-Wire Receptacles

50 Amperes, 250 Volts



Fits standard boxes 4 1/8 inches square and 2 1/2 inches deep.

Standard finish is brush brass.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
9301	\$541.50	Receptacle with Box Cover	2	10	17
9302	121.00	Plate without Contact Slots, .060-In.	1	10	5
9303	151.00	Plate with Ground Slots and Springs, .060-In.	1	10	17
9309	75.50	Cadmium Steel Plate, 5 1/2 In. Sq. Ground Slots and Sprgs. .060-In.	2	10	5



Hubbell 3-Wire Composition Caps

50 Amperes, 250 Volts
Accommodates BX cables, cords, or flexible conduit, .950 to 1.125-inch inclusive. With ground clips.

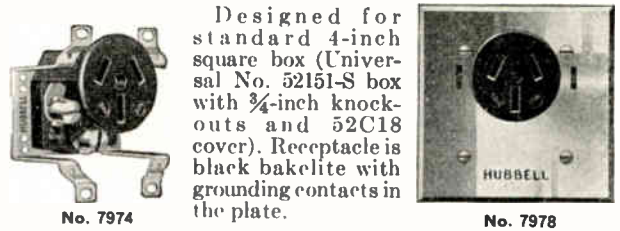


No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
9304	\$228.00	Angle	1	10	16
9305	212.00	Straight	1	10	17

30 Amperes, 250 Volts
Cord hole 0.750 inches.
9316 \$90.50 Black Composition 2 10 6

Hubbell 50-Ampere 3-Wire Range Receptacles

With Solderless Terminals
50 Amperes, 250 Volts



Designed for standard 4-inch square box (Universal No. 52151-S box with 3/4-inch knock-outs and 52C18 cover). Receptacle is black bakelite with grounding contacts in the plate.

Will accommodate No. 7952 Bakelite Range Cap or standard rubber connection cord sets.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7974	\$265.00	Receptacle Only	2	10	7
7978	329.00	Receptacle with .040-Inch Brush Brass Plate	2	10	10
7979	339.50	Receptacle with .060-Inch Brush Brass Plate	2	10	11
7975	64.00	.040-Inch Brush Brass Plate Only	2	10	3
7976	74.50	.060-Inch Brush Brass Plate Only	2	10	4

Hubbell Range Receptacle Fittings and Cord Sets

Nos. 7915, 7923, 7933 and 7929: 35 Amperes, 125 or 250 Volts
Others: 50 Amperes, 250 Volts



No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
Nos. 7911 and 7912		Couplings			
7911	\$64.50	Coupling for 3 No. 8 Wires	2	10	4
7912	75.00	Coupling for 3 No. 6 Wires	2	10	5
7914	343.50	38-Inch Rubber Cord Set, 2 No. 6 and 1 No. 8 Wires	2	10	21
7915	289.50	38-Inch Rubber Cord Set, 2 No. 8 and 1 No. 10 Wires	2	10	21
7916	407.50	38-In. Rubber Cord Set, 3 No. 6 Wires	2	10	24
7923	583.00	38-In. Armored BX Cable Cord Set, 3 No. 8 Wires	2	10	46
7924	689.00	38-Inch Armored BX Cable Cord Set, 3 No. 6 Wires	2	10	39
7933	230.00	36-Inch Rubber Cord Set, with Bakelite Cap, 2 No. 8 and 1 No. 10 Wires	2	10	20
7934	240.00	36-Inch Rubber Cord Set, with Bakelite Cap, 2 No. 6 and 1 No. 8 Wires	2	10	25
7928	530.00	38-Inch Rubber Cord Set with No. 7977 Cap, 4 No. 6 Wires	2	10	36
7929	477.00	38-Inch Rubber Cord Set, with No. 7977 Cap, 4 No. 8 Wires	2	10	28

**No. 7930 Hubbell 90° Angle Connectors
With Rubber Bushing**



This connector is for use with cord sets Nos. 7914, 7915, 7916, 7933 and 7934. Carton, 2. Standard package, 10. Weight per standard package, 3 pounds. No. 7930 per 100 \$64.00

Hubbell 50-Ampere 3-Wire Range Outlets

With Solderless Terminals

Double Screw Type
50 Amperes, 250 Volts



No. 7950



No. 7951



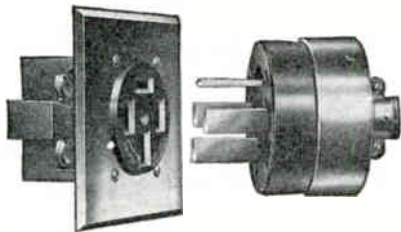
No. 7952

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
*7950	\$193.00	Black Bakelite Surface Receptacle.....	2	10	14
7951	43.00	Ground Strap for No. 7950.....	2	10	2
7952	228.00	Black Bakelite Range Cap.....	2	10	12

*When used with 1-inch conduits omit the clamps, and in its place use a regular conduit bushing and lock nuts.

Hubbell 60-Ampere 4-Wire Flush Receptacles

60 Amperes, 250 Volts



Nos. 7301, 7114 and 7303

Soldering lugs on Nos. 7301, 7302 and 7303 accommodate No. 4 wires. Nos. 7302 and 7303 caps are steel covered, cadmium plated, and accommodate cords up to 1.250-inch in diameter.

Standard finish, brush brass.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7301	\$642.50	Porcelain Receptacle.....	1	5	10
7302	353.00	Angle Cap.....	1	5	10
7303	321.50	Straight Cap.....	1	5	8
7114	100.00	.060-Inch Brass Plate, 4½x4¾ Inches.....	1	5	2
7115	114.00	.100-Inch Solid Brass Plate, 5½ Inches Square.....	1	5	3

Fittings Suitable for Use with No. 7301 Receptacles

ADALET MANUFACTURING Co.—HHE-605 combination box and cover, dead end or E type; HHC-605 combination box and cover, straight through or C type.

APPLETON ELECTRIC Co.—FS Series Unilets with 2-gang Unilet Extension and 14098 cover for surface or flush work; 48JD boxes with special 8489-A cover for exposed work.

CROUSE-HINDS Co.—FSC-32 conduit body with EXF-12 extension; S-622 surface type cover and SS-622 flush type cover.

STEEL CITY ELECTRIC Co.—0221 box with 0231 concealed cover and 0232 surface type cover.

TAPLET MANUFACTURING Co.—Taplet fitting with one ¼-inch hub, Type FDE22 with one 1-inch hub, Type FDE32. Taplet fitting with two ¼-inch hubs for straight through conduit wiring, Type FDC22 and with two 1-inch hubs for straight through conduit wiring, Type FDC32.

THOMAS & BETTS Co.—FD 2-gang Tubelets.

Hubbell Radio Outlets and Caps

Power Outlets: 15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 4193

Single Outlet

For Aerial and Ground

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
4193	\$42.50	Brown.....	2	10	1½
4193-I	48.00	Ivoryine.....	2	10	1½
4185	56.00	Brown, with No. 4190 Cap.....	2	10	2
4185-I	67.00	Ivoryine, with No. 4190-I Cap.....	2	10	2

Duplex Outlet

Radio and Power Connections

Divider plate separates aerial and ground from the power connections. Divider plate fits 1½, 2 and 2½-inch boxes.



No. 4189

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
4189	\$96.00	Brown.....	2	10	3
4189-I	103.00	Ivoryine.....	2	10	3
4188	109.50	Brown, with No. 4190 Cap.....	2	10	4
4188-I	122.00	Ivoryine, with No. 4190-I Cap.....	2	10	4

Radio Cap

One blade set at an angle to prevent insertion in power outlet. Cord hole size, .281x.375-inch.



No. 4190

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
4190	\$13.50	Brown.....	2	10	½
4190-I	19.00	Ivoryine.....	2	10	½

Duplex 3-Wire Outlet

Designed for V-Doublet Noise Reducing Antenna



No. 2189

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
2189	\$132.50	Brown.....	2	10	3
2189-I	139.50	Ivoryine.....	2	10	3
2187	149.50	Brown, with No. 2190 Cap.....	2	10	3½
2187-I	163.00	Ivoryine, with No. 2190-I Cap.....	2	10	3½

3-Wire Radio Cap

For use with No. 2189 3-wire outlet.



No. 2190

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
2190	\$17.00	Brown.....	2	10	½
2190-I	23.50	Ivoryine.....	2	10	½



Hubbell Acorn Wiring Devices

These Acorn Devices are designed and offered to meet competition, and priced accordingly. They should not be confused with the regular line of Hubbell Wiring Devices listed elsewhere.

Single and Duplex Receptacles
10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 9992



No. 9990

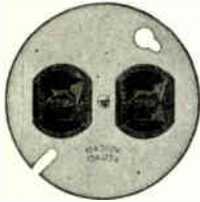


No. 9990-I

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
9992	\$8.50	Single, Bakelite	10	100	12
9992-I	13.50	Single, Ivorine	10	50	7
9990	10.50	Duplex, Bakelite	10	100	15
9990-I	14.50	Duplex, Ivorine	10	50	8

Flush Receptacles—On Box Covers

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



Nos. 9994 and 9995

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
9996	\$12.50	3 1/4-In., Single	10	100	30
9994	15.00	3 1/4-In., Duplex	10	50	16
9997	14.00	4-In., Single	5	50	21
9995	16.00	4-In., Duplex	5	50	20



No. 471 Clock Hanger Outlets

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

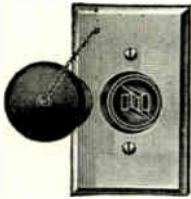
This outlet provides mechanical support and electrical connection for clocks. With .040-inch plate.

Carton, 10. Standard package, 30. Weight per standard package, 15 pounds.

No. 471.....per 100 \$70.00

No. 472 Outdoor Weatherproof Receptacles

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



This unit is complete with cap to close opening, plate, rubber mat and receptacle.

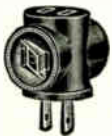
Carton, 10. Standard package, 30. Weight per standard package, 18 pounds.

No. 472.....per 100 \$120.00

Bakelite Current Taps



No. 469



No. 463



No. 464



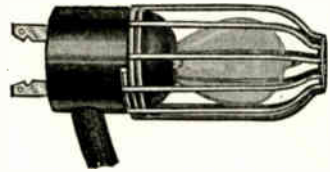
No. 465

10 Amperes, 260 Volts; 15 Amperes, 125 Volts

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
469	\$8.54	Cord Cube Tap	25	100	10
463	7.60	Cube Tap	25	100	10
660 Watts, 250 Volts					
464	\$10.50	2-Way Socket Tap	25	100	13
465	11.00	Double Current Tap	25	100	13

Hubbell Signalite Current Taps

10 Amperes, 125 Volts



No. 6109

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
6108	\$64.00	Without Lamp	10	10	4
6109	113.50	With 125-Volt Lamp	10	10	4
6101	50.00	125-Volt Red Lamp Only	10	10	1

Hubbell Pull Socket Te-Taps

Plug Outlets: 660 Watts, 250 Volts
Socket Outlets: 250 Watts, 250 Volts



No. 3190



No. 3191

Standard finish is brush brass.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
3190	\$144.50	With Medium Screw Base	10	10	5
3191	109.00	With 1/8-Inch Cap	10	10	4
3193	117.00	With 3/8-Inch Cap	10	10	4
3194	108.50	With Pendant Cap	10	10	4

No. 35024 Hubbell Pull Sockets

With Lamp Base
250 Watts, 250 Volts



Made with medium screw base. Equipped with 6 1/2 inches of pull chain.

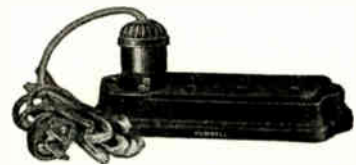
Standard finish is brush brass.

Carton, 10. Standard package, 10. Weight per standard package, 4 pounds.

No. 35024.....per 100 \$74.50

No. 6900 Hubbell Triplex Table Taps

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



With connector body, cap, and 8 feet of black cord. Carton, 1. Standard package, 5. Weight per standard package, 12 pounds.

No. 6900.....per 100 \$344.50

No. 5897 Hubbell Medium Screw Base Adapters

660 Watts, 250 Volts



A composition adapter with tandem blades. Carton, 10. Standard package, 50. Weight per standard package, 8 pounds.

No. 5897.....per 100 \$42.50

H & H Convenience Outlets

Brown Bakelite

Single, Side Wired

15 Amperes, 125 Volts; 10 Amperes, 250 Volts Pkg.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
1911	\$24.50	With Plaster Ears, T Slots..	10	100	14
7700	24.50	With Straight Ears, for Bakelite Tumbler Plates.....	10	100	13
7700-G	25.50	With Plaster Ears, for Bakelite Tumbler Plates.....	10	100	14

No. 1911

No. 1913 H & H Convenience Outlets

Brown Bakelite

Duplex, Side Wired

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Made with four screws, plaster ears, and T slots. Carton, 10. Standard package, 100. Weight per standard package, 19 pounds. No. 1913..... per 100 \$32.00

H & H Convenience Outlets

Brown Bakelite

2-Circuit, Duplex, 2 Feed Wires, Side Wired

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Made with plaster ears and T slots. One circuit or opening is usually left "Always On" for various appliances. Other circuit may be used for lamps controlled by a switch. Pkg.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
1914	\$42.50	1 Return, Common Negative.....	10	100	19
1915	42.50	2 Returns, Separate Negative.....	10	100	19

No. 7725 H & H Convenience Outlets

Brown Bakelite

Duplex, Top Wired

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Made with plaster ears and T slots. Carton, 10. Standard package, 100. Weight per standard package, 21 pounds. No. 7725..... per 100 \$42.50

H & H Convenience Outlets

Ivorylite

Single, Side Wired

15 Amperes, 125 Volts; 10 Amperes, 250 Volts Pkg.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
1911-I	\$30.00	With Plaster Ears, T Slots.	10	50	6
7700-I	30.00	With Straight Ears, for Ivorylite Tumbler Plates.	10	50	5
7700-GI	31.00	With Plaster Ears, for Ivorylite Tumbler Plates.	10	50	6

No. 1913-I H & H Convenience Outlets

Ivorylite

Duplex, Side Wired

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Made with four screws, plaster ears, and T slots. Carton 10. Standard package, 50. Weight per standard package, 9 pounds. No. 1913-I..... per 100 \$39.00

H & H Convenience Outlets

Ivorylite

2-Circuit, Duplex, 2 Feed Wires, Side Wired

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Made with plaster ears and T slots. One circuit or opening is usually left "Always On" for various appliances. Other circuit may be used for lamps controlled by a switch. Pkg.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
1914-I	\$49.50	1 Return Common Negative.	10	50	11
1915-I	49.50	2 Returns, Separate Negative	10	50	11

H & H Floor Outlets

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 7797

Made to plug in lamps or appliances without running long cords from the wall.

Made in two styles: bevel edge plate, .060-inch brass, and square edge solid brass plate where it is desired to make an absolutely flush job. Two threaded solid brass covers are supplied, one for completely closing the outlet when not in use; the other with cord hole and bushing to shield the plug cap when connected.

Receptacle is recessed so plug is sunk flush with the floor. Not waterproof, designed for hardwood floors or dry plates.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7797	\$148.50	With Bevel Edge Plate.....	2	10	8
7798	180.50	With Square Edge Plate.....	2	10	8

H & H Weatherproof Flush Receptacles

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 7792

A permanent, weatherproof outlet for plugging in outdoor lighting connections or appliances, also for inside installations exposed to moisture.

Cadmium finished .060-inch brass plate and cap. Will not rust or corrode. When not in use, a metal cap screws over the opening — when connected the regular cap may be covered with metal cap No. 7793. A rubber mat fitting under the plate, completes the weatherproofing.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7792	\$172.00	With Plate, 2-Wire.....	2	10	7
7780	485.00	2-Gang, with Plate, 2-Wire....	2	5	7
7796	244.00	*With Plate, 3-Wire.....	2	10	7
7793	43.50	Metal Cap.....	2	10	1

*Pony size cap must be used.

H & H All Round Convenience Outlets

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 5016



No. 5017

A neat, compact convenience outlet consisting of three parts: round galvanized box with clamp for 3/8-inch armored cable, single bakelite receptacle and brass cover plate, brass finish.

Diameter of box body, 1 1/2 inches; plate diameter, 2 1/2 inches; height overall, 2 1/2 inches including connector.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
5016	\$68.00	With Straight Connector.....	10	50	25
5017	68.00	With Angle Connector.....	10	50	25

H & H Convenience Outlets

For 3 1/4 and 4-Inch Boxes

Cadmium Finished Cover—T Slot Bakelite Receptacles

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 7007



No. 7008

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7006	\$32.00	Single, for 3 1/4-Inch Boxes.....	10	100	34
7007	35.00	Single, for 4-Inch Boxes.....	5	50	21
7049	39.50	Duplex, for 3 1/4-Inch Boxes.....	10	50	18
7008	42.50	Duplex, for 4-Inch Boxes.....	5	50	22

H & H Tumbler Switches and Receptacles

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 8974



No. 3975

This combination may be wired so the switch controls the receptacle or so that the receptacle is always on and the switch controls overhead lights.

With Double Pole Switch
10 Amperes, 250 Volts

No.	Per 100	Description	Plate	Car-ton	Std. Pkg.	Wt. Lb.	Pkg. Lb.
8998	\$187.00	Composition	.060" Brass	2	10	8	
3974	187.00	Composition	Bakelite	2	10	7	
8996	163.50	Composition	None	2	10	4	
8974	174.00	Porcelain	.060" Brass	2	10	8	
3975	174.00	Porcelain	Bakelite	2	10	7	
8973	150.50	Porcelain	None	2	10	4	
8997	23.50	.060" Brass Plate		2	10	3	
9043	23.50	Bakelite Plate		2	10	1	

With Double Pole Switch
20 Amperes, 250 Volts

1654	\$201.50	Composition	.060" Brass	2	10	8	
1653	178.00	Composition	None	2	10	4	

With Single Pole Switch
10 Amperes, 250 Volts

3918	\$187.00	Composition	.060" Brass	2	10	8	
3917	163.50	Composition	None	2	10	4	

2 Independent Circuits with Single Pole Switch
10 Amperes, 250 Volts

4198	\$182.50	Porcelain	.060" Brass	2	10	8	
4200	182.50	Porcelain	Bakelite	2	10	7	
4199	159.00	Porcelain	None	2	10	4	

H & H Tumbler Switches and Warning Lights

Jewel Flush with Plate

Single Pole and 3-Way, 10 Amperes, 125 Volts;
5 Amperes, 250 Volts

Double Pole, 10 Amperes, 250 Volts



No. 7759



No. 7739

Warning light shows at a glance when lights are left on in cellars, attics, closets, etc. The jewel is flush with the plate, thus eliminating lamp breakage. Intermediate base lamp is used.

Brass plates are .060-inch.

No.	Per 100	Description	Plate	Car-ton	Std. Pkg.	Wt. Lb.	Pkg. Lb.
7739	\$300.00	Single Pole	Brass	2	10	9	
7759	300.00	Single Pole	Bakelite	2	10	7	
7741	227.50	Single Pole	None	2	10	4	
7956	300.00	Double Pole	Brass	2	10	8	
7957	300.00	Double Pole	Bakelite	2	10	6	
7958	227.50	Double Pole	None	2	10	4	
7953	300.00	Three-Way	Brass	2	10	8	
7954	300.00	Three-Way	Bakelite	2	10	6	
7955	227.50	Three-Way	None	2	10	4	
7742	72.50	Brass Plate		2	10	3	
7744	72.50	Bakelite Plate		2	10	1	

H & H Clock Hanger Outlets

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 7707

A double service device providing mechanical support for the clock and electrical connection. Receptacle is recessed so the plug cap goes flush with the plate. This allows the clock to hang flat over the outlet, entirely covering it, with all wiring concealed. May be installed in a mantel for shelf clocks.

Standard plate finish is brush brass.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.	Pkg. Lb.
7707	\$151.00	2-Wire, with .040" Plate	2	10	5	
7707-C	161.50	2-Wire, with .060" Plate	2	10	6	
7708	247.00	3-Wire, with .040" *Plate	2	10	6	
7708-C	258.00	3-Wire, with .060" Plate	2	10	7	

*Fits Nos. 7440 and 7077 caps.

H & H Fan Hanger Outlets

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 7750

This outlet provides electrical connection and mechanical support for fans. It is easy to install and fits a standard 4-inch square box. Supports a weight many times greater than a fan. Two types are supplied: clamp type for the average job where the outlet fastens to the box cover, and the stud type where hickey fastens to the box stud.

Brush brass .060-inch plate standard on both types.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.	Pkg. Lb.
7750	\$260.00	Clamp Type, with Plate	10	20	13	
7751	260.00	Stud Type, with Plate	10	20	13	
7752	232.00	Clamp Type, without Plate	10	20	8	
7753	232.00	Stud Type, without Plate	10	20	8	
7755	28.00	Plate for Nos. 7752 and 7753	10	20	5	

No. 5350 H & H 2-Gang Units

Double Pole Switch, T Slot Receptacle and Warning Light Combination with .040-Inch Chromium Plate

Series, Switch Controls Outlet

T Slot Receptacle Rating: 15 Amps., 125 Volts; 10 Amps., 250 Volts
Double Pole Switch Rating: 20 Amps., 250 Volts



This combination is for heavy duty service to meet code requirements for a switch controlled outlet.

Suitable for modern appliances in kitchens, laundries, restaurants, etc.

Regularly supplied with .040-inch struck-up plates, which are included.

Polished chromium plate is standard. Brush Brass, Blendin, or Dull Chromium at the same price when specified.

Carton, 2. Standard package, 10. Weight per standard package, 12 pounds.

No. 5350..... per 100 \$392.50

H & H Warning Lights and Receptacles

Jewel Flush with Plate

15 Amperes, 125 Volts
10 Amperes, 250 Volts



No. 7728

This light gives a warning of current left on in toasters, percolators flat irons and other appliances.

Intermediate base lamp is standard.



No. 7711

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.	Pkg. Lb.
7728	\$194.00	With Bakelite Plate	2	10	7	
7711	194.00	With .060" Brass Plate	2	10	8	
7712	131.00	Without Plate	2	10	4	
7729	63.00	Bakelite Plate	2	10	2	
4179	63.00	.060" Brass Plate	2	10	3	

H & H Radio Outlets

Single

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 2147



No. 2147-I

For aerial and ground connections. Made of bakelite. Has slots and plug fingers set at an angle so that it is impossible to reverse aerial and ground.

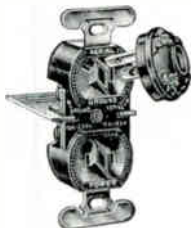
Carton, 2. Standard package, 10.

Brown Bakelite		Ivorylite		Description	Pkg. Wt. Lb.
No.	Per 100	No.	Per 100		
2147	\$56.00	2147-I	\$67.00	Receptacle and GH Cap.	2
2149	42.50	2149-I	48.00	Receptacle Only	2

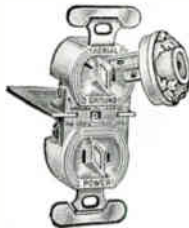
H & H Radio Outlets

Duplex

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 2145



No. 2145-I

For aerial, ground and power. Made of bakelite. Has slots and plug fingers set at an angle so that it is impossible to reverse aerial and ground.

Standard power outlet.

Carton, 2. Standard package, 10.

Brown Bakelite		Ivorylite		Description	Pkg. Wt. Lb.
No.	Per 100	No.	Per 100		
2145	\$109.50	2145-I	\$122.00	Receptacle and GH Cap.	4
2146	116.50	2146-I	135.00	Receptacle, GH Cap and Bakelite Plate	5
2144	96.00	2144-I	103.00	Receptacle Only	4

H & H Radio Outlet Caps



No. GH

Plug fingers are set at an angle so the cap cannot be inserted in a power outlet and it is impossible to reverse the aerial and ground when inserting.



No. GH-I

Carton, 2. Standard package, 10.

Brown Bakelite		Ivorylite		Description	Pkg. Wt. Lb.
No.	Per 100	No.	Per 100		
GH	\$13.50	GH-I	\$19.00	Radio Cap.	1/2

H & H 3-Wire Radio Outlets and Power Outlets

With 3-Wire Radio Cap

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 2189



No. GK

Carton, 2. Standard package, 10.

Brown Bakelite		Ivorylite		Description	Pkg. Wt. Lb.
No.	Per 100	No.	Per 100		
2187	\$149.50	2187-I	\$163.00	Receptacle and GK Cap.	3 1/2
2188	158.50	2188-I	178.00	Receptacle, Cap and Bakelite Plate	4 1/2
2189	132.50	2189-I	139.50	Receptacle Only	3
GK	17.00	GK-I	23.50	3-Wire Radio Cap	1/2

H & H Pull Current Taps

With Double Plug Outlet

660 Watts, 250 Volts



No. 7779



No. 7779-I

Pull chain controls lamp outlet. Multiple plug outlets are allowed on.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7779	\$24.00	Bakelite	10	100	18
7779-I	29.44	Ivorylite	10	100	18

H & H Bakelite Taps and Sockets



No. 7778



No. 7772



No. 7774



No. 7773

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7778	\$8.54	Cord Cube Tap, 15 A. 125 V., 10 A. 250 V.	25	100	8
7772	7.60	Cube Tap, 15 A, 125 V., 10 A, 250 V.	25	100	10
7774	11.00	Current Tap, 660 W. 250 V.	10	100	12
7773	10.50	2-Way Socket, 660 W. 250 V.	10	100	12

H & H Ivorylite Taps and Sockets



No. 7778-I



No. 7772-I



No. 7774-I



No. 7773-I

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7778-I	\$11.86	Cord Cube Tap, 15 A. 125 V., 10 A. 250 V.	25	100	8
7772-I	10.92	Cube Tap, 15 A. 125 V., 10 A. 250 V.	25	100	10
7774-I	16.50	Current Tap, 660 W. 250 V.	10	100	12
7773-I	16.50	2-Way Socket, 660 W. 250 V.	10	100	12

H & H Attachment Plug Bases

660 Watts, 250 Volts



No. 1901



No. 1900

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
1901	\$5.00	Bakelite, Pony	50	500	19
1900	8.50	No. 1901 with GA Cap	25	500	40
1438	5.00	Composition, Pony	50	500	33
1403	11.50	Composition, Standard	10	250	20

H & H Pony Size Attachment Plug Caps

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Parallel Blades



No. GA



No. GA-I



No. GR



No. GR-I

No.	Per 100	Cord Hole Inches	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
GA	\$3.50	9/32-3/8	(.281-.375) Bakelite	50	500	20
GA-I	5.00	9/32-3/8	(.281-.375) Ivorylite	25	500	19
GB	3.50	3/16-1/4	(.187-.250) Bakelite	50	500	20
GF	3.50	1/32	(.343) Bakelite	25	500	20
GD	3.50	13/32	(.406) Bakelite	50	500	20
GR	5.00	5/16	(.312) Bakelite, Pull Handle	25	100	5
GR-I	6.50	5/16	(.312) Ivorylite, Pull Handle	25	100	5

Composition



No. 1439



No. 7101

4235	\$3.50	5/16	(.312) For SJ Cord	50	500	30
1439	3.50	9/32-3/8	(.281-.375) For PO Cord	50	500	29
7035	3.50	13/32	(.406) For S Cord	50	500	29
7101	12.00	13/32	(.406) Armored, For S Cord	25	250	22



No. 4236

4236	\$34.00	5/16	(.312) Composition	10	50	7
4237	34.00	13/32	(.406) Composition	10	50	7

Armored Cord Grip

Fits Duplex Receptacles

H & H Pony Size Cord Connectors

Composition—Parallel Slots

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 7054



No. 3033

No.	Per 100	Cord Hole Inches	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7054	\$12.34	5/16	For 4235 Cap	10	50	5
7057	12.34	13/32	For 7035 Cap	10	50	5
3033	52.00	5/16	Armored Cord Grip	10	50	8

H & H Standard Size Double T Slot Bakelite Attachment Plugs

660 Watts, 250 Volts



No. 7051



BDT Cap

No.	Per 100	Cord Hole Inches	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7051	\$36.50	.....	Base	10	100	19
7052	56.00	13/32	Base and BDT Cap	10	100	23

H & H Standard Size Attachment Plug Caps

Parallel Blades

Bakelite



No. BA

No.	Per 100	Cord Hole Inches	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
BA	\$9.50	13/32	(.406) For S Cord	10	250	17



No. 1407

Composition

1401	\$9.50	13/32	(.406) Diam. 1 3/8"	10	250	19
1407	9.50	13/32	(.406) Diam. 1 1/2"	10	250	25
4234	9.50	1/2	(.500) Countersunk, for 3/8" Cord	10	250	25
1412	37.50	13/32	(.406) Brass Covered	10	250	25
1406	12.00	13/32	(.406) Steel Covered	10	250	25

H & H Standard Size Rubber Attachment Plug Caps

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Parallel Blades



No. GG



No. GN



No. GNL

No.	Per 100	Cord Hole Inches	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
GG	\$7.00	13/32	(.406) Standard	25	100	8
GN	7.00	5/16	(.312) Standard	25	100	8
GNL	7.00	13/32	(.343) Standard	25	100	8



7845	\$35.00	13/64-3/16	(.296-.562) Std., Parallel	10	50	7
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With Cord Grip

H & H Standard Size Caps

With Armored Cord Grip—Parallel Blades

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 7071



No. 4238



No. 7842



No. 4437



No. GL

No.	Per 100	Cord Hole Inches	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7071	\$34.00	13/32	For 3/8" Heater Cord	10	50	7
7072	34.00	13/32	For 1/2" Cord	10	50	7
7073	34.00	1/2	Countersunk, for 5/8" Cord	10	50	7
4238	37.50	13/32	Steel Covered	10	50	7
7842	37.50	5/16-3/16	Steel Covered	10	50	7
4435	45.00	5/16-3/16	Steel Covered, Polarized	10	50	7
4437	37.50	13/32-5/8	Steel Covered	10	50	7
4438	45.00	13/32-5/8	Steel Covered, Polarized	10	50	7
GL	35.00	13/32	Rubber	10	50	7

H & H Polarized Devices

2-Wire, 10 Amperes

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 7960



No. 7964



No. 7963



No. 7846



No. 7961



No. 7962

No. 7960 flush receptacle fits standard single convenience outlet plates.

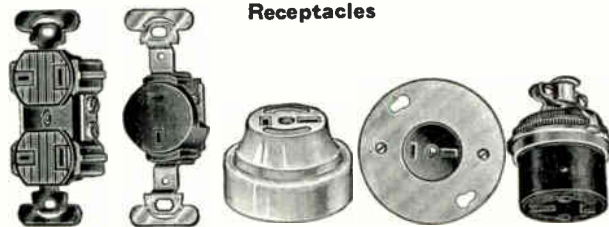
No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7960	\$58.50	Flush Receptacle, Bakelite.....	10	30	5
7964	67.00	Single, 3 1/4" Cover.....	10	30	10
7965	74.50	Single, 4" Cover.....	5	30	12
7963	42.50	Composition Cap, 1/8" Cord Hole.	10	30	4
7846	64.00	1/8-3/16" (.296-.562") Rubber, Cord Grip Cap.....	10	30	5
4427	64.00	1 3/32-5/8" (.406-.625") Rubber, Cord Grip Cap.....	10	30	5
7966	64.00	Armored Cord Grip Cap.....	10	30	6
7961	68.00	Cleat Base.....	10	30	11
7962	68.00	Concealed Base.....	10	30	10

2-Wire, 20 Amperes, 250 Volts Caps



No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7303	\$51.00	Composition, 3/16" (.562").....	10	30	4
7304	76.50	Armored Cord Grip, 3/16" (.562").....	10	30	6
7859	76.50	Bakelite, Cord Grip, 3/16" (.562").....	10	30	4
7847	79.50	Rubber, 5/8" (.625").....	10	30	6
7305	79.50	Brass Covered, 3/16" (.562").....	10	30	7
7380	113.50	Flush Motor, Screws Spaced 2 3/16" on Centers.....	10	30	8

Receptacles



No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
*7858	\$159.00	Single Circuit, Duplex, Bakelite.....	10	30	8
7860	167.00	Single Circuit, Duplex, 4" Cover.....	10	30	12
*7861	169.50	Double Circuit, Duplex, Bakelite.....	10	30	8
*7862	177.50	Double Circuit, Duplex, 4" Cover.....	10	30	12
†7089	106.00	Single, Bakelite.....	10	30	6
7306	85.00	Surface Cleat, Porcelain.....	10	30	14
†7307	85.00	Surface, Concealed, Porcelain..	10	30	14
7432	113.50	Single, 3 1/4" Cover.....	10	30	10
7433	121.00	Single, 4" Cover.....	5	30	21

Cadmium finished cover is standard for outlet box cover.

Cord Connectors

1/16-In. (.562") Cord Hole

7381	\$71.50	Composition, without Cord Grip	10	30	8
7434	100.00	Composition, with Cord Grip	10	30	11

*Takes two No. 7859 caps and standard duplex plate.

†Takes standard single convenience outlet plate.

‡Screw hole spacing, 1 1/2 inches.

H & H Polarized Devices

3-Wire, 10 Amperes

15 Amperes, 125 Volts; 10 Amperes, 250 Volts Caps



No. 7070



Nos. 7440 and 7077

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7070	\$34.00	Composition, 1 3/32" (.468").....	10	50	7
7440	34.00	Composition, Pony, 1 3/32" (.406")..	10	50	5
7077	37.00	Composition, Pony, 1/4" (.250")...	10	50	7
7457	34.00	Bakelite, Pony, 3/32" (.281").....	10	50	6

Cord Grip Caps



No. 7308



No. 4428



No. 7848

7308	\$54.00	Armored, 1 3/32" (.468").....	10	50	10
4428	60.00	Armored, 1 3/32-5/8" (.406-.625").....	10	50	8
7848	60.00	Rubber, 3/16" (.562").....	10	50	8
4429	60.00	Rubber, 1 3/32-5/8" (.406-.625").....	10	50	8



7309	\$78.50	Motor Plug Cap.....	10	50	10
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Flush Motor Plug Caps

Cord Connectors



No. 7312



No. 7313

7312	\$71.50	Body, 1 3/32" (.468").....	10	50	12
7313	92.50	Armored Cord Grip Body, 1 3/32" (.468").....	10	50	15
4430	100.00	Composition, Armored Cord Grip, 1 3/32-5/8" (.406-.625").....	10	50	8

Receptacles



No. 7310



No. 7442



No. 7053



No. 7443



No. 7445

7310	\$115.00	Single, Flush.....	10	50	16
7442	128.00	Single, 4" Cover.....	5	50	34
7053	176.00	Duplex, 4" Cover.....	5	30	14
7443	87.00	Round, with Ground.....	10	30	6
7444	87.00	Round, without Ground.....	10	30	6
7441	115.00	Single, with Ground Shunt.....	10	50	16
*7445	168.00	Duplex, Flush, Bakelite.....	10	30	12
7311	79.50	Surface Con. Porcelain Base.....	10	50	21

Flush receptacles take standard single and duplex plates. Two pony caps must be used for duplex receptacle. The diameter of the large caps is too great for two caps to fit together in the duplex receptacle.

*Will be supplied with ground shunt when specified. Add letter G to the number.

H & H Polarized Devices

3-Wire, 20 Amperes, 250 Volts

Caps



No. 7314



No. 7315



No. 7849

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7314	\$64.00	Composition, 5/8" (.625")	10	30	7
7315	98.00	Cord Grip, 5/8" (.625")	10	30	9
7849	95.50	Rubber, Cord Grip, 5/8" (.625")	10	20	5

Receptacles



No. 7316



No. 7456



No. 7317

*7316	\$127.00	Single, Flush	10	30	14
7456	140.00	Single, with 4" Cover	5	30	22
†7317	102.00	Single, Surface Concealed	10	30	14

Cord Connectors



No. 7318



No. 7319

7318	\$127.50	Composition, 5/8" (.625")	10	30	13
7319	156.00	Armored Cord Grip, 5/8" (.625")	10	30	16

Flush receptacle fits standard plates. Gang installations must have a blank unit between each receptacle because of the outside diameter of plug caps.

*Will be supplied with ground shunt when specified. Add letter G to the number.

†Screw hole spacing, 1 3/4 inches.

H & H Polarized Devices

3-Wire Range Cord Sets

Nos. 7914 and 7916: 50 Amperes, 250 Volts

No. 7915: 35 Amperes, 250 Volts



No. 7914

Made with rubber cap and cord. Stranded wires. Length, 38 inches. Sets longer than 38 inches will be supplied on special order. Prices upon request.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7914	\$343.50	2 No. 6 and 1 No. 8 Wires	2	10	22
7915	289.50	2 No. 8 and 1 No. 10 Wires	2	10	18
7916	407.50	3 No. 6 Wires	2	10	23

H & H Polarized Devices

3-Wire, 50 Amperes, 250 Volts

Bakelite Range Caps

A 90° angle cap for flush or surface range outlets. Has ground strap and built-in cable clamps, and solderless connections. For straight-in wiring.



No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7952	\$228.00	With 2-Screw Contacts	2	10	12

Bakelite Flush Range Outlets

With One-Screw Contacts

Has large contacts with knurled and slotted cap screw, designed for easy, straight-in wiring.

Designed for a 4 or 4 1/16-inch box with a regular 2-gang switch cover.



No. 7935

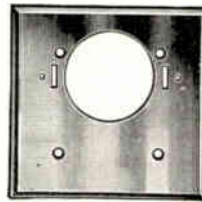
7935	\$265.00	Receptacle Only	2	10	7
7884	329.00	Receptacle, with .040" Brass Plate	2	10	10
7885	339.50	Receptacle, with .060" Brass Plate	2	10	11

Plates

For No. 7935 Flush Range Outlets

Dimensions: 4 1/2 inches high, 4 3/16 inches wide. Standard 2-gang size.

Standard finish brush brass. Special finishes available at additional cost.



No. 7988

7988	\$64.00	.040" Brass	2	10	3
7989	74.50	.060" Brass	2	10	4

Surface Range Outlets



Nos. 7950 and 7944



Nos. 7950-I and 7944-I

With built-in cable clamp interchangeable for back or bottom wiring. Has 3/4 and 1-inch knockouts.

7950	\$193.00	Bakelite, 2-Screw Contacts	2	10	12
7950-I	225.00	Ivorylite, 2-Screw Contacts	2	10	12
7944	193.00	Bakelite, 1-Screw Contacts	2	10	12
7944-I	225.00	Ivorylite, 1-Screw Contacts	2	10	12

H & H Range Outlet Accessories



No. 7951



No. 7912



No. 7985

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7951	\$43.00	Ground Straps for Nos. 7950 and 7944 Surface Range Outlets	2	10	2
7912	75.00	Couplings for 3 No. 8 or 3 No. 6 Wires	2	10	5
7985	64.00	3/4" Angle Connector for No. 7914 Range Cord Set	2	10	4
7986	64.00	3/4" Angle Connector for No. 7915 Range Cord Set	2	10	4



H & H Polarized Devices 3-Wire, 50 Amperes, 250 Volts

Caps—For Armored Cable



No. 7396



No. 7397

Supplied with spring reducer bushing for 8-3 A.B.C. cable when specified, at no extra charge.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7396	\$212.00	Straight	2	10	15
7397	228.00	90° Angle	2	10	16

Receptacles



No. 7398



No. 7738



No. 7402

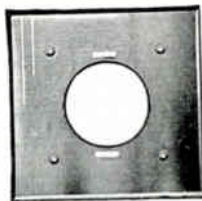
No. 7398 flush receptacle fits standard boxes $4\frac{1}{16}$ inches square and not less than $2\frac{3}{8}$ inches deep. Equipped with a plaster cover of special construction for use with standard boxes. Finished plate is $5\frac{1}{2}$ inches square, allowing an overhang over the box in order to make up for any irregularities in the plaster work.

No. 7738 receptacle for surface work is furnished with a galvanized box cover to fit standard boxes $4\frac{1}{16}$ inches square and not less than $2\frac{3}{8}$ inches deep.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7398	\$541.50	Flush, with Plaster Box Cover	2	10	17
7454	466.00	Flush, without Cover	2	10	9
7455	75.50	Plaster Box Cover	2	10	5
7738	617.00	With Surface Box Galv. Cover	2	10	21
*7402	106.00	Porcelain Surface	2	10	11

*Will fit SP 72C 102 cover for $4\frac{1}{16}$ -inch outlet box.

Plates



No. 7400

This plate is for use with the above receptacles. Size square, $5\frac{1}{2}$ inches.

Steel plate has straight edges and cadmium finish.

Standard finish on brass plates, brush brass. Special finishes available at an advance in price.

Prices upon request.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
7399	\$121.00	Solid Brass, without Ground Contacts	2	10	9
7400	151.00	Solid Brass, with Ground Contacts	2	10	9
7401	75.50	.060" Steel, with Ground Contacts	2	10	5

H & H Twist-Lock Devices 3-Wire, 30 Amperes Polarized Connectors

With Solderless Connections and Rubber Cable Grips
50 Amperes, 250 Volts D.C.; 30 Amperes, 600 Volts A.C.



No. XT-7384, Female Body



No. XT-7387, Male Cap

Not Grounded Female Bodies

No.	Per 100	Cable Diameter Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
XT-7336	\$500.00	.437 to .562	2	5	7
XT-7343	500.00	.562 to .687	2	5	7
XT-7390	500.00	.687 to .812	2	5	7
XT-7384	500.00	.812 to .937	2	5	7
XT-7396	500.00	.937 to 1.062	2	5	7

Male Caps

No.	Per 100	Cable Diameter Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
XT-7339	\$400.00	.437 to .562	2	5	5
XT-7346	400.00	.562 to .687	2	5	5
XT-7393	400.00	.687 to .812	2	5	5
XT-7387	400.00	.812 to .937	2	5	5
XT-7398	400.00	.937 to 1.062	2	5	5

*Grounded to Casing

Female Bodies

No.	Per 100	Cable Diameter Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
XT-7337	\$500.00	.437 to .562	2	5	7
XT-7344	500.00	.562 to .687	2	5	7
XT-7391	500.00	.687 to .812	2	5	7
XT-7385	500.00	.812 to .937	2	5	7
XT 7397	500.00	.937 to 1.062	2	5	7

Male Caps

No.	Per 100	Cable Diameter Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
XT-7340	\$400.00	.437 to .562	2	5	5
XT-7347	400.00	.562 to .687	2	5	5
XT-7394	400.00	.687 to .812	2	5	5
XT-7388	400.00	.812 to .937	2	5	5
XT-7399	400.00	.937 to 1.062	2	5	5

†With Equipment Ground

Female Bodies

No.	Per 100	Cable Diameter Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
XT-7338	\$525.00	.437 to .562	2	5	7
XT-7345	525.00	.562 to .687	2	5	7
XT-7392	525.00	.687 to .812	2	5	7
XT-7358	525.00	.812 to .937	2	5	7
XT-7386	525.00	.937 to 1.062	2	5	7

Male Caps

No.	Per 100	Cable Diameter Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
XT-7342	\$425.00	.437 to .562	2	5	5
XT-7348	425.00	.562 to .687	2	5	5
XT-7395	425.00	.687 to .812	2	5	5
XT-7359	425.00	.812 to .937	2	5	5
XT-7389	425.00	.937 to 1.062	2	5	5

*Grounded means that the long contact blade of the cap and the corresponding contact in the connector body and receptacle are electrically connected to the outer casing.

†Equipment ground means that none of the contacts are electrically connected to the shell, but there is an additional terminal for the fourth wire, which is connected electrically to the outer casing. This fourth wire is for equipment ground.

Relyon Wiring Devices



Flush Receptacles
With Outlet Box Cover
15 Amperes, 125 Volts
10 Amperes, 250 Volts

No. 251



No. 253
Pkg. Std. Wt. Car- ton Pkg. Lb.

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
251	\$12.50	Single, 3 1/4-Inch Cover.....	10	100	30
252	14.00	Single, 4-Inch Cover.....	10	50	21
253	15.00	Duplex, 3 1/4-Inch Cover.....	10	50	16
254	16.00	Duplex, 4-Inch Cover.....	10	50	22



Duplex Surface Convenience Outlets

15 Amperes, 125 Volts
10 Amperes, 250 Volts

No. 1917

1917	\$21.50	2-Piece, Bakelite.....	10	50	11
1917-I	36.00	2-Piece, Ivorylite.....	10	50	11



No. 1917-I



Duplex Convenience Outlet and Plate Units

15 Amperes, 125 Volts
10 Amperes, 250 Volts

No. 1916

Plate and outlet are molded together in one piece.

1916	\$26.00	1-Piece, Bakelite.....	10	50	10
1916-I	32.00	1-Piece, Ivorylite.....	10	50	10



No. 1916-I



Bakelite Heater Plugs

Screw Fastening

No. 460



No. 462

460	\$9.50	Switchless, 10A, 125V., 5A., 250V....	10	100	14
462	17.10	Switch, 6A. 125V., 3A., 250V.....	10	50	11

Relyon Convenience Outlets

Parallel Slots

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 311



No. 312



No. 311-I



No. 312-I

Type	Bakelite		Ivorylite		Car- ton	Std. Pkg.	Pkg. Wt. Lb.
	No.	Per 100	No.	Per 100			
Single	311	\$8.50	311-I	\$13.50	10	100	12
Duplex	312	10.50	312-I	14.50	10	100	16

FA Hanger Outlets

Combination of support and electrical connection in one unit, for hanger outlet service. Originally designed for fan hanger service, the outlet is also used with electric heaters, art pictures, show window spot lights, radio, and public address systems.

Hanger outlet is a permanent feature of the electrical system, built into the structure of the building at the same time as the rest of the equipment. Provides a safe, permanent and efficient outlet and eliminates unsightly and dangerous temporary means of support such as wall brackets, standards, shelves, and other makeshift arrangements.

Listed and approved by Underwriters' Laboratories.

Correct installation is to center outlet 7 1/2 feet from floor for 9 and 12-inch fans; 9 1/2 feet for 16-inch fans.

Packed 20 in a standard package.

Security Type

Consists of 4-inch square by 1 1/2-inch deep outlet box made of No. 14 gage galvanized steel and 1/2-inch deep raised box cover. Cover has special plaster keys to securely hold the plaster and prevent it from cracking around the outlet.

Box provides ample wiring space to serve as a junction box when two or more outlets are connected to the same circuit. Knockouts are provided for 1/2-inch and 3/4-inch conduit.

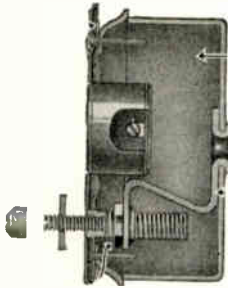
Heavy stamped steel hanger bracket is adjustably fastened to back of box. Bracket carries weight of fan and provides for plumbing and centering the face plate. Heavy brass adjusting tube threaded into the mounting bracket allows for variation in thickness of plaster.

Fan or other appliance is hung upon a 1/4-inch steel hanger bolt threaded into the brass tube and finished with a washer and screwdriver type cap-nut.

Face plate, 2 1/2 x 4 1/4 inches, is made of .060 brass with brushed finish. Special finishes available at extra cost.

T-slot type, brown bakelite receptacle is riveted to a steel sub-plate. This method of mounting permits the installation to be completed, except for mounting of the face plate, before the wall surface is finished, thus avoids marring the face plate. Approximate weight, 40 pounds.

Complete with Box and Cover..... each \$2.75



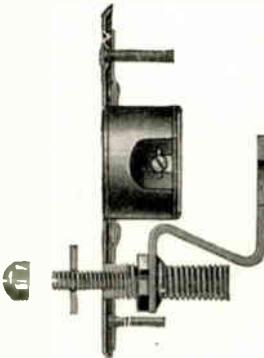
Fixture Stud Type

Similar in design to the Security Type, but the box, with cover and 3/8-inch fixture stud, must be furnished by the contractor. Any 4-inch square by 1 1/2-inch deep standardized outlet with 3/8-inch fixture stud securely fastened to it and 1/2-inch deep single gang cover can be used.

The ordinary type of switch box cannot be used.

Stamped steel adjustable hanger bracket has a cleared hole to fit the fixture stud. Two 3/8-inch lock nuts are included for fastening.

Approximate weight, 12 pounds.
Each..... \$2.44



Type FHSB

Same type of box and cover specified above must be supplied by the customer for Type FHSB.

Formed steel supporting frame is fastened to box cover, and fan or other appliance is attached to it. Receptacle is fastened directly to brass face plate.

This type carries the weight of appliance from box cover, not from back of box.

Approximate weight, 12 pounds.
Each..... \$2.44



Safeway Rubber Duplex Receptacles

Inner-Lock

15-Amperes, 125-Volts—10-Amperes, 250-Volts

Made of a high-grade rubber casing, in which are enclosed heavy duty inner-lock brass and bronze contacts. Body is non-breakable and the contacts are designed to hold plug caps in place, even up to a direct pull of 15 pounds. Has two binding screws in each side terminal.

Packed 5 in a carton, 25 in a standard package.

Flush Receptacles

No. 800—Parallel

Weight per standard package, 8 pounds.
No. 800.....each \$.80

No. 801—Polarity

Weight per standard package, 8 pounds.
No. 801.....each \$.90



No. 800

Outlet Box Receptacles—with Cadmium-Plated Covers

Parallel

No.	802	804
Each.....	\$.90	.90
For Outlet Box... in.	3 1/4	4
Wt. Std. Pkg... lb.	13	16

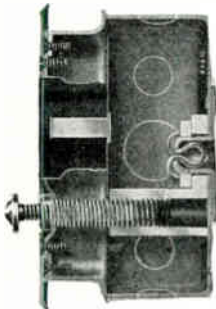
Polarity

No.	803	805
Each.....	\$ 1.00	1.00
For Outlet Box... in.	3 1/4	4
Wt. Std. Pkg... lb.	13	16



No. 802

R & S Fan Hanger Outlets



No. 649

All these fan hangers are furnished complete with brush brass finish plates. Special finishes on order at additional cost.

Stud Lock Type

With special box.

No.	Each	Description	Approx. Wt. Lb.
649	\$3.00	2 Wire T-Slot....	2
647	3.50	2 Wire Polarized....	2
637	4.00	3 Wire Polarized....	2

Stud Lock Type

For use with 3/8-inch stud type outlet box.



No. 649S

No.	Each	Description	Approx. Wt. Lb.
649S	\$2.50	2 Wire T-Slot.....	1/2
647S	3.00	2 Wire Polarized.....	1/2
637S	3.50	3 Wire Polarized.....	1/2

Yoke Lock Type

For use with standard 4-inch outlet box with raised cover.



No. 661

No.	Each	Description	Approx. Wt. Lb.
661	\$2.50	2 Wire T-Slot.....	1/2
719	3.00	2 Wire Polarized.....	1/2
653	3.50	3 Wire Polarized.....	1/2

No. 1402 Safeway Rubber Covered Plugs

2-Wire Polarity

15 Amp., 125 V.,—10 Amp., 250 V.

For heavy duty industrial service. Brass blades mounted on insulating material; removable. Practically non-breakable.

Underwriters' approved. Packed 10 in a carton, 100 in std. pkg., wt. 13 pounds. No. 1402, 1/16-In. Cord Hole.....each \$.40



No. 1403 Safeway Rubber Covered Plugs

3-Wire Grounded

15 Amp., 125 V.—10 Amp., 250 V.

For heavy industrial service. Brass blades mounted on insulating material; removable. Practically non-breakable. Underwriters' approved. Packed 10 in a carton, 100 in standard package, weight, 13 pounds.

No. 1403, 1/16-In. Cord Hole.....each \$.50



No. 1406 Safeway Rubber Covered Plugs

2-Wire Polarity—Cord Grip

15 Amp., 125 V.—10 Amp., 250 V.

For heavy industrial service. Brass blades mounted on insulating material; removable. Practically non-breakable. Underwriters' approved. Packed 10 in a carton, 100 in standard package, weight, 18 pounds.

No. 1406, 3/4-In. Cord Hole.....each \$.60



No. 1407 Safeway Rubber Covered Plugs

3-Wire Grounded—Cord Grip

15 Amp., 125 V.—10 Amp., 250 V.

For heavy industrial service. Brass blades mounted on insulating material; removable. Practically non-breakable. Underwriters' approved. Packed 10 in a carton, 100 in standard package, weight, 19 pounds.

No. 1407, 3/4-In. Cord Hole.....each \$.70



Protex Junior Rubber Covered Plugs

15 Amperes, 125 Volts—10 Amperes, 250 Volts



For use on electrical household appliances. Has plug cap with parallel contacts.

Grip end of plug extends over cord to prevent cord breakage.

Packed 10 in a carton, 100 in a standard package.

Weight standard package, 8 pounds.

No. 1420, 3/16-Inch Cord Hole.....each \$.08

No. 1421, 1/16-Inch Cord Hole.....each .08

Protex Molded Rubber Twin Sockets



No. 720



No. 721

Made of one-piece solid rubber, into which all metal parts have been molded. The solid rubber construction protects the lamp filament from breakage due to vibration of nearby heavy machinery.

Packed 5 in a carton, 25 in a standard package.

Weight per standard package, 6 pounds.

No. 720, with Screw Base.....each \$.75

No. 721, with Plug-In Base.....each .75



Safeway Rubber Cord Connector Bodies

15 Amperes, 125 Volts—10 Amperes, 250 Volts

Actual tests have proven the Safeway rubber cord connector capable of resisting direct pulls up to 15 pounds.
Nos. 1500, 1501



No. 1500

Will fit standard parallel and polarity 2-wire plugs.

Standard cord hole, 7/16 inch. Can be furnished with 5/16 to 3/8 inch cord holes on specifications.

Packed 10 in a carton, 100 in standard package. Weight std. pkg., 13 pounds.

No. 1500, Parallel.....each \$.40
No. 1501, Polarity.....each .50



No. 1502

Nos. 1502, 1503 with Cord Grip

Will fit standard parallel and polarity 2-wire plugs.

Cord Grip 1/4 to 3/4-inch inclusive.

Packed 10 in a carton, 100 in standard package.

Weight standard package, 18 pounds.

No. 1502, Parallel with Cord Grip...ea. \$.60

No. 1503, Polarity with Cord Grip...ea. .70



No. 1502

No. 1508 Three Wire, with Cord Grip

For trucks, trailers, shop for grounding tools, etc., or three phase motor wiring. Cord Grip 3/4-inch.

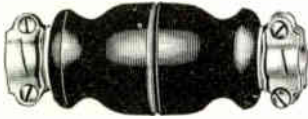
Packed 10 in a carton, 100 in standard package.

Weight standard package, 19 pounds.

No. 1508, Three Wire Female with Cord Grip.....each \$.75

Safeway Rubber Cord Connectors

With Cord Grips



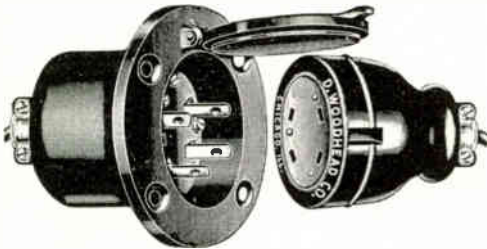
No. 1509

A strong, safe, convenient, practically non-breakable connector.

Packed 5 in a carton, 50 in a standard package.

- No. 1504, No. 1500 Parallel, with Cap No. 1400. Weight Standard Package, 13 Pounds.....each \$.70
- No. 1505, No. 1501 Polarity, with Cap No. 1402. Weight Standard Package, 13 Pounds.....each .80
- No. 1506, No. 1502 Parallel, with Cap No. 1404. Cord Grips, Weight Standard Package, 18 Pounds.. each 1.10
- No. 1507, No. 1503 Polarity with Cap No. 1406. Cord Grips, Weight Standard Package, 18 pounds.. each 1.30
- No. 1509, No. 1508 Three Wire with Cap No. 1407. Cord Grips. Weight Standard Package, 19 pounds.. each 1.45

Series 3000 Safeway Electric Connectors For Trucks and Trailers



Consists of a cast malleable iron box and cover with bakelite plate carrying the male contacts in the number specified, and a rubber plug with bakelite plate carrying the female contacts in the number specified.

Packed 24 in a standard package.

	Receptacle and Plug				
No.	3003	3004	3005	3006	3007
Each.....	\$4.50	5.00	5.75	6.35	7.00
No. of Wire.....	3	4	5	6	7
Wt. per Std. Pkg.....lb.	85	85	85	87	87

No. 3000 Box with Cover and Cord Grip

Weight per standard package, 70 pounds.
No. 3000.....each \$1.75

Series 4000 and 5000 connectors which are designed to meet a special kind of electrical connection between truck and trailer are not shown, but are available.

No. 903 Benjamin Swivel Attachment Plugs With Fiber Ring

660 Watts, 250 Volts—Listed by Underwriters' Laboratories



Swivel shell permits plug to be attached or removed without twisting cord. Has fiber insulating ring, porcelain base, and molded bushing with 1 1/2-inch opening for cord. Packed 50 in a carton, 250 in standard package; weight, 30 pounds.

No. 903.....per 100 \$20.00

No. 904 Benjamin Swivel Attachment Plugs With Molded Ring

Listed by Underwriters' Laboratories
660 Watts, 250 Volts



Swivel shell allows plug to be turned into or out of socket without twisting cord. Has molded insulating ring and bushing with 1 1/2-inch opening for cord. Packed 50 in a carton, 250 in standard package; weight, 30 pounds.

No. 904.....per 100 \$25.00

No. 916 Benjamin Heavy Duty Swivel Attachment Plugs

660 Watts, 250 Volts



For railroad and heavy work. Has chuck type bushing which takes a firm grip on any of the standard portable cords from 7/64 to 3/16 inch outside diameter. Standard package, 50; carton, 10. Weight per standard package, 12 pounds.

No. 916.....each \$.80

No. 1159 Mica Attachment Plugs



Made of a strong hard mica compound that will withstand hard usage.

Plugs can be furnished with left hand thread if desired. Medium screw.

Packed 10 in a carton, 100 in std. pkg.

Weight per standard package, 19 pounds.

No. 1159, Right Hand.....per 100 \$29.45

No. 1159LH, Left Hand.....per 100 34.00

No. 1409 Safeway Weatherproof Rubber Plugs

660 Watts—600 Volts



Body made of oil and heat resisting rubber compound, nickel plated screw base with No. 14 stranded, all rubber 6-inch leads.

Packed 10 in carton, 100 in std. pkg., wt. 15 pounds.

No. 1409.....each \$.35

No. 1400 Safeway Plugs

15 Amps., 125 Volts; 10 Amps., 250 Volts



A 2-wire, parallel, rubber-covered plug for industrial and railroad service. Brass blades can be removed from the body.

Approved by Underwriters' Laboratories. Cord hole, 7/8 inch. Carton, 10; standard package, 100. Weight, standard package, 13 pounds.

No. 1400.....each \$.30

No. 1404 Safeway Rubber-Covered Plugs

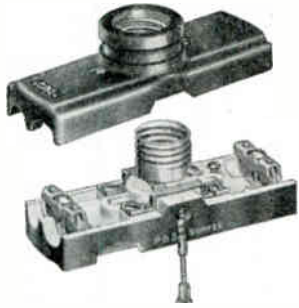
2-Wire Cap—With Cord Grip
15 Amp., 125 V.; 10 Amp., 250 V.



Brass blades mounted on insulating material; removable. Practically non-breakable. Approved by Underwriters' Laboratories. Packed 10 in a carton, 100 in std. pkg.; Wt. std. pkg. 16 lbs.

No. 1404, 3/16-In. Cord Hole.....each \$.50

P & S Surfex Wiring Devices



A simple, safe, surface wiring device that is easily installed—just mount the device, run the wire, and connect to terminals. It makes the work of circuit-testing easier and simpler because the user needs only to disconnect the cable from the terminals, and properly connect it up again. No longer is it necessary to tear out expensive taping, soldering and splicing to locate the trouble on a dead line. Surfex saves a foot of cable on every

outlet, in addition to boxes, connectors, solder, rubber tape and friction tape.

The Surfex Wiring Device has the following features: rigid cable clamp fastening to metal backplate—suitable for armored or non-metallic sheathed cable; 1 1/4-inch width of all devices permits mounting on 2x4-inch studs; large wiring chambers for cross overs; No. 8 wood screws for mounting; easy wiring terminals—no wire loops necessary; bus bar for feed through circuits; and metal reinforcing back plate which carries ground through device when armored cable is required. Made of porcelain; gives full protection against shock, corrosion and short circuit. Brown finish.



No. 660



No. 661



No. 666



No. 667



No. 668



No. 669



No. 670

No.	Per 100	Description	RATING		No. in Lb. Std. Pkg.	Wt. in Lb. Std. Pkg.
660	\$40.00	Single Pole Dead End Switch.....	5 A.	250 V.	50	..
661	55.00	Single Pole Feed-Thru Switch.....				
663	60.00	3-Way Feed-Thru Switch.....	10 A.	125 V.	30	..
666	50.00	Keyless Receptacle.....				
667	60.00	Pull Receptacle.....	660 W.	250 V.	50	..
668	50.00	Rosette.....	250 W.	250 V.	30	..
669	46.00	Junction Box.....	660 W.	250 V.	30	..
670	50.00	Duplex Convenience Outlet.....	10 A.	250 V.	..	..
			15 A.	125 V.	50	..

No. 4529 P&S Single Weatherproof Outlets

Parallel Slots

15 Amperes, 125 Volts—10 Amperes, 250 Volts



No. 4529

May be installed in a single gang switch box or flat face FS fitting. Sealed with cover and plate gaskets for complete protection. The plate is .060-inch brass with baked-on aluminum finish.



Lock Switch

This device incorporates the regular P&S Despard 1320 outlet which has constant tension contacts, gripping both sides of the plug blades. When outlet is in use attachment plug cap may be covered with No. 4528 protective cap.

Due to the fact that this device incorporates the standard No. 1320 P&S Despard outlet, it can be readily converted into a weatherproof lock switch by removing outlet and substituting a P&S Despard switch of the 1311-L type (see illustration above at right).

Carton, 2. Standard package, 10; weight, 7 pounds.
No. 4529 per 100 \$136.00

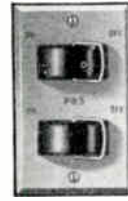
P&S Weatherproof Wiring Devices

For Single Gang Installation

15 Amperes, 125 Volts—10 Amperes, 250 Volts



No. 4521



No. 4525



No. 4526

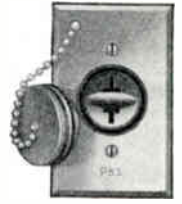
For installations where protection against the elements is necessary. Used in industrial plants, garages, creameries, distilleries, breweries, loading platforms, etc.



No. 4527

May be installed in a single gang switch box or flat face FS fitting. Each device is sealed with cover and plate gaskets.

Switches are T rated for Type C lamp loads. Outlet has constant tension contacts, gripping both sides of



No. 1533

the plug cap blades. Plate is .060-inch brass with baked-on aluminum finish.

Carton, 2.

No.	Per 100	Description	SWITCH AMPERES	Std. Pkg.	Wt. Lb.
4521	\$174.00	Single-Pole Switch.....	10T	5	10 6
4522	228.00	Double-Pole Switch.....	10	10	10 6
4523	196.50	3-Way Switch.....	10T	5	10 6
4524	436.00	4-Way Switch.....	5T	2	5 3
*4525	260.00	2 Single-Pole Switches.....	10T	5	10 7
*4526	260.00	Single-Pole Switch and Outlet.....	10T	5	10 7
4527	260.00	Duplex Outlet.....	..	..	10 7
1533	172.00	Single Outlet (T-Slot).....	..	..	10 7

*With single-pole switches. Switches may be easily interchanged with other P&S Despard Switches for double-pole, 3-way, or 4-way installations.

P&S Protective Caps



No. 4528

Per 100

4528 \$43.50
43.50

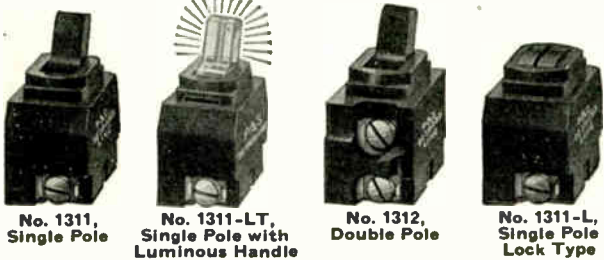
For Outlet Nos.

4529, 4526, 4527
1533



No. 1536

P & S Despard Specification Type Flush Tumbler Switches



One, two or three P & S Despard Switches may be installed in a single gang box. They may be wired with either common or separate feed. When installing these switches, it is necessary to use mounting straps. Switches will satisfactorily handle Type C lamp loads and carry Underwriters' T Rating as indicated below.

Made of bakelite; front and back are enclosed, making switch thoroughly dust-proof. The handle and strap are insulated from the mechanism. Switching mechanism has a four-point break to insure against breakdown from overloads. Contact member is designed to snuff all arcs.

These switches conform to the most rigid government and architectural specifications. Each switch is tested under full load current in the factory before shipment.

No.	Per 100	Description	AMPERES		No. in Std. Pkg.	Wt. in Lb. Std. Pkg.
			125 V.	250 V.		
1311	\$35.00	Single Pole, Brown.	†10	5	100	11
1411	41.00	Single Pole, Ivory...	†10	5	50	6
1311-LT	75.00	Single Pole with Luminous Handle, Brown.....	†10	5	100	11
1411-LT	81.00	Single Pole with Luminous handle, Ivory.....	†10	5	50	6
1312	89.50	Double Pole, Brown	10	10	10	2½
1412	95.50	Double Pole, Ivory.	10	10	10	2½
1313	57.50	Three-Way, Brown.	†10	5	50	8
1413	63.50	Three-Way, Ivory..	†10	5	30	3
1314	180.00	Four-Way, Brown..	†5	2	10	2½
1414	186.00	Four-Way, Ivory...	†5	2	10	2½

Lock Switches

1311-L	\$110.00	Single Pole, Brown.	†10	5	100	11
1411-L	116.00	Single Pole, Ivory..	†10	5	50	6
1312-L	164.50	Double Pole, Brown	10	10	10	2½
1412-L	170.50	Double Pole, Ivory	10	10	10	2½
1313-L	132.50	Three-Way, Brown.	†10	5	50	8
1413-L	138.50	Three-Way, Ivory..	†10	5	30	3
1314-L	255.00	Four-Way, Brown..	†5	2	10	2½
1414-L	261.00	Four-Way, Ivory...	†5	2	10	2½
†1499	20.00	Key for Lock Switches, Brown.....			1	¼

Momentary Contact Switches

1311-MO	\$145.00	Single Pole, Circuit Normally Open, Brown..	10	5	10	2½
1411-MO	151.00	Single Pole, Circuit Normally Open, Ivory...	10	5	10	2½
1311-MC	145.00	Single Pole, Circuit Normally Closed, Brown..	10	5	10	2½
1411-MC	151.00	Single Pole, Circuit Normally Closed, Ivory...	10	5	10	2½

†Switches carry Underwriters' T Rating.
†Key furnished with each lock switch.

P & S Despard Residential Type Flush Tumbler Switches



Bakelite, totally enclosed

No.	Per 100	Description	AMPERES in		No. Std. Pkg.	Wt. in Lb. Std. Pkg.
			125 V.	250 V.		
1391	\$24.00	Single Pole, Brown..	10	5	100	9
1491	30.00	Single Pole, Ivory	10	5	50	5
1393	32.00	Three-Way, Brown	10	5	50	5
1493	38.00	Three-Way, Ivory	10	5	30	3

P & S Despard Convenience Outlets
Outlet Rating: 15 Amperes, 125 Volts;
10 Amperes, 250 Volts
Single Convenience Outlets

For assembly in combination with switches, radio outlets, or any other P & S Despard devices. These outlets have bakelite bodies, and double, wide contact surfaces with spring tension sufficiently removed from heat of arc to prevent withdrawal of temper, which is the cause of loose contacts.

Where one convenience outlet is to be switch-controlled, a combination of two No. 1320 or 1420 outlets having separate feed and return may be installed. Where common return is desired, the two negative terminals may be bussed together.



No.	Per 100	Description	No. in Std. Pkg.	Wt. in Lb. Std. Pkg.
1320	\$14.00	Parallel Slots, Brown..	100	6
1420	20.00	Parallel Slots, Ivory..	100	6
1341	24.00	Pilot Light Outlet, Parallel Slots, Brown.....	30	4
1441	30.00	Pilot Light Outlet, Parallel Slots, Ivory.....	20	3
1327	11.00	Insul. Adapter, Brown.	50	4
1427	17.00	Insul. Adapter, Ivory..	30	3

Duplex and Triplex Convenience Outlets

These outlets have one-piece bakelite bodies, four binding screws for feed-thru circuits, and embody the same constant tension contacts as single convenience outlets.

No.	Per 100	Description	No. in Std. Pkg.	Wt. in Lb. Std. Pkg.
13202	\$25.00	Duplex, Parallel Slots, Brown.....	100	22
13202Y	31.00	Same as 13202; with separate Feeds, Common Returns.	100	22
14202	31.00	Duplex, Parallel Slots, Ivory.....	50	11
14202Y	37.00	Same as 14202; with separate Feeds, Common Returns.	50	11
13203	29.00	Triplex, Parallel Slots, Brown.....	100	25
14203	35.00	Triplex, Parallel Slots, Ivory.....	50	13

P & S Despard Rectangular Attachment Plug Caps Bakelite

Parallel blades; ½-inch cord hole.

No.	Per 100	Description	No. in Std. Pkg.	Wt. in Lb. Std. Pkg.
1321	\$7.50	Brown.....	100	5
1421	13.50	Ivory.....	50	4
1326	9.00	Polarized, Brown....	100	7
1426	15.00	Polarized, Ivory....	50	4

Parallel blades; ¼-inch cord hole.

No.	Per 100	Description	No. in Std. Pkg.	Wt. in Lb. Std. Pkg.
DR	\$7.00	Two-Piece.....	100	9

NOTE. The use of P & S Despard Convenience Outlets with non-insulated metal plates is not recommended unless the plates are equipped with bakelite insulating adapters.

P & S Despard Radio Outlets

For antenna and ground connections. Outlet can be used in outlet box singly, in multiple, or with other P & S Despard devices. No. 1346 Box Divider keeps ground and antenna circuits separate from power circuits.

Cap blades are set at an angle which prevents insertion in power slots.

Standard package, 10; weight, 1 pound.

No. 1322, Brown Outlet.....	per 100	\$42.50
No. 1422, Ivory Outlet.....	per 100	48.00
No. 1323, Brown Cap, ¼" Hole..	per 100	13.50
No. 1423, Ivory Cap, ¼" Hole..	per 100	19.00



P & S Despard Night Lights

With Clear Lamps and Metal Reflectors
Rating, 75 Watts, 125 Volts

Furnished complete with lamp and metal reflector. The S-6, 6-watt, 120-volt clear Mazda lamp gives sufficient light to outline walls or furniture.
Standard package, 30; weight, 2 pounds.



No. 1339

No. 1339, with Chromium Plated Reflector	per 100	\$95.50
No. 1339-B, with Brush Brass Reflector	per 100	95.50
No. 1339-BR, with Brown Enameled Reflector	per 100	95.50
No. 1339-I, with Ivory Enameled Reflector	per 100	95.50

P & S Despard Pilot Lights

With Red Lamps and Metal Hoods
Rating, 75 Watts, 125 Volts

An S-6, 6-watt, 120-volt red Mazda lamp and metal hood are furnished with each receptacle.
Standard package, 30; weight, 5 pounds.



No. 1340

No. 1340, with Chromium Plated Hood	per 100	\$95.50
No. 1340-B, with Brush Brass Hood	per 100	95.50
No. 1340-BR, with Brown Enameled Hood	per 100	95.50
No. 1340-I, with Ivory Enameled Hood	per 100	95.50

NOTE: When night lights and pilot lights are desired without lamps, specify regular number with suffix "LL." When pilot lights are desired with clear lamps, specify regular number with suffix "CL."

P & S Despard Flush Pilot Lights

Rating, 75 Watts, 125 Volts

Furnished complete with S-6, 6-watt, 120-volt, clear Mazda lamp and red glass jewel.



No. 1376

No. 1376. Mounted in No. 1347 single opening strap.

No. 1377. For use in combination with P & S Despard switch or outlet. Mounted in No. 1348 strap.

Standard package, 30; weight, 7 pounds.

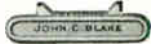


No. 1377

No. 1376, Single Pilot Light with Red Jewel, For Use in Single Vertical Opening Plate	per 100	\$95.50
No. 1377, Combination Pilot Light, For Use with Switch or Outlet, in Any Two-Opening Plate	per 100	95.50

P & S Despard Accessories

Name Plates



No. 1330

May be used with all P & S Despard plate openings. Consists of a rust-proof frame, transparent window and white card.

Standard package, 30; weight, 1/4 pound.

No. 1330, with Stainless Steel Frame	per 100	\$16.50
No. 1330-I, with Brush Brass Frame	per 100	16.50

Bell Push



No. 1344

Bakelite; for 6 to 12-volt circuits. Can be placed in box with P & S Despard switch, outlet or night light.

Standard package: brown, 20; ivory, 10.

Weight of standard package: brown, 2 pounds; ivory, 1 pound.

No. 1344, Brown	per 100	\$25.00
No. 1444, Ivory	per 100	31.00

Blank Inserts



No. 1345

Used to fill unused openings in plates. Made with knockout for cord hole or telephone outlet.
Standard package, 10; weight, 1 pound.

No. 1345, Brown	per 100	\$10.50
No. 1445, Ivory	per 100	16.50

P & S Despard Accessories and Box Covers

No.	Per 100	Description	No. in Std. Pkg.	Wt. in Lb. Std. Pkg.
1343	\$20.50	C. P. Hood for No. 1340	30	2
*1343-B	20.50	Brush Brass Hood for No. 1340-B	30	2
1343-BR	20.50	Brown Enam. Hood for No. 1340-BR	30	2
1343-I	20.50	Ivory Enam. Hood for No. 1340-I	30	2
1352	20.50	C. P. Reflector for No. 1339	30	2
*1352-B	20.50	Brush Brass Reflector for No. 1339-B	30	2
1352-BR	20.50	Brown Enameled Reflector for No. 1339-BR	30	2
1352-I	20.50	Ivory Enameled Reflector for No. 1339-I	30	2
†S-6	40.00	Clear Lamp	120	5
†S-6	50.00	Red Lamp	120	5

*Can be supplied in special finishes.
†For use in pilot light receptacles and night lights. Lamps are rated 6 watts, 120 volts.

Mounting Straps



No. 1347
Single Opening
Strap



No. 1348
Three Opening
Strap



No. 1354
Appliance
Strap

Mounting Straps. The correct style of mounting strap is packed with each P & S Despard plate. Straps may, however, be ordered separately, and for that purpose they are listed below. No. 1347 is 4 3/8 inches long and 1 1/8 inch wide. No. 1348 is 4 3/8 inches long and 1 1/2 inch wide. Screw hole spacing on both numbers, 3 3/8 inches.

Appliance Strap. For mounting single P & S Despard devices in small spaces. Ideal for appliance applications. Length, 2 1/2 inches; width, 2 3/8 inch. Mounting screw holes, tapped for 6-32 screws, spaced on 1 3/16-in. centers.

No.	Per 100	Description	No. in Std. Pkg.	Wt. in Lb. Std. Pkg.
1347	\$4.00	Single Opening	50	3
1348	4.00	Three Openings	50	3
1354	3.50	Appliance Strap	100	3

No. 1346 Metal Box Dividers



For 1 1/2, 2 or 2 1/2-inch switch boxes.
Standard package, 10; weight, 3 pounds.
No. 1346 per 100 \$28.00

Metal Box Covers

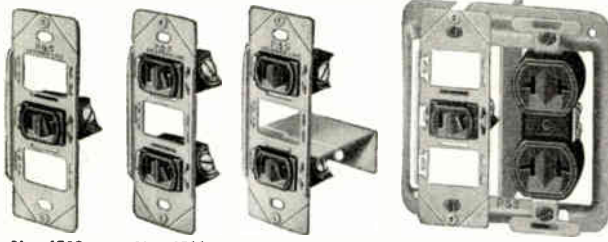
For mounting any one P & S Despard device directly on a 3 1/4-inch outlet box, or any one or two P & S Despard devices on a 4-inch outlet box. They are especially adapted for surface or exposed work. Covers have a bright metallic finish and are furnished complete with the necessary straps for installing devices.

No.	Per 100	Description	No. in Std. Pkg.	Wt. in Lb. Std. Pkg.
1361	\$13.50	Single Opening Cover for 3 1/4-In. Box	100	25
1362	16.50	Single Opening Cover for 4-In. Box	100	33
1363	21.50	Two Opening Cover for 4-In. Box	50	18

P & S Despard Radio Outlets and Assemblies

Outlet Rating: 15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Outlets



No. 4509

No. 4511

No. 4513

No. 4515

Single Outlets

No.	Each	Description	No. in Std. Pkg.	Wt. in Lb. Std. Pkg.
4509	\$42.50	Radio Outlet, Brown	10	2
5509	48.00	Radio Outlet, Ivory	10	2
4510	56.00	No. 4509 with Radio Cap, Brown	10	3
5510	67.00	No. 5509 with Radio Cap, Ivory	10	3

Twin Outlets

4511	\$91.50	Two Radio Outlets, Brown	10	3
5511	98.50	Two Radio Outlets, Ivory	10	3
4512	118.50	No. 4511 with Two Radio Caps, Brown	10	4
5512	136.50	No. 5511 with Two Radio Caps, Ivory	10	4

Duplex Outlets

4513	\$92.00	Radio Outlet and Power Outlet with Box Divider, Brown	10	5
5513	99.00	Radio Outlet and Power Outlet with Box Divider, Ivory	10	5
4514	109.50	No. 4513 with Radio Cap, Brown	10	6
5514	122.00	No. 5513 with Radio Cap, Ivory	10	6

Two Gang Radio and Power Outlets with 4-Inch Box Cover and Divider

4515	\$141.50	Radio and Duplex T-Slot Power Outlet, Brown	10	8
5515	154.50	Radio and Duplex T-Slot Power Outlet, Ivory	10	8
4516	155.00	No. 4515 with Radio Cap, Brown	10	8
5516	173.00	No. 5515 with Radio Cap, Ivory	10	8
4517	132.00	Radio and Duplex Parallel Slot Power Outlet, Brown	10	8
5517	144.00	Radio and Duplex Parallel Slot Power Outlet, Ivory	10	8
4518	145.50	No. 4517 with Radio Cap, Brown	10	8
5518	163.50	No. 5517 with Radio Cap, Ivory	10	8



No. 1323

Caps for Radio Outlets

Standard package, 10; weight, 1 pound.

No. 1323, Brown	per 100	\$13.50
No. 1423, Ivory	per 100	19.00

P & S Despard Two Gang Plates for Radio Assemblies



For Radio Outlet and T-Slot Power Outlet Assemblies

No. 1782-AF

No. 91052

No.	Per 100	Description	No. in Std. Pkg.	Wt. in Lb. Std. Pkg.
1672-AF	\$68.00	.060-Inch Brush Brass Plate	10	10
1772-AF	56.00	.040-Inch Brush Brass Plate	10	10
1782-AF	32.00	Brown-X Plate	10	10
1792-AF	60.00	Chrome-X Plate	10	4
1882-AF	47.00	Ivory-X Plate	10	4
91052	32.00	Brown	30	9
92052	47.00	Ivory	30	9

For Radio Outlet and Parallel Slot Power Outlet Assemblies

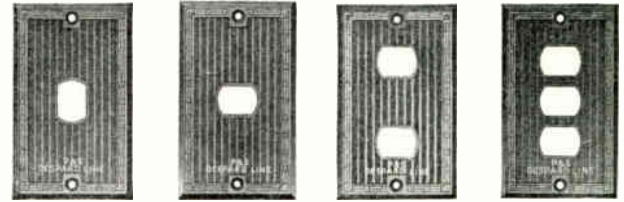
1782-AB	\$32.00	Brown-X Plate	10	11
1882-AB	47.00	Ivory-X Plate	10	4

Bakelite Plates for P & S Despard Devices

These plates have thick, strong sections, and the wiring device strap furnished with each plate has been designed to form a metal backing or reinforcement for the plate. These two features, combined with the fact that the plate fastening screws are located at the extreme ends near the bevel, make it impossible for plates to warp or crack.

Brown bakelite plates are furnished as standard with brown plated screws. Ivory plates are furnished as standard with metal screws in ivory enamel finish.

Single Gang



No. 91041

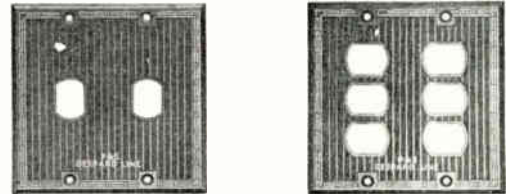
No. 91011

No. 91021

No. 91031

Uniline No.	Per 100	Description	No. in Std. Pkg.	Wt. in Lb. Std. Pkg.
91041	\$11.50	One Vertical Opening, Brown	100	14
92041	17.50	One Vertical Opening, Ivory	100	14
91011	11.50	One Horizontal Opening, Brown	100	16
92011	17.50	One Horizontal Opening, Ivory	100	16
91021	16.00	Two Openings, Brown	50	8
92021	22.00	Two Openings, Ivory	50	7
91031	16.00	Three Openings, Brown	30	6
92031	22.00	Three Openings, Ivory	30	6

Two Gang



No. 91042

No. 91032

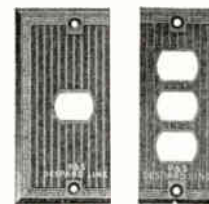
91042	\$22.50	Two Vertical Openings, Brown	50	16
92042	34.50	Two Vertical Openings, Ivory	30	10
91012	22.50	Two Horizontal Openings, Brown	50	16
93012	34.50	Two Horizontal Openings, Ivory	30	10
91022	32.00	Four Openings, Brown	30	9
92022	44.00	Four Openings, Ivory	30	9
91032	45.00	Six Openings, Brown	20	5
92032	57.00	Six Openings, Ivory	20	5

Three Gang

91023	\$64.00	Six Openings, Brown	20	6
92023	82.00	Six Openings, Ivory	20	6

Sectional Plates

When multi-gang or combination plates other than those listed are required, they can be assembled by using the various plate sections listed. Special flat head screws for use in fastening mounting strap to switch box are supplied with each sectional plate. These special screws permit easy adjustment of mounting straps to obtain proper alignment of plates.



No. 91311

No. 91431

End Section

Uniline No.	Per 100	Description	No. in Std. Pkg.	Wt. in Lb. Std. Pkg.
91311	\$21.50	One Horizontal Opening, Brown	50	10
92311	27.50	One Horizontal Opening, Ivory	50	10
91321	21.50	Two Openings, Brown	50	10
92321	27.50	Two Openings, Ivory	50	10
91331	21.50	Three Openings, Brown	30	8
92331	27.50	Three Openings, Ivory	30	8

Center Section

91411	\$21.50	One Horizontal Opening, Brown	50	9
92411	27.50	One Horizontal Opening, Ivory	50	9
91421	21.50	Two Openings, Brown	50	9
92421	27.50	Two Openings, Ivory	50	9
91431	21.50	Three Openings, Brown	30	7
92431	27.50	Three Openings, Ivory	30	7

Brass Plates for P & S Despard Devices

Brush Brass. This finish is standard and will be furnished if no finish is specified.
Passmour Finish. A durable colored lacquer finish that resembles brush brass.
Special Finishes. Special finishes can be furnished; complete information on request.
Special Combination Plates. Can be furnished on order.

Single Gang

Struck-up .040" Metal			Struck-up .060" Metal			Description	No. in Std. Pkg.
No.	Per 100	Wt. Lb. Std. Pkg.	No.	Per 100	Wt. Lb. Std. Pkg.		
No. 1671-A							
1771-A	\$13.00	24	1671-A	\$23.50	36	One Horizontal Opening, Brush Brass	100
L-1771-A	11.50	24	L-1671-A	22.00	36	One Horizontal Opening, Passmour	100
1771-B	17.50	12	1671-B	28.50	18	Two Openings, Brush Brass	50
L-1771-B	16.00	12	L-1671-B	27.00	18	Two Openings, Passmour	50
1771-C	17.50	7	1671-C	28.50	12	Three Openings, Brush Brass	30
L-1771-C	16.00	7	L-1671-C	27.00	12	Three Openings, Passmour	30
1771-G	13.00	23	1671-G	23.50	36	One Vertical Opening, Brush Brass	100
L-1771-G	11.50	23	L-1671-G	22.00	36	One Vertical Opening, Passmour	100
1771-J	27.00	12	1671-J	33.00	25	Blank Plate, Brush Brass	50
L-1771-J	25.50	12	L-1671-J	31.50	25	Blank Plate, Passmour	50
*1771-R	17.50	3	*1671-R	28.50	4	Two Openings, One Insulating Adapter, Brush Brass	10
*L-1771-R	16.00	3	*L-1671-R	27.00	4	Two Openings, One Insulating Adapter, Passmour	10
*1771-V	17.50	3	*1671-V	28.50	4	Two Openings, Two Insulating Adapters, Brush Brass	10
*L-1771-V	16.00	3	*L-1671-V	27.00	4	Two Openings, Two Insulating Adapters, Passmour	10

Two Gang

1772-2A	\$26.00	8	1672-2A	\$47.00	7	Two Horizontal Openings, Brush Brass	10
L-1772-2A	23.00	8	L-1672-2A	44.00	7	Two Horizontal Openings, Passmour	10
1772-2B	35.00	6	1672-2B	57.00	7	Four Openings, Brush Brass	10
L-1772-2B	32.00	6	L-1672-2B	54.00	7	Four Openings, Passmour	10
1772-2C	35.00	5	1672-2C	57.00	6	Six Openings, Brush Brass	10
L-1772-2C	32.00	5	L-1672-2C	54.00	6	Six Openings, Passmour	10
1772-2G	26.00	8	1672-2G	47.00	7	Two Vertical Openings, Brush Brass	10
L-1772-2G	23.00	8	L-1672-2G	44.00	7	Two Vertical Openings, Passmour	10
1772-2J	54.00	9	1672-2J	66.00	11	Blank Plate, Brush Brass	10
L-1772-2J	51.00	9	L-1672-2J	63.00	11	Blank Plate, Passmour	10

Three Gang

1773-3A	\$39.00	7	1673-3A	\$70.50	10	Three Horizontal Openings, Brush Brass	10
L-1773-3A	34.50	7	L-1673-3A	66.00	10	Three Horizontal Openings, Passmour	10
1773-3B	52.50	5	1673-3B	85.50	8	Six Openings, Brush Brass	10
L-1773-3B	48.00	5	L-1673-3B	81.00	8	Six Openings, Passmour	10
1773-3C	52.50	4	1673-3C	85.50	7	Nine Openings, Brush Brass	10
L-1773-3C	48.00	4	L-1673-3C	81.00	7	Nine Openings, Passmour	10
1773-3G	39.00	7	1673-3G	70.50	10	Three Vertical Openings, Brush Brass	10
L-1773-3G	34.50	7	L-1673-3G	66.00	10	Three Vertical Openings, Passmour	10
1773-3J	81.00	12	1673-3J	99.00	13	Blank Plate, Brush Brass	10
L-1773-3J	76.50	12	L-1673-3J	94.50	13	Blank Plate, Passmour	10

New Process Metal Plates for P & S Despard Devices

Brown-X and Ivory-X. These plates have a multiple coat of baked-on, insulating enamel. Closely resembling bakelite, they have all of the sturdiness of metal plates. They will not warp or crack, and their surface is satisfactory for painting.

Chrome-X. These plates are made of .040-inch stainless steel. Their soft, semi-polished, silver-like finish is right in the metal and will last indefinitely.

Single Gang

Brown-X			Ivory-X			Chrome-X (.040" Stainless Steel)			Description	No. in Std. Pkg.
No.	Per 100	Wt. Lb. Std. Pkg.	No.	Per 100	Wt. Lb. Std. Pkg.	No.	Per 100	Wt. Lb. Std. Pkg.		
No. 1781-G										
1781-A	\$9.00	20	1881-A	\$12.00	20	1791-A	\$23.00	22	One Horizontal Opening	100
1781-B	10.00	10	1881-B	13.00	10	1791-B	24.00	11	Two Openings	50
1781-C	10.00	6	1881-C	13.00	6	1791-C	24.00	7	Three Openings	30
1781-G	9.00	20	1881-G	12.00	19	1791-G	23.00	19	One Vertical Opening	100
.....	.....	.....	.....	.....	.....	*1791-R	24.00	3	Two Openings, One Insulating Adapter	10
.....	.....	.....	.....	.....	.....	*1791-V	24.00	3	Two Openings, Two Insulating Adapters	10

Two Gang

1782-2A	\$18.00	4	1882-2A	\$26.00	4	1792-2A	\$54.00	4	Two Horizontal Openings	10
1782-2B	26.00	4	1882-2B	34.00	4	1792-2B	78.00	4	Four Openings	10
1782-2C	26.00	3	1882-2C	34.00	3	1792-2C	78.00	3	Six Openings	10
1782-2G	18.00	4	1882-2G	26.00	4	1792-2G	54.00	4	Two Vertical Openings	10

Three Gang

1783-3A	\$27.00	5	1883-3A	\$39.00	5	1793-3A	\$81.00	5	Three Horizontal Openings	10
1783-3B	34.00	5	1883-3B	46.00	5	1793-3B	102.00	5	Six Openings	10
1783-3C	34.00	4	1883-3C	46.00	4	1793-3C	102.00	4	Nine Openings	10
1783-3G	27.00	5	1883-3G	39.00	5	1793-3G	81.00	5	Three Vertical Openings	10

*These plates are regularly supplied with brown bakelite insulating adapters. When ivory adapters are desired, specify regular number with suffix "I."

Wall plates listed above are supplied complete with the necessary straps for mounting P & S Despard devices.

NOTE: The installation of P & S Despard Convenience Outlets in non-insulated metal plates is not recommended unless the plates are equipped with bakelite insulating adapters.



Bryant Flush Tumbler Switches

Shallow Type—With Porcelain Cups

Dimensions of porcelain cups: Length, $2\frac{3}{16}$ inches; width, Nos. 3951 and 3951-L, $1\frac{1}{2}$ inches, others $1\frac{11}{16}$ inches; depth, $1\frac{1}{32}$ inches.

Supporting screw spacing, $3\frac{3}{32}$ inches.

Screws for mounting are furnished.

One key is furnished with each lock switch.

When ordering combination plates, specify S sections to accommodate these switches.

These switches, on special order, can be furnished with black handles (lock switches with black bosses) without extra charge.



No. 3951

Bryant Enclosed Flush Tumbler Switches

**For Type C Lamp Loads
Black Composition Cups**

These switches will give uniform performance, high minimum break-down, and exceptionally long life.

Dimensions of cups: Length, $2\frac{1}{16}$ inches; depth, $1\frac{3}{8}$ inches; width, Nos. 4961 and 4961-L, $1\frac{13}{32}$ inches, others, $1\frac{11}{16}$ inches.

Supporting screw spacing, $3\frac{3}{32}$ inches.

When ordering combination plates, specify S section. Single plates OS11, OS61, HS41, and HS31.

On special order, these switches can be furnished with black handles (lock switches with black bosses) without extra charge.



No. 4961

Flush Tumbler Switches

Cat. No.	Per 100	Description	AMPERES			Pkg. Std. Pkg.	Wt. Lbs.
			125 Volts	250 Volts	Car-ton		
3951	\$35.00	S. P. Indicating.....	10	5	10	100	30
3952	89.50	D. P. Indicating.....	10	10	10	50	17
3953	57.50	3-Point.....	10	5	10	50	17
3954	297.00	4-Point.....	5	2	2	10	4
3955	127.50	D. P. Indicating.....	20	10	2	10	3
3920	89.50	S. P. Quadruple Break, Indicating.....	20	10	10	50	16

Flush Tumbler Switches

With Brown Bakelite Handles

Cat. No.	Per 100	Description	AMPERES			Car-ton	Std. Pkg.	Wt. Lbs.
			125 Volts	250 Volts	Car-ton			
4961	\$85.00	S.P. Indicating....	10	5	10	50	18	
4962	138.00	D.P. Indicating...	10	10	2	10	4	
4963	106.00	3-Point.....	10	5	10	20	7 $\frac{1}{2}$	
4964	339.50	4-Point.....	5	2	2	10	4	
4965	159.00	D.P. Indicating....	20	10	2	10	4	
4966	138.00	S.P. Quadruple Break, Indicating.	20	20	10	20	8	

Flush Tumbler Lock Switches

3951-L	\$110.00	S. P. Indicating.....	10	5	10	100	31
3952-L	164.50	D. P. Indicating.....	10	10	10	50	17
3953-L	132.50	3-Point.....	10	5	10	50	17
3954-L	372.00	4-Point.....	5	2	2	10	4
3955-L	202.50	D. P. Indicating.....	20	10	2	10	3
3920-L	164.50	S. P. Quadruple Break, Indicating.....	20	10	10	50	15

Flush Tumbler Lock Switches

With Brown Bakelite Bosses

One No. 4960 Key is furnished with each lock switch.

4961-L	\$160.00	S.P. Indicating...	10	5	10	50	20
4962-L	213.00	D.P. Indicating...	10	10	2	10	4
4963-L	181.00	3-Point.....	10	5	10	20	8
4964-L	414.50	4-Point.....	5	2	2	10	4
4965-L	234.00	D.P. Indicating...	20	10	2	10	3 $\frac{1}{4}$
4966-L	213.00	S.P. Quadruple Break, Indicating	20	20	10	20	8

Bryant Flush Tumbler Switches

**Double-Pole Switches for Motor Control
With Porcelain Cups—High Capacity**

2 H.P., 115-230 Volts A.C., 125-250 Volts D.C.
No. 3982 for Appliance Use—2500 W. 125 V.; 5000 W. 250 V.



No. 3972



No. 3972-SH



No. 3972-SR

Dimensions of cups: Length, $2\frac{3}{16}$ inches; width, $1\frac{3}{4}$ inches; depth, $1\frac{1}{2}$ inches. Lock type takes No. 4960 key.

No. 3982 is for appliance use and therefore is back connected and is sealed with high heat compound.

With Brown Bakelite Handle

Cat. No.	Per 100	Description	AMPERES			Car-ton	Std. Pkg.	Wt. Lbs.
			125 Volts	250 Volts	Car-ton			
3971	\$89.50	S.P.....	20	10	10	50	22	
3972	127.50	D.P. Indicating.....	20	20	2	10	4	
3973	117.00	3-Point.....	20	10	2	10	5	
3974	424.00	4-Point.....	10	5	2	10	5	
3982	127.50	D.P. Indicating.....	20	20	2	10	6	

With Steel Handle

3972SH	\$127.50	D.P.....	20	20	2	10	4
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With Roller Handle

3972SR	\$132.50	D.P.....	20	20	2	10	4
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Black handles and steel handles supplied on special order without extra charge.

Bryant Hemco Flush Switches

10 Amperes, 125 Volts; 5 Amperes, 250 Volts



No. H51



No. H53

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs.
H51	\$12.50	S. P. Ind. Tumbler...	10	100	32
H53	19.00	3 Point Tumbler....	10	50	17

Bryant Self-Restoring Door Switches

Automatic—Complete with Outlet Box

Single-Pole—6 Amperes, 125 Volts; 3 Amperes, 250 Volts

Plunger adjustable from $\frac{5}{16}$ — $\frac{9}{16}$ in.

Complete with brush brass plate $4\frac{1}{8}$ x $1\frac{3}{8}$ -inch and with round strike plate. Standard finish of plates, brush brass.

Box is $3\frac{3}{8}$ in. long, $1\frac{1}{4}$ in. wide, $2\frac{3}{8}$ in. deep; has a $\frac{3}{8}$ -in. knockout in bottom, $\frac{5}{8}$ -in. knockout in one end and $\frac{1}{8}$ -in. knockout in other end.

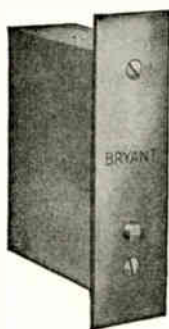
Switch is On When Door is Open

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs.
2355	\$375.50	2	25	30

Switch is Off When Door is Open

2356	\$375.50	2	10	12
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Switch less box \$339.50 per 100. Switch less cover plate and strike plate \$308.50 per 100. Switch less box, cover plate, and strike plate \$274.50 per 100.



No. 2355

Bryant Mercury Silent Flush Switches

5 Amperes, 125 or 250 Volts, A.C. or D.C.
"T" Rated at 5 Amperes

Listed as Standard by Underwriters' Laboratories, Inc.

Contact takes place in small completely enclosed glass sealed metal button.

Rugged casing is of black bakelite. Binding screws are adequate for No. 12 wire.

Wide mounting; ears facilitate alignment of switch with mounting surface.



Single-Pole

Cat. No.	Per 100	Handle	Carton	Std. Pkg.	Wt. Lbs. Std. Pkg.
4701	\$85.00	Brown	10	100	21
4701-I	95.00	Ivory	10	50	11

3-Point

4703	\$106.00	Brown	10	50	14
4703-I	116.00	Ivory	10	30	9

Double-Pole

4702	\$138.00	Brown	10	50	14
4702-I	148.00	Ivory	10	30	9

4-Point

4704	\$340.00	Brown	2	10	3
4704-I	350.00	Ivory	2	10	3

Bryant 3-Point Flush Switches

T Rated for Type C Lamp Applications

20 Amperes, 125 Volts—10 Amperes, 250 Volts
Approved for Federal Specifications

Mechanism totally enclosed in arc-resisting composition. Yoke insulated from mechanism. Depth of cups, 1 3/8 inches. Packed 10 in a carton, 20 in a standard package.

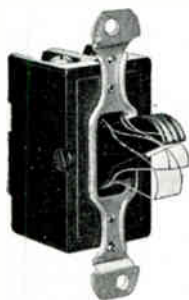


No.	Per 100	Description	Wt., Lb. Std. Pkg.
4967	\$159.00	Brown Handle.....	7 1/2
4967-Bl.	159.00	Black Handle.....	7 1/2
*4967-I	169.00	Ivory Handle.....	4
4967-L	234.00	Lock Type.....	8
4967-I.T	199.00	Luminous Tip.....	8
4967-M	269.00	Momentary.....	8
4967-MH	189.00	Metal, Cast Handle..	8
4967-RH	166.00	Rubber Handle.....	8
4967-SH	159.00	Steel, Stamped Handle.....	8

No. 4967
*Packed 2 in carton, 10 in standard package.

Diamond H Slow Break Toggle Switches

20 Amperes, 250 Volts,—1 Hp., 250 Volts—For A.C. Only



No. 980A3

This toggle switch is for use on machines, heavy duty appliances, equipment using fractional hp. motors, and special lighting circuits; for a.c. only. It uses the principle of slow breaking heavy silver contacts. The slow-break principle will enable the switch to give extremely long, trouble-free life under the most severe operating conditions far beyond ordinary requirements.

Made in two or three position, for flush mounting in standard boxes, and for interior or exterior mounting as part of machine equipment.

Switch is 2 1/2 inches long, 1 1/4 inches wide, and 1 1/2 inches deep. Mounting screws are for standard spacing. Plate slot for toggle is 1 x 1/2 inch.

The case and toggle are made of molded Bakelite. Surface type metal boxes may be supplied for industrial applications.

No.	Each	Description	Std. Pkg.	Ctn.
980 A3	\$1.30	Single Pole, On and Off.....	30	10
980 J	1.70	Single Pole, Double Throw, Off in Center.....	10	2
980 C3	1.60	Single Pole, Double Throw, No Off Position.....	10	2
980 F2	1.70	Double Pole On and Off.....	10	2

Bryant Flush Tumbler Switches

Single-Pole and 3-Point: 6 Amps., 125 V., 3 Amps., 250V.
Double-Pole: 10 Amps., 125 V.; 5 Amps., 250 V.
4 Point: 5 Amps., 125 V.; 2 Amps., 250 V.



No. 2853 Unigle

One outlet box, one switch, and one single gang plate in place of two or three of each.

Switch mechanisms operate horizontally.

Single and double-pole units indicating.

Brown bakelite cups and handles. Black bakelite handles on special order without extra charge.

Dimensions of bakelite cups: Length, 2 3/16 inches; width, 1 3/4 inches; depth, 1 1/2 inches.

Supporting screw spacings, 3 3/4 inches.

Carton, 2. Standard package, 10.

Unigle Switches

One Mechanism Mounted in Center Position of Cup

Cat. No.	Per 100	Description	Pkg. Wt. Lbs.
2851	\$75.50	Single-Pole.....	2 1/4
2852	106.00	Double-Pole.....	2 1/4
2853	90.50	3-Point.....	2 1/4
2854	300.00	4-Point.....	2 1/4



No. 2894 Dugle

Dugle Switches Separate Feeds

Two Mechanisms Mounted in End Positions of Cup

2855	\$375.50	1 Single Pole, 1 4-Point.	2 1/4
2856	210.00	2 Double-Pole.....	2 1/4
2857	390.50	1 3-Point and 1 4-Point.	2 1/4
2858	195.50	1 Double-Pole, 1 3-Point	2 1/4
2859	405.00	1 Double-Pole, 1 4-Point	2 1/4
2869	180.50	1 Single-Pole, 1 Double-Pole.....	2 1/4
2893	159.00	2 3-Point.....	2 1/4
2894	128.50	2 Single-Pole.....	2 1/4
2895	143.50	1 Single-Pole, 1 3-Point.	2 1/4

Dugle Switches Common Feed

Two Mechanisms Mounted in End Positions of Cup

2891	\$159.00	2 3-Point.....	2 1/4
2892	128.50	2 Single-Pole.....	2 1/4
2896	143.50	1 Single-Pole, 1 3-Point.	2 1/4



No. 2892 Dugle

Trigle Switches Separate Feeds

2864	\$195.50	3 Single-Pole.....	2 1/4
2866	210.00	2 Single-Pole, 1 3-Point.	2 1/4
2867	255.50	2 Single-Pole, 1 Double-Pole.....	2 1/4
2868	450.50	2 Single-Pole, 1 4-Point.	2 1/4

Trigle Switches Common Feed

2860	\$195.50	3 Single-Pole.....	2 1/4
2865	210.00	2 Single-Pole, 1 3-Point.	2 1/4

When ordering combination plates for regular switches specify S1 for Unigle, S2 for Dugle, and S3 for Trigle, and for Lock Type Switches, S4 for Unigle, S5 for Dugle, and S6 for Trigle Sections.

These switches can be furnished with Lock Type mechanism at an addition to list price of \$45.00 per 100 units. Add L to Cat. No. When so ordered, all units in the switch will be supplied Lock unless otherwise specified. A special plate is necessary when lock and regular units are combined in a switch.

One No. 2850 Key is furnished without charge with each lock switch. Sold separately at \$15.00 per 100 list. Carton, 20. Standard package, 100.



No. 2860 Trigle

**Bryant Surface Tumbler Switches
With Metal Cover**

125-250 Volts



Height over cover, 1¹⁵/₁₆ inches.
Supporting screw spacing, 1³/₄ inches.
Bakelite covers.

No. 3911

Cat. No.	Per 100	Description	AMPERES		Car-ton	Std. Wt., Lbs.	
			125 Volts	250 Volts		Pkg.	Std. Pkg.
3911	\$89.50	Single Phase.....	10	5	10	100	37
3912	127.50	Double Phase.....	10	5	10	100	40
3913	127.50	3-Point.....	10	5	10	50	18
3914	314.00	4-Point.....	5	2	2	10	4

Bryant Hemco Switches

5 Amperes, 125 Volts; 3 Amperes, 250 Volts

Packed 10 in a carton, 50 in a standard package.



No. H11

Surface—Bakelite Cover

No.	Per 100	Description	Wt. Lb. Std. Pkg.
*H21	\$16.00	S.P. Ind. Switch.	12
*H11	16.00	S.P. Ind. Slotted	11
*H23	22.80	3-Point Solid...	12
*H13	22.80	3-Point, Slotted	11

Outlet Box—Bakelite Cover

H31	\$20.00	S.P. 3 ¹ / ₄ -Inch...	24
H33	36.00	3-Point, 3 ¹ / ₄ -Inch	25
H41	21.00	S.P. 4-Inch.....	33
H43	38.00	3-Point, 4-Inch..	34

*Base diameter, 2 inches; supporting screws spaced 1³/₈ inches on centers.



No. 31

Bryant Surface Tumbler Switches

Metal Box Covers—Cadmium Finish

10 Amps., 125 V.—5 Amps., 250 V.
Listed by Underwriters' Laboratories

Packed 10 in a carton, 50 in a standard package.



No. H361

Single-Pole

No.	Per 100	Size In.	Wt., Lb. Std. Pkg.
H361	\$30.00	3 ³ / ₄	17
H461	32.00	4	24

3-Point

H363	\$38.00	3 ³ / ₄	18
H463	40.00	4	25



No. H363

Bryant Bakelite Surface Tumbler Switches

With Brown Bakelite Box Covers

10 Amps., 125 V.—5 Amps., 250 V.
Listed by Underwriters' Laboratories, Inc.

Completely insulated, moisture resistant, and ribbed for extra strength.

Packed 10 in a carton, 50 in a standard package.



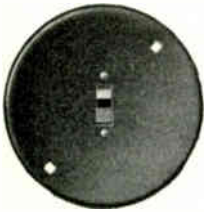
No. 5631

Single-Pole

No.	Per 100	Size In.	Wt., Lb. Std. Pkg.
5631	\$41.00	3 ³ / ₄	11
5641	43.00	4	17

3-Point

5633	\$48.00	3 ³ / ₄	12
5643	50.00	4	18



No. 5633

Bryant Single-Pole Surface Switches



No. 2000

6 Amperes, 125 Volts; 3 Amperes, 250 Volts
With Black Bakelite Covers, 2-Inch Porcelain Bases

Height over cover, 1¹⁵/₁₆ inches.
Height over No. 2777 handle, 1¹⁵/₁₆ inches.
Supporting screw spacing, 1³/₈ inches.
Nos. 2220 and 2035 can be supplied, on special order at no advance in price, on a base 1¹⁵/₁₆ inches in diameter.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Std. Pkg.	Wt. Lbs.
2220	\$38.50	Solid.....	10	100	25	
2000	38.50	Slotted.....	10	100	25	
2035	45.00	Solid, Indicating.....	10	100	25	
2047	45.00	Slotted, Indicating.....	10	100	25	

10 Amperes, 125 Volts; 5 Amperes, 250 Volts
With Bakelite Covers, 2¹/₄-Inch Porcelain Bases

Height over cover, 1¹⁵/₁₆ inches.
Height over No. 2777 handle, 2³/₈ inches.
Supporting screw spacing, 1³/₄ inches.
No. 2036 can be supplied, on special order at no advance in price, on a base 2¹/₄ inches in diameter. This diameter is the diameter of the metal cover.

2036	\$89.50	Solid, Indicating.....	10	100	36
2048	89.50	Slotted, Indicating.....	10	100	36

With Bakelite Cover, 2¹/₄-Inch Composition Bases

Height over cover, 1⁵/₈ inches.
Height over No. 2777 handle, 2³/₈ inches.
Supporting screw spacing, 1³/₄ inches.
2756 \$117.00 Solid, Indicating..... 10 30 9¹/₂

20 Amperes, 125 Volts; 10 Amperes, 250 Volts
With Metal Covers, 3¹/₂-Inch Porcelain Bases

These switches can be used very satisfactorily for inductive loads.

Height over cover, 1³/₈ inches.
Height over No. 2780 handle, 2¹/₂ inches.
Supporting screw spacing, 2³/₁₆ inches.
2833 \$165.50 Solid, Indicating..... 2 10 6
2834 165.50 Slotted, Indicating..... 2 10 6

Standard finish on all metal covers of surface switches unless otherwise noted is polished nickel which will be supplied when finish is not specified.

Rotary switches can be converted into lock switches by removing the handles and substituting No. 2384 Universal Rotary Switch Lock Attachment.

**No. 3916 Bryant Quadruple Break Tumbler Switches
Single-Pole**

20 Amps., 125 V.—10 Amps., 250 V.

Solid base, 2¹/₁₆ inches. Height over cover, 1¹⁵/₁₆ inches. Screw spacing, 1³/₄ inches.

No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
3916	\$150.00	2	10	5



**Bryant Oil Burner Emergency Switches
Single-Pole**

10 Amps., 125 V.—5 Amps., 250 V.
Red cover, with black letters.

No.	Per 100	Size In.	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
3883	\$34.00	3 ³ / ₄	10	50	17
3884	36.00	4	10	50	24



Bryant Double-Pole Surface Switches



No. 2618

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

2" Porcelain Base; Metal Covers

Diameter of porcelain base, 2 inches.

Height over cover, 1 1/16 inches.

Height over handle, 2 1/16 inches.

Supporting screw spacing, 1 3/8 inches.

No. 2393 can be supplied, on special order, at no advance in price, on a base 1 3/4 inches in diameter, which is the diameter of the metal cover.

Cat. No.	Per 100	Style Base	Car-ton	Std. Pkg.	Pkg. Wt. Lbs.
2393	\$106.00	Solid, Indicating	10	100	29
2394	106.00	Slotted, Indicating	10	100	29

10 Amperes, 125 Volts; 10 Amperes, 250 Volts
2 1/16" Porcelain Base, No. 2778 Round Composition Handle Bakelite Covers

Diameter of porcelain base, 2 1/16 inches.

Height over cover, 1 1/16 inches.

Height over handle, 2 1/4 inches.

Supporting screw spacing, 1 3/4 inches.

No. 2038 can be supplied, on special order, at no advance in price, on a base 2 1/4 inches in diameter, which is the diameter of the metal cover.

2038	\$127.50	Solid, Indicating	10	100	37
2050	127.50	Slotted, Indicating	10	100	37

20 Amperes, 125 Volts; 20 Amperes, 250 Volts
3 1/2" Porcelain Base, No. 2779 Flat Composition Handle Metal Covers

Diameter of porcelain base, 3 1/2 inches.

Height over cover, 1 3/32 inches.

Height over handle, 2 1/2 inches.

Supporting screw spacing, 2 3/16 inches.

2040	\$248.50	Solid, Indicating	2	30	18
2052	248.50	Slotted, Indicating	2	30	18

30 Amperes, 125 Volts; 30 Amperes, 250 Volts
3 1/16" Porcelain Base; No. 2780 Flat Composition Handle Metal Covers

Diameter of porcelain base, 3 1/16 inches.

Height over cover, 1 1/16 inches.

Height over handle, 2 3/4 inches.

Supporting screw spacing, 2 3/16 and 2 3/4 inches.

The holes in these switches are elongated to provide also 2 3/4-inch spacing, making them suitable for attachment to 3 1/4-inch outlet boxes, Type WD Octagonal Unilets, Type 700 Adaptiboxes, and Type SE Condulets.

2042	\$297.00	Solid, Indicating	2	30	31
2054	297.00	Slotted, Indicating	2	30	31

5 Amperes, 125 Volts; 5 Amperes, 250 Volts
1 23/32" Porcelain Base; No. 2777 Round Composition Handle Long Metal Covers

Diameter of cover, 1 23/32 inches.

Height over cover, 1 1/16 inches.

Height over handle, 2 1/16 inches.

Supporting screw spacing, 1 3/8 inches.

2618	\$108.50	Solid, Indicating	10	100	17
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Double-Throw—20 Amperes, 125 Volts; 10 Amperes, 250 Volts

2 1/16" Porcelain Base; No. 2779 Flat Composition Handle Operating, Circuit 1, Off, Circuit 2, Off; Bakelite Covers

Diameter of porcelain base, 2 1/16 inches.

Height over cover, 1 23/32 inches.

Height over handle, 2 5/8 inches.

Supporting screw spacing, 2 1/32 inches.

2613	\$375.50	Solid, Indicating	2	10	5
2614	375.50	Slotted, Indicating	2	10	5

10 Amperes, 125 Volts; 10 Amperes, 250 Volts
2 1/2" Composition Base; Bakelite Covers

Height over cover, 1 5/8 inches.

Height over No. 2777 handle, 2 5/8 inches.

Supporting screw spacing, 1 3/4 inches.

2766	\$146.50	Solid, Indicating	2	10	3 1/2
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Standard finish on all metal covers of surface switches unless otherwise noted is polished nickel which will be supplied when finish is not specified.

Rotary switches can be converted into lock switches by removing the handles and substituting No. 2384 Universal Rotary Switch Lock Attachment.

Bryant 3 and 4-Point Surface Switches

With Black Bakelite Covers, Porcelain Bases, and Round Composition Handles



3-Way—3 Amperes, 125 V.; 1 Amp., 250 V.

Diameter of base, 2 inches.

Height over cover, 1 13/32 inches.

Height over handle, 1 15/16 inches.

Supporting screw spacing, 1 3/8 inches.

No. 2455 can be supplied, on special order, at no advance in price, on a base 1 3/4 inches in diameter, which is the diameter of the metal cover.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs.
2455	\$72.50	Solid	10	100	25
2456	72.50	Slotted	10	100	25

3-Way—5 Amperes, 125 V.; 3 Amperes, 250 V.

Diameter of base, 2 1/4 inches.

Height over cover, 1 13/32 inches.

Height over handle, 1 1/2 inches.

Supporting screw spacing, 1 1/2 inches.

2175	\$85.00	Solid	10	100	31
2027	85.00	Slotted	10	100	31

3-Way—10 Amperes, 125 V.; 5 Amperes, 250 V.

Diameter of base, 2 1/16 inches.

Height over cover, 1 1/16 inches.

Height over handle, 2 1/4 inches.

Supporting screw spacing, 1 3/4 inches.

No. 2176 can be supplied, on special order, at no advance in price, on a base 2 1/4 inches in diameter, which is the diameter of the metal cover.

2176	\$127.50	Solid	10	50	18
2030	127.50	Slotted	10	50	18

4-Way—5 Amperes, 125 V.; 2 Amperes, 250 V.

Four-point switches are used in connection with two 3-point switches where current is to be controlled from any one of more than two points. A 4-point switch is installed between the 3-point switches at each additional point.

Can also be used individually as pole-changing switches.

Diameter of base, 2 1/16 inches.

Height over cover, 1 3/16 inches.

Height over handle, 2 1/4 inches.

Supporting screw spacing, 1 3/4 inches.

No. 2183 can be supplied, on special order, at no advance in price, on a base 2 1/4 inches in diameter, which is the diameter of the metal cover.

2183	\$270.50	Solid	10	30	11
2033	270.50	Slotted	10	30	11

Standard finish on metal covers is polished nickel which will be supplied when the finish is not specified.

Rotary switches can be converted into lock switches by removing the handles and substituting No. 2384 Universal Rotary Switch Lock Attachment.

Bryant Surface Rotary Switches

10 Amperes, 125 Volts
5 Amperes, 250 Volts

Listed by Underwriters' Laboratories, Inc.

Has 2 1/16-inch porcelain base and bakelite cover with indications.

Height over cover, 1 1/16 inches. Screw spacing, 1 3/4 inches.

Solid Base

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lb.
*2188	\$165.50	2-Circuit; 1, 2, 1 & 2, Off...	2	10	3
2187	165.50	3-Circuit; 1, 1 & 2, 1 & 2 & 3, Off	2	10	3 3/4

Slotted Base

*2074	\$165.50	2-Circuit; 1, 2, 1 & 2, Off..	2	10	3
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*May be used with three-light lamps.



No. 2072

Bryant Triple-Pole Surface Switches

With Bakelite Cover

20 Amperes, 125 Volts; 10 Amperes, 250 Volts

2 1/16" Porcelain Base; No. 2779 Wing Composition Handle



Diameter of base, 2 1/16 inches.
Height over cover, 1 3/8 inches.
Height over handle, 2 5/8 inches.
Supporting screw spacing, 2 1/2 inches.
Standard finish on metal covers unless otherwise noted is polished nickel which will be supplied when the finish is not specified.

Carton, 2. Standard package, 10.
Weight package, 5 pounds.

No. 2046, Solid, Indicating..... per 100 \$331.00
No. 2634, Slotted, Indicating..... per 100 331.00

No. 4781 Bryant Triple-Pole Surface Rotary Switches

35 Amperes, 125 Volts—20 Amperes, 250 Volts—10 Amperes, 600 Volts
2Hp., 3-Phase, 230-575 Volts

With black bakelite cover; flat top.



No.	Per 100	Car-ton	Std. Pkg.	Wt., Lb.
4781	\$413.50	2	10	14

Bryant Surface Switches

With Porcelain Bases, Covers and Handles

Rotary switches can be converted into lock switches by removing the handles and substituting No. 2384 Universal Rotary Switch Lock Attachment.



Solid

Single-Pole

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

Diameter base, 2 inches. Height over cover, 1 1/8 inches; over handle, 2 5/8 inches. Screw spacing, 1 3/8 inches.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs.
2601	\$49.00	Solid.....	2	100	40
2602	49.00	Slotted.....	2	100	40
2603	55.50	Solid, Indicating.....	2	100	40
2604	55.50	Slotted, Indicating.....	2	100	40

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

Diameter base, 2 1/2 inches. Height over cover, 1 5/8 inches; over handle, 2 3/8 inches. Screw spacing, 1 3/4 inches.

2435	\$104.00	Solid, Indicating.....	2	30	16
2754	104.00	Slotted, Indicating.....	2	30	16

Double-Pole

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

Diameter base, 2 inches. Height over cover, 1 1/8 inches; over handle, 2 5/8 inches. Screw spacing, 1 3/8 inches.

2609	\$112.50	Solid, Indicating.....	2	10	4
2610	112.50	Slotted, Indicating.....	2	10	4

10 Amperes, 125 Volts; 10 Amperes, 250 Volts

Diameter base, 2 1/2 inches. Height over cover, 1 5/8 inches; over handle, 2 3/8 inches. Screw spacing, 1 3/4 inches.

2438	\$140.00	Solid, Indicating.....	2	10	5
2764	140.00	Slotted, Indicating.....	2	10	5

3-Way

5 Amperes, 125 Volts; 3 Amperes, 250 Volts

Diameter base, 2 inches. Height over cover, 1 1/8 inches; over handle, 2 5/8 inches. Screw spacing, 1 3/8 inches.

2605	\$78.50	Solid.....	2	10	4
2606	78.50	Slotted.....	2	10	4



Bryant Expulsion Type Switches
For Inductive Loads and Electric Railway Circuits



No. 2773

Designed with barriers between parts of opposite polarity which are effective in limiting the arc formed when the circuit is broken.

The window in the cover of the indicating switch, is located so that, when switch is mounted on a wall above eye level, the indications can be read right side up under the handle.

Slotted bases furnished on specifications.

Packed 2 in a carton, 50 in a standard package.

Single Pole

10 Amperes, 250 Volts—5 Amperes, 600 Volts

No.	Per 100	Description	Diam. In.	Screw Spacing In.	Wt., Lb. Std. Pkg.
*2049	\$125.50	Solid Base, Indicating....	2 1/16	1 3/4	20
		20 Amperes, 250 Volts—10 Amperes, 600 Volts			
2060	\$278.00	Solid Base, Indicating....	3 1/2	2 3/16	40
		30 Amperes, 250 Volts—20 Amperes, 600 Volts			
2303	\$326.50	Solid Base, Indicating....	3 3/16	2 5/16	50

Double Pole

10 Amperes, 250 Volts—5 Amperes, 600 Volts

*2773	\$163.50	Solid Base, Indicating....	2 1/16	1 3/4	25
		20 Amperes, 250 Volts—10 Amperes, 600 Volts			
2447	\$310.00	Solid Base, Indicating....	3 1/2	2 3/16	41

3-Way

10 Amperes, 250 Volts—5 Amperes, 600 Volts

*2179	\$148.50	Solid Base.....	2 1/16	1 3/4	18
*2413	163.50	Solid Base, Indicating, for 2-Circuit Use.....	2 1/16	1 3/4	18
		20 Amperes, 250 Volts—10 Amperes, 600 Volts			
2397	\$278.00	Solid Base.....	3 1/2	2 3/16	40
2415	295.00	Solid Base, Indicating, for 2-Circuit Use.....	3 1/2	2 3/16	40

4-Way

20 Amperes, 250 Volts—10 Amperes, 600 Volts

†2721	\$295.00	Solid Base.....	3 1/2	2 3/16	16
2411	295.00	Solid Base, Indicating, for 2-Circuit Use, Operating 1 Off, 2 Off.....	3 1/2	2 3/16	36

*Regularly equipped with bakelite cover.
†Not listed as standard by Underwriters' Laboratories, Inc.

‡Packed 10 in a carton; 20 in a standard package.

Bryant Reversible Triple-Pole Expulsion Type Surface Switches

For Inductive Loads

35 Amperes, 125 Volts; 20 Amperes, 250 Volts; 10 Amperes, 600 Volts
2 H.P. 3-Phase, 250-600 Volts



No. 781

For controlling 3-phase a.c. motors up to and including 2 h.p.

The switch mechanism has a composition base and handle which serves to indicate the position of the switch. Two covers are available: One is cast iron, lined, finished black, designed to be attached to conduit fittings made by The Crouse-Hinds Co., The Appleton Electric Co., The Columbia Metal Box Co., and the V. V. Fittings Co.; the other cover is stamped steel, finished black, with insulating lining.

The cast iron cover is dust-tight and ideal for use in flour and textile mills.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
780	\$371.00	Switch Only, No Cover....	2	10	13
781	662.50	Switch with Black Cast Iron Cover, Indicating.....	2	10	40
782	413.50	Switch with Stamped Steel Cover, Indicating.....	2	10	16

No. 2077 Bryant Expulsion Type Surface Switches

For Inductive Loads and Railway Circuits
Single-Pole, Fusible, with Porcelain Base, Cover and Handle

3 Amperes, 600 Volts



An open link fuse is laid in a groove near the edge of the cover.

Has No. 2781 porcelain handle. Slotted, indicating base. Diameter, $3\frac{3}{8}$ inches.

Height over cover, $1\frac{1}{2}$ inches. Height over handle, $2\frac{3}{8}$ inches. Supporting screw spacing, $1\frac{1}{16}$ inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2077	\$240.00	1	10	9 $\frac{1}{2}$

Bryant Expulsion Type Electric Railway Surface Switches

Single-Pole, Brown Porcelain Base, Cover, Handle

3 Amperes, 600 Volts

Connections for one enclosed fuse No. 2316.

Has No. 2782 brown porcelain handle.

Solid, indicating base, size $3\frac{1}{2} \times 3$ inches.

Height over cover, $1\frac{23}{32}$ inches; over handle, $2\frac{1}{2}$ inches.

Screw spacings, $3\frac{1}{8} \times \frac{5}{8}$ in.

No. Per 100 Car-ton Std. Pkg. Wt., Lbs. Std. Pkg.

2315 \$246.00 1 25 45

Ferrule Type Cartridge Fuse

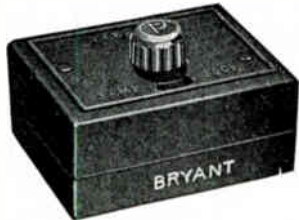
For use with No. 2315.

Enclosed, indicating base.

Length, $3\frac{3}{16}$ inches.

Diameter, $\frac{1}{16}$ inch.

2316 \$23.50 25 100 4



No. 2315

Bryant 3-Speed Motor Control Switches

Operating 1, 2, 3, Off

10 Amperes, 125 Volts; 5 Amperes, 250 Volts



First position, circuit 1 on; 2nd position, circuit 1 off and circuit 2 on; 3rd position, circuits 1 and 2 off, circuit 3 on; 4th position, all circuits off.

Diameter of base, $2\frac{1}{16}$ inches.

Height over cover, $1\frac{1}{16}$ inches.

Height over handle, $2\frac{1}{4}$ inches.

Supporting screw spacing, $1\frac{1}{4}$ inches.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2666	\$165.50	Solid, Indicating . . .	2	10	3 $\frac{3}{4}$
2667	165.50	Slotted, Indicating . . .	2	10	3 $\frac{3}{4}$

Bryant Porcelain Sub-Bases

For devices whose bases are $2\frac{5}{16}$ inches in maximum diameter to $1\frac{1}{8}$ inches minimum diameter and having screw spacings from $\frac{3}{4}$ to $1\frac{3}{8}$ inches.

Carton, 10. Standard package, 100.



No. 2383 or 2222

Cat. No.	Per 100	Description	Wt., Lbs. Std. Pkg.
2381	\$10.00	For Surface Work	19
2383	10.00	For Molding Work	19

For devices whose bases are $2\frac{5}{8}$ inches in maximum diameter to $2\frac{1}{4}$ inches minimum diameter and having screw spacings from $\frac{3}{4}$ to $1\frac{1}{4}$ inches.

Carton, 10. Standard package, 100.



No. 2381 or 2357

2357	\$10.00	For Surface Work . .	33
2222	10.00	For Molding Work . .	33

Bryant Standard Heater Type and Standard Range Type Switches



3-Heat Switch

Surface heater switch, reversible rotation, with indicating handle.

Nickel silver angle cover with raised polished indications on japanned black background.

Solid base.

Single-Pole

Series-Parallel, 3-Heat—Operating High, Medium, Low, Off

Cat. No.	Per 100	AMPERES 125 Volts	250 Volts	Base Diam. Inches	Mounting Screw Centers Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lbs.
6249	\$160.00	6	3	2 $\frac{1}{32}$	1 $\frac{1}{16}$ to 1 $\frac{1}{2}$	2	10	4
6259	180.00	10	5	2 $\frac{3}{16}$	1 $\frac{1}{16}$ to 1 $\frac{1}{2}$	2	10	4
6269	200.00	15	7 $\frac{1}{2}$	2 $\frac{1}{2}$	1 $\frac{21}{32}$ to 1 $\frac{3}{4}$	2	10	6
6279	220.00	20	10	2 $\frac{3}{16}$	1 $\frac{21}{32}$ to 1 $\frac{3}{4}$	2	10	8
6289	320.00	30	15	3 $\frac{5}{16}$	2 $\frac{1}{16}$ to 2 $\frac{3}{16}$	2	10	13
6299	400.00	36	18	3 $\frac{5}{8}$	2 $\frac{5}{8}$ to 2 $\frac{3}{4}$	2	10	16
6209	500.00	42	21	4	2 $\frac{5}{8}$ to 2 $\frac{3}{4}$	2	10	19

Operating On and Off

6247	\$120.00	6	3	2 $\frac{1}{32}$	1 $\frac{1}{16}$ to 1 $\frac{1}{2}$	2	10	4
6257	160.00	10	5	2 $\frac{3}{16}$	1 $\frac{1}{16}$ to 1 $\frac{1}{2}$	2	10	4
6267	180.00	15	7 $\frac{1}{2}$	2 $\frac{1}{2}$	1 $\frac{21}{32}$ to 1 $\frac{3}{4}$	2	10	6
6277	220.00	20	10	2 $\frac{3}{16}$	1 $\frac{21}{32}$ to 1 $\frac{3}{4}$	2	10	7
6287	300.00	30	15	3 $\frac{5}{16}$	2 $\frac{1}{16}$ to 2 $\frac{3}{16}$	2	10	14
6297	360.00	36	18	3 $\frac{5}{8}$	2 $\frac{5}{8}$ to 2 $\frac{3}{4}$	2	10	16
6207	430.00	42	21	4	2 $\frac{5}{8}$ to 2 $\frac{3}{4}$	2	10	19

Double-Pole

Series Parallel, 3-Heat—Operating High, Medium, Low, Off

6258	\$200.00	10	5	2 $\frac{3}{16}$	1 $\frac{1}{16}$ to 1 $\frac{1}{2}$	2	10	5
6278	260.00	20	10	2 $\frac{3}{16}$	1 $\frac{21}{32}$ to 1 $\frac{3}{4}$	2	10	8
6288	360.00	30	15	3 $\frac{5}{16}$	2 $\frac{1}{16}$ to 2 $\frac{3}{16}$	2	10	13
6298	520.00	36	18	3 $\frac{5}{8}$	2 $\frac{5}{8}$ to 2 $\frac{3}{4}$	2	10	17
6208	620.00	42	21	4	2 $\frac{5}{8}$ to 2 $\frac{3}{4}$	2	10	19

Operating On and Off

6246	\$160.00	6	3	2 $\frac{1}{32}$	1 $\frac{1}{16}$ to 1 $\frac{1}{2}$	2	10	4
6256	180.00	10	5	2 $\frac{3}{16}$	1 $\frac{1}{16}$ to 1 $\frac{1}{2}$	2	10	4
6266	200.00	15	7 $\frac{1}{2}$	2 $\frac{1}{2}$	1 $\frac{21}{32}$ to 1 $\frac{3}{4}$	2	10	6
6276	220.00	20	10	2 $\frac{3}{16}$	1 $\frac{21}{32}$ to 1 $\frac{3}{4}$	2	10	7
6286	320.00	30	15	3 $\frac{5}{16}$	2 $\frac{1}{16}$ to 2 $\frac{3}{16}$	2	10	14
6296	400.00	36	18	3 $\frac{5}{8}$	2 $\frac{5}{8}$ to 2 $\frac{3}{4}$	2	10	17
6206	500.00	42	21	4	2 $\frac{5}{8}$ to 2 $\frac{3}{4}$	2	10	19

These switches can be furnished with flat top covers instead of angle covers at the same prices. Specify by changing the second digit of the catalogue number from 2 to 3. Viz. No. 6349—instead of No. 6249, etc.



Ceiling Type

Bryant Pull Switches

Each switch is supplied with short chain and connector and 8 feet of heavy cord, size 3½, and large black composition ball.

Standard finish on metal covers is polished nickel which will be supplied when the finish is not specified.



Wall Type

Ceiling Type with Porcelain Bases and Bakelite Covers

Non-Indicating

Diameter of base, 2⅝ inches. Height over cover, 2⅝ inches. Supporting screw spacing, 1¾ inches.

Cat. No.	Per 100	Description	AMPERES		Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
			125 Volts	250 Volts			
2387	\$170.00	Single-Pole, Solid....	10	5	10	30	16
2309	170.00	Single-Pole, Slotted..	10	5	10	30	16
2396	196.50	Double-Pole, Solid....	10	10	2	10	5½
2314	196.50	Double-Pole, Slotted..	10	10	2	10	5½
2388	212.00	3-Point, Solid.....	10	5	2	10	5½
2310	212.00	3-Point, Slotted.....	10	5	2	10	5½
2389	424.00	4-Point, Solid.....	5	2	2	10	5½
2311	424.00	4-Point, Slotted.....	5	2	2	10	5½

*2390	\$233.50	Solid.....	10	5	2	10	5½
		Electrolier, 3-Circuit, Operating 1, 1 & 2, 1 & 2 & 3, Off	10	5	2	10	5
2395	\$233.50	Solid.....	10	5	2	10	5

3-Speed Motor Control, Operating 1, 2, 3, Off
Diameter of base, 2¼ inches. Diameter of cover, 2¼ inches. Height over cover, 2½ inches. Supporting screw spacing, 1⅝ inches.

2863	\$233.50	Solid.....	10	5	2	10	5
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For 3¼ and 4-Inch Outlet Boxes							
Cat. No.	Per 100	Description	AMPERES		Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
			125 Volts	250 Volts			
		Diameter of base, 4⅝ inches. Supporting screw spacings, 2¾ and 3½ inches.					
2769	\$212.00	Single-Pole.....	10	5	2	10	13
2770	238.50	Double-Pole.....	10	10	2	10	13

For Type 500 Adaptboxes, Types GN, HM, and W (Forms 5 and 10) Octagonal Unilets and Size 10 Round Opening Pipe Taplets

Base diameter, 2⅝ in. Supporting screw spacing, 2⅝ in.
2694 \$170.00 Single Pole..... 10 5 10 20 12

Ceiling and Wall Type with Porcelain Bases and Bakelite Covers

Non-Indicating, with Cadmium-Plated Covers
For 3¼-Inch Outlet Boxes

Diameter of cover, 3½ inches. Height of cover, 2¼ inches. Screw spacing, 2¾ inches. Porcelain base, 2¼ inches in diameter, extends ⅝ inch below box cover.

4331	\$180.50	Single-Pole.....	10	5	10	30	18
4332	207.00	Double-Pole.....	10	10	2	10	6
4333	233.50	3-Point.....	10	5	2	10	6
4334	435.00	4-Point.....	5	2	2	10	6
*4335	244.00	2-Circuit, 1, 2, 1 & 2, Off..	10	5	2	10	6½

For 4-Inch Outlet Boxes
Diameter of cover, 4⅝ inches. Height of cover, 1¾ inches. Screw spacing, 3½ inches. Porcelain base, 2¼ inches in diameter, extends ⅝ inch below box cover.

4341	\$185.50	Single-Pole.....	10	5	10	30	23
4342	212.00	Double-Pole.....	10	10	2	10	8
4343	238.50	3-Point.....	10	5	2	10	8
4344	440.00	4-Point.....	5	2	2	10	8
*4345	249.50	2-Circuit 1, 2, 1 & 2, Off..	10	5	2	10	7¾

Wall Type with Porcelain Bases and Bakelite Covers

Non-Indicating

Diameter of base, 2⅝ inches. Height over cover, 2½ inches. Supporting screw spacing, 1¾ inches.

2546	\$170.00	Single-Pole, Solid....	10	5	10	30	16
2547	170.00	Single-Pole, Slotted..	10	5	10	30	16
2565	196.50	Double-Pole, Solid....	10	10	2	10	6
2566	196.50	Double-Pole, Slotted..	10	10	2	10	6
2549	212.00	3-Point, Slotted.....	10	5	2	10	5½
2560	424.00	4-Point, Slotted.....	5	2	2	10	6

*Can be used with 3-light lamps.

No. 2842 Bryant Canopy Pull Switches

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

Each switch is provided with two washers for mounting in outlet boxes.

Furnished with short chain and 4 feet of cord.

Stem, 1⅜ inch long.

Has brown bakelite body, brass shell, and screw terminals.

Standard finish of exposed parts is brush brass which will be furnished when no finish is specified. Flash silver, bronze, or black, when specified, will be furnished without additional charge.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
2842	\$70.00	10	100	16

Bryant Rotary Switch Handles



No. 2779



No. 2780



No. 2781

All switch handles, lock attachments, and switch center posts, except heater and reversible switches, are threaded 8x32 except No. 18150. The handles differ in external shape and size for purposes of leverage appropriate to the size of the switch. When switches are ordered without these handles, deduct from list \$2.00 per 100.

In an emergency, any available handle can be attached to any switch. The list below shows in a general way what handles are suitable for various sizes of switches.

Cat. No.	Per 100	Description	SIZE SWITCH, AMPS.		Std. Pkg.
			125 and 250 Volts	600 Volts	
2777	\$13.00	Round, Composition....	3, 5, 10	....	100
2779	13.00	Flat, Composition.....	20	....	100
2780	13.00	Flat, Composition.....	30	....	100
2781	13.00	Round, White Porcelain.	3, 5, 10	3, 5	100
18150	21.50	For No. 780, 781, 782, with Screw & Spring....	....	....	10

Bryant Heater Switch Handles

Porcelain Indicating Handles for No. 6200 Line of Reversible Switches



No. 6201



No. 6203

Cat. No.	Per 100	Description	SIZE SWITCH, AMPS.		Std. Pkg.
			125 and 250 Volts	600 Volts	
6201	\$25.50	For Switch Nos. 6249, 6258, 6259, 6269, 6247, 6257, 6267, 6246, 6256, 6266.....	....	....	100
6202	25.50	6279, 6278, 6277, 6276.....	....	....	100
6203	25.50	6289, 6288, 6287, 6286.....	....	....	100
6204	25.50	6299, 6209, 6298, 6208, 6297, 6207, 6296, 6206.....	....	....	100

Bryant Lock Attachments and Keys
No. 2384 Rotary Switch Lock Attachments



No. 2384

By substituting this lock attachment for the handle on any Bryant Rotary Switch, except heater and reversible switches, lock switches are obtained. Polished nickel.

Packed 20 in a carton, 100 in a standard package. Weight standard package, 2 pounds. No. 2384.....per 100 \$24.50



No. 6000



No. 2299



No. 2850

Keys for Lock Switches

One key furnished with each lock switch. Packed 2 in a carton, 10 in a standard package. Weight standard package, 2 ounces.

No. 6000, for No. 2384 rotary; 3951 Line, 4961 Line, 3971 Line, 5421 Line, 5431 Line and IL Switches...per 100 \$16.00
No. 2299, for Push Lock.....per 100 16.00
No. 2850, for Combination Switches.....per 100 16.00

Bryant Push and Pull Switches

10 Amperes, 125 Volts—5 Amperes, 250 Volts
Listed by Underwriters' Laboratories, Inc.



No. 2421



No. 2473

Single Push Buttons

Cord hole, .406 (13/32) inch.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
2440	\$180.00	Single-Pole.....	10	30	10
2417	180.00	3-Way.....	2	10	4
2421	180.00	Double-Pole.....	2	10	4

Pendent Pull Switches

Thread, 3/8 inch.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
2473	\$195.00	Single-Pole.....	10	30	12
2480	195.00	3-Circuit (1, 2, 3, Off), Motor Control.....	2	10	4

Type T Bryant Pendent and Cord Switches

With Metal Shells

Single-Pole



No. 2572



No. 2370

With Push-Through Buttons

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

Brush brass finish.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
*2572	\$64.00	Pendent Cap.....	10	100	16

With 2 Buttons on Bottom, Small Pattern

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

2370	\$85.00	Pendent Cap.....	10	100	27
2270	106.00	3/8-Inch Cap.....	10	100	27

With 2 Buttons on Bottom, Large Pattern

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

2359	\$138.00	Pendent Cap.....	10	100	36
2354	159.00	3/8-Inch Cap.....	10	100	36

*Can be furnished, when specified, with removable buttons at \$7.00 list per 100 devices additional.



No. 8051

Hubbell Battery Switches and Plates

10 Amperes, 24 Volts

Screw spacings, 1 13/16 inches.
Handle, 3/4 inch.

May be furnished with luminous tipped handle at a slight additional charge.



No. 8071

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lb. Std. Pkg.
8051	\$61.00	Single Pole.....	25	100	9
8053	91.00	3-Way.....	25	100	13
8055	86.00	Momentary Contact.....	25	100	10
8057	132.00	Comb. Battery Magneto.....	5	50	5
8060	132.00	Comb. Starter Magneto.....	5	50	5
8071	20.00	Single Plate.....	25	100	3
8072	40.00	2-Gang Plate.....	10	50	2

Pendent Switches

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

For kitchen lighting units which are placed out of reach. Takes any standard parallel or tandem blade attachment plug cap.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
H9081	\$66.00	10	50	9

Hubbell Ceiling Pull Switches

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

Supplied with 8 feet of black cord.
Diameter of base, 2 1/2 inches. Mounting screws spaced 1 1/2 inches on centers.



No. 7651

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
7650	\$170.00	S.P., Slotted Base..	10	30	18
7651	170.00	S.P., Solid Base....	10	30	18
*7652	196.50	D.P., Slotted Base..	10	10	6
*7655	196.50	D.P., Solid Base...	10	10	6
7653	212.00	3-Way, Slotted Base	10	10	8
7654	212.00	3-Way, Solid Base..	10	10	8

*In 10 amperes, 250 volts, only.

No. 271 Hubbell Bakelite Cord Switches

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

A single pole switch fitted with large head binding screws. Ample space is provided in wiring channels.

Carton, 10. Standard package, 50.

Weight per standard package, 6 pounds.

No. 271..... per 100 \$32.00



Hubbell Pendant or Feed-Thru Switches

10 Amperes, 125 Volts; 5 Amperes, 250 Volts



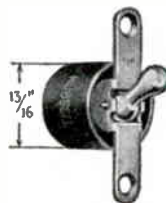
No. 275

An acorn shaped knob and a strain relief metal cord-grip is provided with each switch to adapt it for use as a pendant switch.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
275	\$38.50	Single Pole, Black Bakelite.....	10	50	5
276	70.00	Single Pole, Momentary "On".....	10	50	5

Hubbell Battery Toggle Switches

20 Watts



No. 8250



No. 8250 Switch with No. 8251 Plate



No. 8260 Switch with No. 8262 Plate

Standard finishes; polished nickel, satin nickel and black enamel. Polished nickel furnished unless otherwise specified.
Packed 25 in a carton, 100 in a standard package.

No.	Per 100	Description	Screw Spacings Inches	Wt. Lb. Std. Pkg.
8250	\$36.00	Single Pole.....	1 1/2-1 3/8	7
8260	36.00	Single Pole, Recessed.....	1 1/4-1 3/8	5
8254	36.00	Single Pole.....	1 1/2	6
8253	57.00	3-Way.....	1 1/2-1 3/8	6
8263	57.00	3-Way, Recessed.....	1 1/4-1 3/8	5
8071	20.00	Single Brass Plate.....	1 1/2	3
8251	15.00	Single Brass Plate.....	1 1/2	2
8262	20.00	Single Recessed Plate.....	1 3/8	2

Hubbell Specification Grade Flush Toggle Switches

Enclosed Bakelite Base

With T Rating for Type C Lamp Loads

This switch solves the Type C lamp problem.

With Bakelite Handle

This switch will fit 1½-inch switch boxes. Both brown and black handles are standard; brown will be furnished unless otherwise specified.

If desired grounded, suffix letter G to number.



No. 9801

No.	Per 100	Description	AMPERES 125V. 250V.	Car- ton	Std. Wt. Pkg. Lb.	Pkg. Lb.
*9801	\$85.00	S.P., Ind..	10 5	10 10	50 12	12
*9802	138.00	D.P., Ind..	10 10	10 10	10 3	3
*9803	106.00	3-Way....	10 5	10 20	6	6
9933	159.00	3-Way....	20 10	10 10	3	3
*9804	339.50	4-Way....	5 2	10 10	3	3
*9805	138.00	S.P., Ind..	20 10	10 20	8	8
*9806	159.00	D.P., Ind..	20 10	10 10	3	3

With Metal Handle

Regularly supplied grounded. Standard finish is brush brass.



No. 7901

No.	Per 100	Description	AMPERES 125V. 250V.	Car- ton	Std. Wt. Pkg. Lb.	Pkg. Lb.
*7901	\$115.00	S.P., Ind..	10 5	10 50	14	14
*7902	168.00	D.P., Ind..	10 10	10 10	3	3
*7903	136.00	3-Way....	10 5	10 20	6	6
9623	189.00	3-Way....	20 10	10 10	4	4
*7904	369.50	4-Way....	5 2	10 10	4	4
*7905	168.00	S.P., Ind..	20 10	10 20	8	8
*7906	189.00	D.P., Ind..	20 10	10 10	4	4

With Rubber Handle



No. 7701

No.	Per 100	Description	AMPERES 125V. 250V.	Car- ton	Std. Wt. Pkg. Lb.	Pkg. Lb.
7701	\$92.00	S.P., Ind..	10 5	10 50	12	12
7702	145.00	D.P., Ind..	10 10	10 10	3	3
7703	113.00	3-Way....	10 5	10 20	6	6
7704	346.50	4-Way....	5 2	10 10	3	3
7705	145.00	S.P., Ind..	20 10	10 20	8	8
7706	166.00	D.P., Ind..	20 10	10 10	3	3

Locking Type

One No. 8965 key furnished with each switch.



No. 9701

No.	Per 100	Description	AMPERES 125V. 250V.	Car- ton	Std. Wt. Pkg. Lb.	Pkg. Lb.
9701	\$160.00	S.P.....	10 5	10 50	12	12
9702	213.00	D.P.....	10 10	10 10	3	3
9703	181.00	3-Way....	10 5	10 20	4	4
9613	234.00	3-Way....	20 10	10 10	3	3
9704	414.50	4-Way....	5 2	10 10	3	3
9705	213.00	S.P.....	20 10	10 20	8	8
9706	234.00	D.P.....	20 10	10 10	3	3
8965	16.00	Key.....	.. ..	.. ..	100 2	2

With Ivorine Handle



No. 9801-I

No.	Per 100	Description	AMPERES 125V. 250V.	Car- ton	Std. Wt. Pkg. Lb.	Pkg. Lb.
9801-I	\$95.00	S.P., Ind..	10 5	10 25	7	7
9802-I	148.00	D.P., Ind..	10 10	10 10	8	8
9803-I	116.00	3-Way....	10 5	10 10	7	7
9933-I	169.00	3-Way....	20 10	10 10	7	7
9804-I	349.50	4-Way....	5 2	10 10	6	6
9805-I	148.00	S.P., Ind..	20 10	10 10	7	7
9806-I	169.00	D.P., Ind..	20 10	10 10	8	8

*Can be supplied with luminous tip on handle at an addition of \$40.00 per 100 units.

Hubbell Standard Grade Flush Toggle Switches

Porcelain Base

With T Rating for Type C Lamp Loads

With Bakelite Handle

Both brown and black handles are standard. Brown furnished unless otherwise specified. If desired grounded, suffix letter G to number.



No. 8801

No.	Per 100	Description	AMPERES 125 V. 250 V.	Car- ton	Std. Wt. Pkg. Lb.	Pkg. Lb.
*8801	\$35.00	S.P., Ind.	10 5	10 100	34	34
*8941	89.50	S.P., Ind.	.. 20	10 50	19	19
8942	127.50	D.P., Ind.	.. 20	10 20	13	13
*8802	89.50	D.P., Ind.	10 10	10 50	19	19
*8803	57.50	3-Way...	10 5	10 50	19	19
*8804	297.00	4-Way...	5 2	10 10	5	5

With Metal Handle

Standard finish is brush brass. Regularly supplied grounded.



No. 7801

No.	Per 100	Description	AMPERES 125 V. 250 V.	Car- ton	Std. Wt. Pkg. Lb.	Pkg. Lb.
*7801	\$65.00	S.P., Ind.	10 5	10 100	38	38
*7802	119.50	D.P., Ind.	10 10	10 50	19	19
7842	157.50	D.P., Ind.	.. 20	10 20	14	14
*7803	87.50	3-Way...	10 5	10 50	20	20
*7804	327.00	4-Way...	5 2	10 10	5	5
*7805	119.50	S.P., Ind.	.. 20	10 10	5	5

With Rubber Handle



No. 7601

No.	Per 100	Description	AMPERES 125 V. 250 V.	Car- ton	Std. Wt. Pkg. Lb.	Pkg. Lb.
7601	\$42.00	S.P., Ind.	10 5	10 100	34	34
7602	96.50	D.P., Ind.	10 10	10 50	20	20
7603	64.50	3-Way...	10 5	10 50	19	19
7604	304.00	4-Way...	5 2	10 10	4	4
7605	96.50	S.P., Ind.	.. 20	10 10	4	4

Locking Type

For use with standard rectangular opening switch plates. One key furnished with each switch.



No. 8961

Brush brass and black standard finishes on key way. Brush brass furnished unless otherwise specified. Regularly supplied grounded.

No.	Per 100	Description	AMPERES 125 V. 250 V.	Car- ton	Std. Wt. Pkg. Lb.	Pkg. Lb.
8961	\$110.00	S.P.....	10 5	10 100	34	34
8962	164.50	D.P.....	10 10	10 50	19	19
8963	132.50	3-Way...	10 5	10 50	18	18
8964	372.00	4-Way...	5 2	10 10	4	4
8965	16.00	Key.....	.. ..	.. ..	100 2	2

With Ivorine Handle



No. 8801-I

No.	Per 100	Description	AMPERES 125 V. 250 V.	Car- ton	Std. Wt. Pkg. Lb.	Pkg. Lb.
8801-I	\$45.00	S.P., Ind.	10 5	10 50	19	19
8941-I	99.50	S.P., Ind.	.. 20	10 10	6	6
8942-I	137.50	D.P., Ind.	.. 20	10 10	7	7
8802-I	99.50	D.P., Ind.	10 10	10 25	10	10
8803-I	67.50	3-Way...	10 5	10 25	10	10
8804-I	307.00	4-Way...	5 2	10 10	8	8

*Can be supplied with luminous tip on handle at an addition of \$40.00 per 100 units.

Hubbell Momentary Contact Toggle Switches

Enclosed Bakelite Base and Bakelite Handle



No. 9601

With T Rating for Type C Lamp Loads

Will fit 1½-inch switch boxes. Furnished either normally open or normally closed as listed below.

Nor- mally Closed No.	Nor- mally Open No.	Per 100	Description	AMPERES			Pkg. Std. Wt. Lb.	
				125 V.	250 V.	Car- ton		
9601	9901	\$195.00	S.P., Ind..	10	5	10	50	13
9602	9902	248.00	D.P., Ind..	10	10	10	10	4
.....	9903	216.00	3-Way....	10	5	10	20	8

Hubbell Sphinx Mercury Flush Toggle Switches

5 Amperes, 250 Volts; 5 Amperes, 125 Volts—T
T Rating on 125 Volts Only, A.C. or D.C.

This switch cannot be mounted horizontally; must be mounted vertically. "Top" on one support indicates correct mounting position.

The 3 and 4-way type cannot be used with Master Control or Emergency Systems of wiring where all lights are turned on by a master switch.

With Bakelite Handle



No. 9711

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
9711	\$85.00	S.P., Ind...	10	100	21
9712	138.00	D.P., Ind...	10	50	14
9713	106.00	3-Way.....	10	50	14
9714	340.00	4-Way.....	2	10	3

With Ivorine Handle

No.	Per 100	Description	Car- ton	Std. Pkg.	Wt. Lb.
9711-I	\$95.00	S.P., Ind...	10	50	11
9712-I	148.00	D.P., Ind...	10	30	9
9713-I	116.00	3-Way.....	10	30	9
9714-I	350.00	4-Way.....	2	10	3

Hubbell Heavy Duty Flush Toggle Switches

With T Rating for Type C Lamp Loads



No. 2971



No. 2971-L

Length, 2¾ inches. Width, 1½ inches. Depth, 1¾ inches.

One key furnished with each locking switch.

Std. Type No.	Per 100	Lock Type		Description	AMPERES			Pkg. Std. Wt. Lb.	
		No.	Per 100		125 V.	250 V.	Car- ton		
2971	\$138.00	2971-L	\$213.00	Single Pole...	20	20	10	30	20
2972	180.50	2972-L	255.50	Double Pole..	20	20	2	10	6
2973	159.00	2973-L	234.00	3-Way.....	20	20	2	10	6
2974	477.00	2974-L	552.00	4-Way.....	20	10	2	10	4
2923	170.00	2923-L	245.00	Single Pole...	30	30	10	30	20
2924	244.00	2924-L	319.00	Double Pole..	30	30	2	10	6
2925	212.00	2925-L	287.00	3-Way.....	30	30	2	10	6
2926	636.00	2926-L	711.00	4-Way.....	20	10	2	10	4
.....	.....	2308	16.00	Key.....	.....	.....	10	100	2

Hubbell Push Button Switches

One key is furnished with each lock type switch.



No. 4401

No.	Per 100	Description	AMPERES 125 V. 250 V.	Car- ton	Std. Pkg.	Wt. Lb.
4401	\$41.00	S.P.....	10	5	10	100
4402	117.00	D.P.....	..	10	10	50
4403	59.50	3-Way..	10	5	10	50
4404	331.00	4-Way..	5	2	10	10

Lock Type

No.	Per 100	Description	AMPERES 125 V. 250 V.	Car- ton	Std. Pkg.	Wt. Lb.
4401-L	\$116.00	S.P.....	10	5	10	100
4402-L	192.00	D.P.....	..	10	10	50
4403-L	134.50	3-Way..	10	5	10	50
4404-L	406.00	4-Way..	5	2	10	10
4405	16.00	Key....	..	..	20	100

Hubbell Outdoor Weatherproof Flush Switches



No. 7981



No. 7991

Mechanism is protected from moisture, weather or atmospheric conditions. Switch is operated with a lever pointing to On and Off indications stamped on the plate.

A cadmium finish brass plate fits over a rubber mat to make it water tight. Number includes plate and rubber mat.

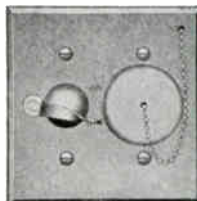
No.	Per 100	Description	AMPERES 125 V. 250 V.	Car- ton	Std. Pkg.	Wt. Lb.
7981	\$174.00	Single Pole.....	10	5	2	10
7982	228.00	Double Pole.....	..	10	2	10
7983	196.50	3-Way.....	10	5	2	10
7984	436.00	4-Way.....	5	2	2	5

For FS Type Fittings

Same as the above switches, except furnished with cadmium finished steel plate with rounded edges, for FS Type fittings.

No.	Per 100	Description	AMPERES 125 V. 250 V.	Car- ton	Std. Pkg.	Wt. Lb.
7991	\$195.50	Single Pole.....	10	5	2	10
7992	249.50	Double Pole.....	..	10	2	10
7993	217.50	3-Way.....	10	5	2	10
7994	457.00	4-Way.....	5	2	2	5

Hubbell 2-Gang Unit Weatherproof Switches and Receptacles



No. 7885

This unit is complete with switch, receptacle, cadmium finished brass plate and rubber mat.

No.	Per 100	Description	AMPERES 125 V. 250 V.	Car- ton	Std. Pkg.	Wt. Lb.
7886	\$346.00	Single Pole.....	10	5	2	10
7887	400.00	Double Pole.....	..	10	2	10
7888	368.00	3-Way.....	10	5	2	10
7889	608.00	4-Way.....	5	2	2	10

Hubbell Bakelite Flush Toggle Switches

Residential Type

10 Amperes, 125 Volts; 5 Amperes, 250 Volts



No.	Per 100	Description	Carton Pkg.	Std. Pkg.	Wt. Lb.
7401	\$22.00	S.P. Indicating	10	100	14
7401-I	28.00	S.P. Ivoryne	10	100	14
7403	30.00	3-Way	10	50	9
7403-I	36.00	3-Way, Ivoryne	10	50	9

For 3 1/4 and 4-Inch Outlet Boxes



No.	Per 100	Description	Carton Pkg.	Std. Pkg.	Wt. Lb.
7441	\$30.00	S.P., 3 1/4-Inch Cover	10	50	21
7443	38.00	3-Way, 3 1/4-Inch Cover	10	50	21
7451	32.00	S.P., 4-Inch Cover	10	50	25
7453	40.00	3-Way, 4-Inch Cover	10	50	25
7444	34.00	S.P. Oil Burner Switch on 3 1/4-Inch Red Cover	10	50	18
7445	36.00	S.P. Oil Burner Switch on 4-Inch Red Cover	10	50	25

Hubbell Door Switches

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

Length of box, 3 5/8 inches; width, 1 1/4 inches; depth, 2 5/8 inches. Has one 5/8-inch knockout in bottom, one 5/8-inch knockout in one end, and one 1/8-inch knockout in other end.



No. 2355

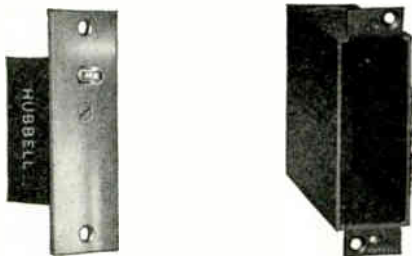
Self-Restoring—with Box—Single Pole

Packed 1 in a carton.

No.	Per 100	Description	Carton Pkg.	Std. Pkg.	Wt. Lb.
2355	\$375.50	*Switch On	25	31	
2356	375.50	*Switch Off	10	12	

*When door is open.

Small Door—Porcelain Lined Steel Box



No. 2022

No. 2035

Plate size, 3 3/4 x 1 1/4 inches. Hole required: width, 1 1/16 inches; length, 2 3/8 inches; and depth, 1 1/2 inches.

No.	Per 100	Description	Carton Pkg.	Std. Pkg.	Wt. Lb.
2022	\$339.50	Switch On When Door is Open	5	25	14
2023	339.50	Switch Off When Door is Closed	2	10	6
2035	60.50	Steel Box for Nos. 2022 & 2023	5	25	16

Hubbell Surface Toggle Switches



No. 9060

No. 9064

No. 9073

No. 9069

With Polished Nickel Covers

Carton, 10. Standard Package, 100.

No.	Per 100	Description	AMPERES 125V. 250V.	Diam. Base In.	Screw Hole Spacing In.	Pkg. Wt. Lb.
9060	\$38.50	S.P., Slotted	6 3	2	1 1/16	24
9061	38.50	S.P., Solid	6 3	2	1 1/16	23
9062	72.50	3-Way, Slotted	5 2	2 1/8	1 1/16	26
9063	72.50	3-Way, Solid	5 2	2 1/8	1 1/16	27

With Polished Nickel Covers—For Outlet Boxes

Outlet box covers are cadmium finished.

Carton, 5. Standard package, 50.

9064	\$46.00	S.P., 3 1/4-Inch Boxes	6 3	3 1/16	2 3/4	25
9065	47.00	S.P., 4-Inch Boxes	6 3	4 1/16	3 1/2	27
9066	79.50	3-Way, 3 1/4-Inch Boxes	5 2	3 1/16	2 3/4	24
9067	83.00	3-Way, 4-Inch Boxes	5 2	4 1/16	3 1/2	30

With Black Bakelite Covers

Carton, 10. Standard package, 100.

9072	\$38.50	S.P., Slotted	6 3	2	1 1/16	22
9073	38.50	S.P., Solid	6 3	2	1 1/16	22
9074	72.50	3-Way, Slotted	5 2	2 1/8	1 1/16	24
9075	72.50	3-Way, Solid	5 2	2 1/8	1 1/16	24

With Black Bakelite Covers—For Outlet Boxes

Outlet box covers are cadmium finished.

Carton, 5. Standard package, 50.

9068	\$46.00	S.P., 3 1/4-Inch Boxes	6 3	3 1/16	2 3/4	25
9069	47.00	S.P., 4-Inch Boxes	6 3	4 1/16	3 1/2	30
9070	79.50	3-Way, 3 1/4-Inch Boxes	5 2	3 1/16	2 3/4	25
9071	83.00	3-Way, 4-Inch Boxes	5 2	4 1/16	3 1/2	30

Hubbell Toggle Switches

With Metal Handles



No. 8171



No. 8112

Black porcelain base. Screw holes are elongated. Brush brass and nickel plate are standard finishes.

With 2 1/4-Inch O.D. Base

Screw spacings, 1 1/2 to 1 3/4 inches.

No.	Per 100	Description	AMPERES 125V. 250V.	Car-ton	Std. Pkg.	Wt. Lb.
8171	\$38.50	S.P., Solid	5 3	10	100	37
8191	38.50	S.P., Slotted	5 3	10	100	37
8421	89.50	S.P., Solid	10 5	10	100	37
8431	89.50	S.P., Slotted	10 5	10	100	37
8173	72.50	3-Way, Solid	5 3	10	100	37
8193	72.50	3-Way, Slotted	5 3	10	100	37

With 2 5/8-Inch O.D. Base

Screw spacings, 1 3/4 to 1 5/8 inches.

8112	\$127.50	D.P., Solid	10 10	10	100	57
8162	127.50	D.P., Slotted	10 10	10	100	58
8153	127.50	3-Way, Solid	10 5	10	50	20
8233	127.50	3-Way, Slotted	10 5	10	50	28

Hubbell Surface Snap Switches With Polished Nickel Covers



No. 9512

No. 9527

Single Pole

Pony Size—5 Amperes, 125 Volts; 3 Amperes, 250 Volts

Diameter of base, 2 inches. Screws spaced 1 1/32 inches.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
9510	\$38.50	Slotted	10	100	23
9511	45.00	Slotted, Ind.	10	100	23
9512	38.50	Solid	10	100	23
9513	45.00	Solid, Ind.	10	100	23

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

Diameter of base, 2 1/8 inches. Screws spaced 1 3/4 inches.

9515	\$89.50	Slotted, Ind.	10	100	42
9517	89.50	Solid, Ind.	10	100	42

Three-Way

3 Amperes, 125 Volts; 1 Ampere, 250 Volts

Diameter of base, 2 1/8 inches. Screws spaced 1 7/16 inches.

9330	\$72.50	Slotted	10	100	25
9331	72.50	Solid	10	100	25

Double Pole

5 Amperes, 250 Volts

Diameter of base, 2 3/8 inches. Screws spaced 1 7/16 inches.

9521	\$106.00	Slotted, Ind.	10	100	35
9523	106.00	Solid, Ind.	10	100	35

10 Amperes, 250 Volts

Diameter of base, 2 1/2 inches. Screws spaced 1 3/4 inches.

9525	\$127.50	Slotted, Ind.	10	100	42
9527	127.50	Solid, Ind.	10	100	42

Four-Way

5 Amperes, 125 Volts; 2 Amperes, 250 Volts

Diameter of base, 2 1/2 inches. Screws spaced 1 3/4 inches.

9540	\$270.50	Slotted	10	30	12
9541	270.50	Solid	10	30	12

Hubbell Toggle Appliance Switches

Single Pole



Nos. 8745 and 8659



Nos. 8650 and 8657

Diameter of neck, 1/2 inch. Diameter of switch base, 1 1/4 inches.

Standard finishes are brush brass or polished nickel.

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

Depth, 3/4 inch.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
*8650	\$54.00	With 1 1/4-Inch Neck	10	50	4
*8656	61.50	With 1/2-Inch Neck	10	50	4
8745	58.50	With 1 1/4-Inch Neck, Ind.	10	50	4
*8746	66.00	With 1/2-Inch Neck, Ind.	10	50	5

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

Depth, 1 1/8 inch.

8657	\$119.00	With 1 1/4-Inch Neck	10	50	4
8658	124.00	With 1/2-Inch Neck	10	50	4
8659	123.00	With 1 1/4-Inch Neck, Ind.	10	50	4
8660	128.00	With 1/2-Inch Neck, Ind.	10	50	5

*Can be supplied with luminous tip on handle at an addition of \$40.00 per 100 units.

Hubbell Acorn Wiring Devices

These Acorn Devices are designed and offered to meet competition, and priced accordingly. They should not be confused with the regular line of Hubbell Wiring Devices listed elsewhere.

Flush Toggle Switches

Bakelite Handles

10 Amperes, 125 Volts; 5 Amperes, 250 Volts



No. 9991



No. 9991-I



No. 9993

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
9991	\$12.50	Single Pole, Ind.	10	100	26
9991-I	13.50	Single Pole, Ind., Ivorine	10	50	14
9993	19.00	3-Way	10	50	15
9993-I	20.00	3-Way, Ivorine	10	25	8

Surface Toggle Switches

With Bakelite Covers

6 Amperes, 125 Volts; 3 Amperes, 250 Volts



No. 4443

Diameter of base, 2 inches. Screw spacings on centers, 1 1/16 inches.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
4442	\$16.00	Single Pole, Slotted Base	10	50	10
4443	16.00	Single Pole, Solid Base	10	50	10
4444	22.80	3-Way, Slotted Base	10	50	10
4445	22.80	3-Way, Solid Base	10	50	10

With Bakelite Covers—For Outlet Boxes

Single Pole: 6 Amperes, 125 Volts; 3 Amperes, 250 Volts
3-Way: 3 Amperes, 125 Volts; 2 Amperes, 250 Volts



No. 4431

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
4431	\$20.00	Single Pole, 3 1/4-Inch Box	10	50	26
4433	36.00	3-Way, 3 1/4-Inch Box	10	50	26
4451	21.00	Single Pole, 4-Inch Box	10	50	34
4453	38.00	3-Way, 4-Inch Box	10	50	30



H & H Flush Tumbler Switches

1-Inch Porcelain Base
With Composition Handles

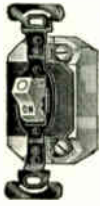


No. 8601

No.	Per 100	Description	—AMPERES—		Car-ton	Std. Pkg.	Pkg. Wt. Lb.
			125 V.	250 V.			
8601	\$35.00	Single Pole.....	10T	5	10	100	33
8914	89.50	Single Pole.....	20T	10	10	50	20
8602	89.50	Double Pole.....	10T	10	10	50	20
8931	127.50	Double Pole.....	20T	20	2	10	4
8603	57.50	Three-Way.....	10T	5	10	50	20
8913	117.00	Three-Way.....	20	10	2	10	4
8604	297.00	Four-Way.....	5T	2	2	10	4
8625	159.00	2-Circuit Electrolier..	10T	5	2	10	4
8624	159.00	3-Circuit Electrolier..	10T	5	2	10	4
8660	225.00	Double Pole, D.T....	10	5	10	50	20

H & H Flush Tumbler Switches

1-Inch Porcelain Base
With Ivorylite Handles



No. 8601-I

Ivorylite is a white, cream tinted material. The color is solid, moulded throughout. It is not a finish and will not chip, flake or wear off. Attractive in appearance, permanent and serviceable.

No.	Per 100	Description	—AMPERES—		Car-ton	Std. Pkg.	Pkg. Wt. Lb.
			125 V.	250 V.			
8601-I	\$45.00	Single Pole.....	10T	5	10	50	16
8914-I	98.00	Single Pole.....	20T	10	2	10	4
8602-I	99.50	Double Pole.....	10T	10	10	25	10
8931-I	137.50	Double Pole.....	20T	20	2	10	4
8603-I	67.50	Three-Way.....	10T	5	10	25	10
8913-I	125.50	Three-Way.....	20	10	2	10	4
8604-I	307.00	Four-Way.....	5T	2	2	10	4

H & H Flush Tumbler Switches

1-Inch Composition Base
With Composition Handles



No. 1611

No.	Per 100	Description	—AMPERES—		Car-ton	Std. Pkg.	Pkg. Wt. Lb.
			125 V.	250 V.			
1611	\$85.00	Single Pole.....	10T	5	10	50	16
3933	138.00	Single Pole.....	20T	20	10	20	8
1612	138.00	Double Pole.....	10T	10	2	10	4
3939	159.00	Double Pole.....	20T	20	2	10	4
1613	106.00	Three-Way.....	10T	5	10	20	8
8916	159.00	Three-Way.....	20	10	2	10	4
1614	339.50	Four-Way.....	5T	2	2	10	4

H & H Flush Tumbler Switches

Residential Type
With Composition Handles
10 Amperes, 125 Volts
5 Amperes, 250 Volts



No. 1881

Completely enclosed mechanism in small bakelite base, 1 inch deep, 1½ inches long, ⅞ inch wide, allowing generous wiring room in any switch box. Large binding screws accommodate heavy wire.

Fits standard tumbler plates.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
1881-I	28.00	Single Pole, Ivorylite.....	10	100	15
1883	30.00	Three-Way, Bakelite.....	10	50	8
1883-I	36.00	Three-Way, Ivorylite.....	10	50	8

H & H Type C Tumbler Switches

1½-Inch Bakelite Base, 10 Amperes
With Composition Handles



No. 1531



No. 1532

No.	Per 100	Description	—AMPERES—		Car-ton	Std. Pkg.	Pkg. Wt. Lb.
			125 V.	250 V.			
1531	\$85.00	Single Pole.....	10T	5	10	50	16
1532	138.00	Double Pole.....	10T	10	2	10	4
1533	106.00	Three-Way.....	10T	5	10	20	8
1534	339.50	Four-Way.....	5T	2	2	10	4

1½-Inch Bakelite Base, 10 Amperes
With Ivorylite Handles



No. 1531-I



No. 1532-I

1531-I	\$95.00	Single Pole.....	10T	5	10	25	10
1532-I	148.00	Double Pole.....	10T	10	2	10	4
1533-I	116.00	Three-Way.....	10T	5	2	10	4
1534-I	349.50	Four-Way.....	5T	2	2	10	4

1½-Inch Bakelite Base, 20 Amperes

1541	\$138.00	Single Pole.....	20T	20	10	30	12
1542	159.00	Double Pole.....	20T	10	2	10	4
1543	159.00	Three-Way.....	20T	20	2	10	4
1544	339.50	Four-Way.....	5T	2	2	10	4
1545	159.00	S.P. Quad. Break....	20T	20	2	10	4

1½-Inch Bakelite Base,
20 Amperes



No. 1542-I

With Ivorylite Handles

1541-I	\$148.00	Single Pole.....	20T	20	10	30	12
1542-I	169.00	Double Pole.....	20T	10	2	10	4
1543-I	169.00	Three-Way.....	20T	20	2	10	4
1544-I	349.50	Four-Way.....	5T	2	2	10	4
1545-I	169.00	S.P. Quad. Break....	20T	20	2	10	4

2-Inch Bakelite Base, 20 Amperes

4281	\$138.00	Single Pole.....	20T	20	10	30	12
4282	180.50	Double Pole.....	20T	20	2	10	4
4283	159.00	Three-Way.....	20T	20	2	10	4
4286	477.00	Four-Way.....	20T	10	2	10	4
4284	159.00	S.P. Quad. Break....	20T	20	2	10	4

2-Inch Bakelite Base,
30 Amperes



No. 4272

With Composition Handles

4271	\$170.00	Single Pole.....	30T	30	10	30	13
4272	244.00	Double Pole.....	30T	30	2	10	4
4273	212.00	Three-Way.....	30T	30	2	10	4
4274	636.00	Four-Way.....	20T	10	2	10	4
4275	212.00	S.P. Quad. Break....	30T	30	2	10	4

These switches take standard tumbler plates, brass or bakelite.

H & H Sphinx Flush Tumbler Switches

Silent, Mercury Break

5 Amperes, 250 Volts, A.C. or D.C.
5 Amperes, 125 Volts, T, A.C. or D.C.
T Rating 125 Volts Only
(All Switches Carry This Rating)



No. 821



No. 822

This switch fits standard switch boxes and must be installed vertically. Top stamped on mounting ears shows the correct position.

With Brown Handles

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
821	\$85.00	Single Pole	10	100	21
822	138.00	Double Pole	10	50	14
823	106.00	Three-Way	10	50	14
824	340.00	Four-Way	2	10	4

With Ivorylite Handles

821-I	\$95.00	Single Pole	10	50	11
822-I	148.00	Double Pole	10	30	9
823-I	116.00	Three-Way	10	30	9
824-I	350.00	Four-Way	2	10	4

H & H Weatherproof Switches

For Outlet Boxes or Wall Cases

For installations exposed to weather, dampness and special atmospheric conditions as on porches, garages, patios, industrial plants and other exposed locations.

Switch is operated with a lever pointing to On and Off positions.

Each switch includes a brass plate, cadmium finished, and a weatherproof mat.



No. 7981

No.	Per 100	Description	—AMPERES—		Car-ton	Std. Pkg.	Pkg. Wt. Lb.
			125 V.	250 V.			
7981	\$174.00	Single Pole	10T	5	2	10	7
7865	228.00	Single Pole	20T	10	2	10	7
7982	228.00	Double Pole	10T	10	2	10	7
7866	266.50	Double Pole	20T	20	2	10	7
7983	196.50	Three-Way	10T	5	2	10	7
7867	255.50	Three-Way	20	10	2	10	7
7984	436.00	Four-Way	5T	2	2	5	4

H & H Door Switches

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

Nos. 6550 and 2022 are made so that light is on when door is open; No. 2023 so light is on when door is closed.

No. 6550 is rectangular in shape, mounted in a porcelain base, and fits all standard door switch boxes.



No. 6550

Nos. 2022 and 2023 are mounted in a steel box, porcelain lined.



No. 2022

No.	Per 100	Plate Dim. Inches	—HOLE REQUIRED, IN.—			Car-ton	Std. Pkg.	Pkg. Wt. Lb.
			Width	Length	Depth			
6550	\$339.50	4 5/8 x 1 1/4	1 1/8	3 3/8	1 5/8	5	25	15
2022	339.50	3 3/4 x 1 1/4	1 1/8	2 3/8	1 1/2	5	25	14
2023	339.50	3 3/4 x 1 1/4	1 1/8	2 3/8	1 1/2	2	10	6

SWITCHES WITH T RATING

Switches having the letter T as part of the rating are capable of controlling tungsten filament gas filled lamp loads corresponding to the 125-volt ampere rating of switches. For 5-ampere this means 625 watts, for 10-ampere, 1250 watts, for 20-ampere, 2500 watts and for 30-ampere, 3750 watts.

H & H Surface Tumbler Switches

Pony Type

With Nickel Cover

Single Pole, 6 Amperes, 125 Volts; 3 Amperes, 250 Volts
Three-Way, 5 Amperes, 125 Volts; 2 Amperes, 250 Volts



No. 611

Base diameter of single pole, 2 inches; three-way, 2 1/8 inches.

Screw hole spacing, 1 1/8 inches.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
611	\$38.50	Single Pole, Slotted	10	100	24
610	38.50	Single Pole, Closed	10	100	24
613	72.50	Three-Way, Slotted	10	100	25
612	72.50	Three-Way, Closed	10	100	26

H & H Surface Tumbler Switches

With Bakelite Cover

Single Pole, 6 Amperes, 125 Volts; 3 Amperes, 250 Volts
Three-Way, 5 Amperes, 125 Volts; 2 Amperes, 250 Volts



No. 610-BC

Base diameter of single pole, 2 inches; three-way, 2 1/8 inches.

Screw hole spacing, 1 1/8 inches.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
611-BC	\$38.50	Single Pole, Slotted	10	100	22
610-BC	38.50	Single Pole, Closed	10	100	22
613-BC	72.50	Three-Way, Slotted	10	100	24
612-BC	72.50	Three-Way, Closed	10	100	24

H & H Surface Tumbler Switches

With Nickel Cover

Single Pole, 3-Way, 4-Way, 10 Amperes, 125 Volts; 5 Amperes, 250 Volts
Double Pole, 10 Amperes, 250 Volts



No. 8471

Base diameter, 2 1/2 inches. Screw hole spacing, 1 3/4 inches.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
8472	\$89.50	Single Pole, Slotted	10	100	41
8471	89.50	Single Pole, Closed	10	100	42
8476	127.50	Three-Way, Slotted	10	50	20
8475	127.50	Three-Way, Closed	10	50	20
8474	127.50	Double Pole, Slotted	10	100	44
8473	127.50	Double Pole, Closed	10	100	44
8478	314.00	Four-Way, Slotted	2	10	5
8477	314.00	Four-Way, Closed	2	10	5

H & H Surface Tumbler Switches

With Bakelite Cover

Single Pole, 3-Way, 4-Way, 10 Amperes, 125 Volts; 5 Amperes, 250 Volts
Double Pole, 10 Amperes, 250 Volts



No. 8473-BC

Base diameter, 2 1/2 inches. Screw hole spacing, 1 3/4 inches.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
8472-BC	\$89.50	Single Pole, Slotted	10	100	41
8471-BC	89.50	Single Pole, Closed	10	100	41
8476-BC	127.50	Three-Way, Slotted	10	50	22
8475-BC	127.50	Three-Way, Closed	10	50	22
8474-BC	127.50	Double Pole, Slotted	10	100	44
8473-BC	127.50	Double Pole, Closed	10	100	44
8478-BC	314.00	Four-Way, Slotted	2	10	5
8477-BC	314.00	Four-Way, Closed	2	10	5

H & H Surface Tumbler Switches

**Pony Type
For Outlet Boxes**

With Nickel Switch Cover

Single Pole, 6 Amperes, 125 Volts; 3 Amperes, 250 Volts
Three-Way, 5 Amperes, 125 Volts; 2 Amperes, 250 Volts



No. 6064

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
6064	\$46.00	Single Pole, 3/4-In. Cover.....	5	50	21
6065	47.00	Single Pole, 4-In. Cover.....	5	50	30
6068	79.50	Three-Way, 3/4-In. Cover.....	5	50	25
6069	83.00	Three-Way, 4-In. Cover.....	5	50	31

H & H Surface Tumbler Switches

**Pony Type
For Outlet Boxes**

With Bakelite Switch Cover

Single Pole, 6 Amperes, 125 Volts; 3 Amperes, 250 Volts
Three-Way, 5 Amperes, 125 Volts; 2 Amperes, 250 Volts



No. 6065-BC

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
6064-BC	\$46.00	Single Pole, 3/4-In. Cover....	5	50	23
6065-BC	47.00	Single Pole, 4-In. Cover.....	5	50	29
6068-BC	79.50	Three-Way, 3/4-In. Cover.....	5	50	23
6069-BC	83.00	Three-Way, 4-In. Cover.....	5	50	30

H & H Surface Tumbler Switches

For Outlet Boxes

With Cadmium Finish Outlet Box Cover

10 Amperes, 125 Volts; 5 Amperes, 250 Volts



No. 4411

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
4411	\$30.00	Single Pole, 3/4-In. Cover.....	10	50	18
4412	32.00	Single Pole, 4-In. Cover.....	10	50	25
4413	38.00	Three-Way, 3/4-In. Cover.....	10	50	19
4414	40.00	Three-Way, 4-In. Cover.....	10	50	26

H & H Surface Tumbler Switches

With Bakelite Covers

20 Amps., 250 Volts



No. 8485-BC

Base diameter, 2 1/2 inches; screw hole spacing, 1 3/4 inches.

Cat. No.	Per 100	Description	Std. Pkg.	Car-ton	Std. Wt. Lbs.
6089-BC	\$248.50	*Single Pole, Slotted..	30	10	13
6090-BC	248.50	*Single Pole, Closed..	30	10	13
8490-BC	248.50	Double Pole, Slotted..	30	10	13
8485-BC	248.50	Double Pole, Closed..	30	10	13

*Quadruple break.

H & H Surface Snap Switches

Nickel Finish, Metal Cover

Single Pole, Pony Size

5 Amperes, 125 Volts; 3 Amperes, 250 Volts



No. 2148

Base diameter, 2 inches. Screw hole spacing, 1 1/2 inches.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
2161	\$38.50	Slotted.....	10	100	23
2163	45.00	Slotted, Indicating.....	10	100	24
2148	38.50	Closed.....	10	100	24
2162	45.00	Closed, Indicating.....	10	100	24

Single Pole, Indicating Cover

No.	Per 100	Description	AMPERES 125V. 250V.	Base Diam. In.	Screw Spacing In.	Car-ton	Std. Pkg.	Wt. Lb.
320	\$60.50	Slotted.....	5	3 21/8	1 1/16	10	100	25
220	60.50	Closed.....	5	3 21/8	1 1/16	10	100	26
321	89.50	Slotted.....	10	5 21/8	1 3/4	10	100	39
221	89.50	Closed.....	10	5 21/8	1 3/4	10	100	39
2986	125.50	*Slotted.....	10	2 1/2	1 3/4	10	100	42
2985	125.50	*Closed.....	10	2 1/2	1 3/4	10	100	42
331	165.50	Slotted.....	20	3 1/16	2 5/32	2	10	7
231	165.50	Closed.....	20	3 1/16	2 5/32	2	10	7
643	248.50	Slotted.....	30	3 3/8	2 5/16	2	10	11
642	248.50	Closed.....	30	3 3/8	2 5/16	2	10	11

Double Pole

2086	\$93.50	Slotted, Non-Ind....	5	2 1/8	1 1/16	10	100	28
2088	106.00	Slotted, Ind.....	5	2 1/8	1 1/16	10	100	30
2085	93.50	Closed, Non-Ind....	5	2 1/8	1 1/16	10	100	28
2087	106.00	Closed, Ind.....	5	2 1/8	1 1/16	10	100	30
322	127.50	Slotted, Ind.....	10	2 1/2	1 3/4	10	100	43
222	127.50	Closed, Ind.....	10	2 1/2	1 3/4	10	100	43
532	248.50	Slotted, Ind.....	20	3 1/16	2 5/32	2	30	26
432	248.50	Closed, Ind.....	20	3 1/16	2 5/32	2	30	26
647	297.00	Slotted, Ind.....	30	3 3/8	2 5/16	2	30	33
646	297.00	Closed, Ind.....	30	3 3/8	2 5/16	2	30	33
3616	513.50	Slotted, Ind.....	50	4 1/4	3 3/16	2	10	21
3615	513.50	Closed, Ind.....	50	4 1/4	3 3/16	2	10	21

Three-Way

2153	\$72.50	Slotted.....	3	1 2 3/8	1 1/16	10	100	27
2152	72.50	Closed.....	3	1 2 3/8	1 1/16	10	100	27
2090	85.00	Slotted.....	5	3 2 3/8	1 1/16	10	100	30
2089	85.00	Closed.....	5	3 2 3/8	1 1/16	10	100	30
123	127.50	Slotted.....	10	5 2 1/2	1 1/16	10	50	21
23	127.50	Closed.....	10	5 2 1/2	1 1/16	10	50	22
133	248.50	Slotted.....	20	3 1/16	2 5/32	2	10	8
33-S	248.50	Closed.....	20	3 1/16	2 5/32	2	10	8
143	297.00	Slotted.....	30	3 3/8	2 5/16	2	10	11
43	297.00	Closed.....	30	3 3/8	2 5/16	2	10	11

*Quadruple break.

H & H Surface Snap Switches

Porcelain Covered

Single Pole



No. 2626

No.	Per 100	Description	AMPERES 125V. 250V.	Base Diam. In.	Screw Spacing In.	Car-ton	Std. Pkg.	Wt. Lb.
2626	\$49.00	Slotted, Non-Ind....	5	3 2	1 1/16	10	100	33
2628	55.50	Slotted, Ind.....	5	3 2	1 1/16	10	100	33
2625	49.00	Closed, Non-Ind....	5	3 2	1 1/16	10	100	33
2627	55.50	Closed, Ind.....	5	3 2	1 1/16	10	100	33
2206	104.00	Slotted, Ind.....	10	5 2 5/8	1 3/4	5	30	17
2205	104.00	Closed, Ind.....	10	5 2 5/8	1 3/4	5	30	17
1224	175.00	Slotted, Ind.....	20	10 3 3/8	2 5/32	2	10	11

H & H Canopy Switches

Bakelite—Pull

6 Amperes, 125 Volts; 3 Amperes, 250 Volts



No. 7743

Current carrying parts are enclosed in a bakelite compartment, separated and insulated from all other metal parts.



No. 7745

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7743	\$70.00	7" Chain, 1/4" Stem	10	100	12
7745	70.00	Short Chain, 6' Cord, 1/4" Stem	10	100	13
7746	70.00	Short Chain, 6' Cord, 3/8" Stem	10	100	13
7716	70.00	Short Chain, 6' Cord, 5/8" Stem	10	100	13

Rotary—With Removable Metal Handles

3 Amperes, 125 Volts; 1 Ampere, 250 Volts



No. 7775

Has 6 inches of No. 18 stranded fixture wire. Wires up to and including 8 inches supplied without extra charge. Switches with longer wires supplied on special order at an advance in price. Standard finish on exposed metal is brass, but wash nickel, bronze or black supplied without extra charge when specified.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7775	\$17.00	3/16-Inch Stem	25	100	4
7776	17.00	1/8-Inch Stem	25	100	4
7777	17.00	1/16-Inch Stem	25	100	4

Rotary—With Fixed Metal Handles

Has 6 inches of No. 18 stranded fixture wire. Wires up to and including 8 inches supplied without extra charge. Switches with longer wires supplied on special order at an advance in price. Standard finish on exposed metal is brass, but wash nickel, bronze or black supplied without extra charge when specified.



No. 7783

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7783	\$10.50	3/16-Inch Stem	25	100	4
7784	10.50	1/8-Inch Stem	25	100	4
7785	10.50	1/16-Inch Stem	25	100	4

H & H Feed Through Cord Switches

Pony Size



No. 530



No. 630



No. 1521



No. 541

Single Pole

No.	Per 100	Description	AMPERES 125 V. 250 V.	Car-ton	Std. Pkg.	Wt. Lb.
530	\$41.50	3/32" (.281") Brown Bakelite	3	1	10	50
530-I	51.50	3/32" (.281") Ivorylite	3	1	10	50
630	32.00	13/32" (.406") Composition	6	3	10	50
1521	46.00	3/32" (.281") Black Bakelite	6	3	10	50

Three Heat

541	\$60.00	3/16" (.312") Black Bakelite	3	1	10	50
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H & H Feed Through Cord Switches

Black Bakelite

No. 6837 Double Pole, 10 Amperes, 250 Volts
No. 730 Single Pole, 10 Amperes, 125 Volts; 5 Amperes, 250 Volts



No. 6837



No. 730

Has button to close end for use as pendent switch.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
6837	\$117.00	1 3/32" (.406")	10	50	8
730	38.50	1 3/32" (.406")	10	50	5

H & H Brass Shell Pendent Switches

6 Amperes, 125 Volts; 3 Amperes, 250 Volts



No. 2532



No. 3672



No. 2532-CG

Nos. 2532 and 3672 have pendent cap and 1 3/8-inch composition bushed cord hole; cord hold size, .406-inch.

No. 2532-CG has cord-grip cap; cord hole size, 1/4 to 3/8-inch (.250 to .375-inch). Standard finish, brush brass.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
2532	\$85.00	Bottom Buttons	10	100	26
3672	64.00	Side Buttons	10	100	15
2532-CG	107.00	Bottom Buttons	10	50	14

H & H Ceiling Pull Switches

Nickel Cover



No. 3741

Base diameter, 2 1/2 inches; screw hole spacing, 1 21/32 inches.

No.	Per 100	Description	AMPERES		Car-ton	Std. Pkg.	Wt. Lb.
			125 Volts	250 Volts			
3742	\$170.00	Single Pole, Slotted	10	5	10	30	18
3741	170.00	Single Pole, Closed	10	5	10	30	18
3744	196.50	Double Pole, Slotted	..	10	2	10	7
3743	196.50	Double Pole, Closed	..	10	2	10	7
3746	212.00	3-Way, Slotted	10	5	2	10	7
3745	212.00	3-Way, Closed	10	5	2	10	7
4060	424.00	4-Way, Closed	10	5	2	10	7
3747	233.50	2-Circuit, Closed	10	5	2	10	7
3749	233.50	3-Circuit, Closed	10	5	2	10	7

H & H Back Wired Ceiling Pull Switches

Without Outlet Box Cover and Bakelite Switch Cover

Single Pole

10 Amperes, 125 Volts; 5 Amperes, 250 Volts



No. 5020-BCW

Easy to wire, no switch covers to remove. Wires connect to contacts on back of base and fasten to box.

An 8-foot heavy black cord is standard.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
5020-BCW	\$190.50	For 3 1/4-Inch Outlet Box	10	30	22
5026-BCW	195.50	For 4-Inch Outlet Box	10	30	25

H & H Type C Ceiling Pull Switches

Bakelite Cover—Closed Base

20T Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 3731

Base diameter, 2 1/16 inches. Screw holes 1 21/32 to 1 3/4 inches center to center.

This switch can be supplied in wall pull type with a side cord outlet if desired. Add letter S to number for this type of switch.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
3731	\$246.00	Single Pole	2	10	9
3732	288.50	Double Pole	2	10	9
3733	288.50	Three-Way	2	10	9
3734	435.00	D.P., D.T., 2 Off Positions	2	10	9

H & H Relyon Wiring Devices

These articles are competitively priced and designed to meet competition. They should not be confused with H & H standard line of wiring devices listed elsewhere.

Flush Tumbler Switches

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

With Composition Handles



No. 201



No. 203

Porcelain base, 1 1/32 inches deep.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
201	\$12.50	Single Pole.....	10	100	25
203	19.00	Three-Way.....	10	50	14

With Ivorylite Handles



No. 201-I



No. 203-I

Porcelain base, 1 1/32 inches deep.

201-I	\$13.50	Single Pole.....	10	100	25
203-I	20.00	Three-Way.....	10	50	14

Surface Tumbler Switches

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

With Bakelite Cover and Porcelain Base



No. 206

Base diameter, 2 inches. Screw hole spacing, 1 1/16 inches.

205	\$16.00	Single Pole, Slotted.....	10	50	10
206	16.00	Single Pole, Closed.....	10	50	10
207	22.80	Three-Way, Slotted.....	10	50	10
208	22.80	Three-Way, Closed.....	10	50	10

With Bakelite Cover and Bakelite Base



No. 1700

Base is closed, with thin knockouts for slots if desired.

Base diameter, 2 inches. Screw hole spacing, 1 1/16 inches.

1700	\$18.00	Single Pole.....	10	50	12
1703	34.00	Three-Way.....	10	50	12

Tumbler Switches

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

With Bakelite Switch Cover and Cadmium Finish Outlet Box Cover



No. 243

243	\$20.00	Single Pole, 3 1/4-Inch Cover....	10	50	21
244	21.00	Single Pole, 4-Inch Cover.....	10	50	27
245	36.00	Three-Way, 3 1/4-Inch Cover....	10	50	23
246	38.00	Three-Way, 4-Inch Cover.....	10	50	28

Relyon Wiring Devices

Tumbler Switches

With Cadmium Finish Outlet Box Cover
6 Amperes, 125 Volts, 3 Amperes, 250 Volts



No. 209



No. 209-S

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
209	\$23.50	S.P., 3 1/4" Cover.....	10	50	23
210	38.00	3-Way, 3 1/4" Cover.....	10	50	24
223	25.50	S.P., 4" Cover.....	10	50	31
224	40.00	3-Way, 4" Cover.....	10	50	32
209-S	27.50	S.P., 3 1/4" Cover, with Guard...	10	50	25
210-S	42.00	3-Way, 3 1/4" Cover, with Guard.	10	50	26
223-S	29.50	S.P., 4" Cover, with Guard....	10	50	33
224-S	44.00	3-Way, 4" Cover, with Guard...	10	50	34

Bakelite Canopy Pull Switches

3 Amperes, 125 Volts; 1 Ampere, 250 Volts



Has bakelite cover and porcelain interior.

Equipped with short chain and 4 feet of cord.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
7970	\$23.00	Single Pole, 3/8-Inch Stem.....	10	100	9

Shallow Canopy Pull Switches

3 Amperes, 125 Volts; 1 Ampere, 250 Volts



Mechanism is enclosed in a brass shell, and wire leads are secured in the bakelite section. Six-inch leads are standard.

Has 2 1/2-inch pull chain and 4 feet of black cord with tassel. Chain has a special stop feature to prevent breakage.

Stem diameter, 1 1/32 inch; depth, 3/16 inch; and width, 1 1/16 inch.

Brass is standard finish. Wash nickel finish optional at no extra cost.

No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lb.
450	\$22.00	Single Pole.....	25	100	8

No. 1554 H & H Porcelain Sub-Bases

For cleat, concealed and molding work. For 5 and 10-ampere switches. Screw hole spacing, 1 1/2 inches to 1 3/8 inches.

Standard package, 100; carton, 10.

Weight per standard package, 26 pounds.

No. 1554.....per 100 \$10.00



No. 23 McGill Fixture Switches

3 Amperes, 125 Volts—1 Ampere, 250 Volts

A small, compact, single pole, off and on switch which fits wall thickness up to 5/16 inch. Approved and listed by Underwriters. Has 9-inch wire leads, stripped 3/4 inch. Furnished with 7-foot cord assembly with bell at end. Size, 5/8x7/8x7/8 inch.

Carton, 10; standard package, 100.

No. 23, Weight of Std. Pkg., 10 Pounds.....per 100 \$20.00



Levolier Conduit Box and Fixture Switches

6 Amperes, 125 Volts—3 Amperes, 250 Volts



No. 41



No. 39

Nos. 39 and 59 are the same as Nos. 41 and 61 respectively, with the addition of a link. This adapts them for use in any chain fixture—simply remove the top link immediately below canopy ring in the chain, and substitute either No. 39 or 59 Switch. Eliminates the expense of rewiring.

Equipped with 7-foot cord, with bell at end, or plain lever control.

Standard finishes are brush brass, Jap bronze and nickel flash. Other finishes supplied on special order.

No.	Each	STEM, INCHES		Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
		Diameter	Length			
41	\$.85	7/16	3/16	10	100	12
*41-PL	.75	7/16	3/16	10	100	11
42	.85	7/16	3/8	10	100	12
43	.85	7/16	3/4	10	100	13
39	.85	Link Type		10	100	15
Standard Model						
61	\$.95	7/16	3/16	10	100	14
*61-PL	.85	7/16	3/16	10	100	13
62	.95	7/16	3/8	10	100	14
63	.95	7/16	3/4	10	100	15
59	.95	Link Type		10	100	16

*Plain lever without chain.

Levolier Multiple Circuit Switches

4 and 6 Amperes, 125 Volts



No. 275

These switches carry a 6-ampere load, 125 volts, d.c. without undue arcing, pitting or heating. They are adaptable to a wide scope and variety of circuits, and can be furnished with standard plain lever, chain or cord pull control.



No. 400

No. 400 3-speed switch is designed particularly for ventilating fans and fractional hp. motors. Enclosed in fan housing—caps or casings are not necessary. In combination fan and lighting units, No. 400 controls the fan, No. 41 the lights. When used together, No. 41 is furnished with the same type lever as on No. 400.



No. 475

Nos. 275 and 475 are double pole, double throw switches with complete line cut-off. Load leads may be winding of a motor, in which case by interchanging the load leads it is possible to use the switch as a pole changer. Order of rotation:

first pull, load 1; second pull, off; third pull, load 2; and fourth pull, off. Subsequent pulls repetition of order.

No.	Each	Control	STEM, INCHES		Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
			Diameter	Length			
275	\$1.70	1 Off, 2 Off	7/16	3/8	10	100	15
276	1.70	1 Off	7/16	3/8	10	100	15
400	1.70	1-2-3 Off	7/16	3/8	10	100	15
402	1.70	1 Off, 2 Off	7/16	3/8	10	100	15
404	1.70	1-2-3-4 No Off	7/16	3/8	10	100	15
406	1.70	1-2 Off	7/16	3/8	10	100	15
475	2.00	1 Off, 2 Off	1/2	5/8	10	100	15

Levolier Canopy Pull Switches

3 Amperes, 125 Volts



No. 201

Equipped with 7-foot cord with bell at end.

Standard finishes are brush brass, Jap bronze and nickel flash. Other finishes supplied on special order.

2-Circuit. Operates the No. PS-35 three-light lamp.

3-Circuit. Designed to control lights from two different points. May be used as a reversing switch on fractional hp. motors.

No.	Each	No.	Each	STEM, INCHES		Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
				Diam.	Length			
201	\$.85	301	\$.90	7/16	3/16	10	100	13
202	.90	302	.95	7/16	3/8	10	100	13
203	.90	303	.95	7/16	3/4	10	100	14

Levolier Canopy Pull Switches

10 Amperes, T Rating, 125 Volts—5 Amperes, 250 Volts



No. 1010

A single-pole switch designed for safe control of modern high watt and high intensity lamps.

No. 1039 is the same as No. 1010 with the addition of a link for fitting into chain fixture without rewiring.

Equipped with 7-foot cord, with bell at end, or plain lever control. Standard finishes are brush brass, Jap bronze and nickel.

No.	Each	STEM, INCHES		Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
		Diameter	Length			
1010	\$1.30	1/2	3/8	10	50	10
1010-L	1.30	1/2	5/8	10	50	10
*1010-PL	1.20	1/2	3/8	10	50	9
1039	1.35	Link Type		10	50	13

*Plain lever without chain.

Levolier Two-Circuit Canopy Pull Switches

10 Amperes, T Rating, 125 Volts—5 Amperes, 250 Volts



No. 1020

Adaptable to every type of installation for the control of double-filament, three light lamps.

No. 1029 is the same as No. 1020 with the addition of a link for fitting into chain fixture without rewiring.

Equipped with 7-foot cord, with bell at end, or plain lever control. Standard finishes are brush brass, Jap bronze and nickel.

No.	Each	STEM, INCHES		Carton	Std. Pkg.	Wt. Lb. Std. Pkg.
		Diameter	Length			
1020	\$1.50	7/16	3/16	10	50	10
1020-S	1.50	7/16	3/8	10	50	10
1020-L	1.50	7/16	3/4	10	50	10
*1020-PL	1.40	7/16	3/8	10	50	9
1029	1.55	Link Type		10	50	13

*Plain lever without chain.

No. 85 Levolier Extension Arms



Constant pulling of lamp cords that rub against reflectors, shades and bowls can be eliminated by slipping an extension arm over each Levolier Switch Lever, inserting the cord through the end hole of loop, and knotting to hold. Arm is 1/2 inch thick, tubular formed for rigidity.

No. 85-W can be extended to meet changing conditions for use with 18 and 22-inch and larger basin fixtures.

Standard or special finishes to match Levolier Switches. Carton, 10; standard package, 100.

No.	85	85-W
Each	\$.20	.25
Length	inches 5 1/4	9
Weight of Standard Package	pounds 3	4

Bryant Special Finishes

Flush Plates—Lampholders—IL Hoods and Name Plates—Shadeholders
 Plug Caps—Jewels—Pendent Switches, Etc.

PER 100, ADD TO LIST PRICE OF CORRESPONDING DEVICE
 IN BRUSH BRASS FINISH

Finish	*Flush Plates First Gang	Brass Shell Key, Key-less and Push Devices with Caps including Pendent Switches Complete	Brass Shell Pull Devices with Caps Complete Also Nos. KE and 663	Brass Shell Key, Key-less and Push Bodies, all Shade-Holders	Brass Shell Pull Bodies, Jewels Also Nos. JB and JD	Caps for Brass and Porcelain Devices Also Nos. IL1330 IL1339 IL1340	One-Piece Brass Shell Wall and Ceiling Devices and Fluted Catch Bases
Bakelite Lacquer.....	\$15.00	\$6.50	\$8.50	\$3.50	\$5.50	\$3.50	\$13.00
Barff, Bauer, (Lacquer).....	15.00	6.50	8.50	3.50	5.50	3.50	13.00
Black, Lacquer.....	15.00	6.50	8.50	3.50	5.50	3.50	13.00
Brass, Flemish.....	22.50	11.00	13.00	5.50	7.50	5.50	17.00
Brass, Lemon.....	15.00	6.50	8.50	3.50	5.50	3.50	13.00
Brass, Oxidized.....	22.50	11.00	13.00	5.50	7.50	5.50	17.00
Brass, Polished.....	15.00	6.50	8.50	3.50	5.50	3.50	13.00
Brass, Sand Blast, Antique.....	45.00	23.50	25.50	12.00	14.00	12.00	32.00
Brass, Sand Blast, Brush.....	37.50	19.50	21.50	10.00	12.00	10.00	30.00
Bronze, Brush.....	22.50	11.00	13.00	5.50	7.50	5.50	17.00
Bronze, Japanese (Dark).....	22.50	11.00	13.00	5.50	7.50	5.50	17.00
Bronze, Polished.....	22.50	11.00	13.00	5.50	7.50	5.50	17.00
Bronze, Statuary (Light).....	22.50	11.00	13.00	5.50	7.50	5.50	17.00
Cadmium, Brushed.....	30.00	17.00	19.50	8.50	11.00	8.50	26.50
Cadmium, Polished.....	30.00	17.00	19.50	8.50	11.00	8.50	26.50
Chromium, Dull.....	45.00	23.50	25.50	12.00	14.00	12.00	32.00
Chromium, Polished.....	45.00	23.50	25.50	12.00	14.00	12.00	32.00
Copper, Antique.....	30.00	17.00	19.50	8.50	11.00	8.50	26.50
Copper, Brush.....	22.50	11.00	13.00	5.50	7.50	5.50	17.00
Copper, Mottled.....	22.50	11.00	13.00	5.50	7.50	5.50	17.00
Copper, Oxidized.....	22.50	11.00	13.00	5.50	7.50	5.50	17.00
Copper, Polished.....	22.50	11.00	13.00	5.50	7.50	5.50	17.00
Enamel, White (Lacquer).....	15.00	6.50	8.50	3.50	5.50	3.50	13.00
Gun Metal.....	22.50	11.00	13.00	5.50	7.50	5.50	17.00
Ivory (Lacquer).....	22.50	11.00	13.00	5.50	7.50	5.50	17.00
Nickel, Dull.....	22.50	11.00	13.00	5.50	7.50	5.50	17.00
Nickel, Polished.....	22.50	11.00	13.00	5.50	7.50	5.50	17.00
Silver, Butler's (Brushed).....	67.00	21.50	32.00	11.00	21.50	11.00	26.50
Silver, Oxidized.....	67.00	21.50	32.00	11.00	21.50	11.00	26.50
Silver, Polished.....	67.00	21.50	32.00	11.00	21.50	11.00	26.50
Silver, Satin.....	67.00	21.50	32.00	11.00	21.50	11.00	26.50
Swedish Iron.....	30.00	.....	.....	.....	.....	.....	.....
Telephone Red (Lacquer).....	15.00	6.50	8.50	3.50	5.50	3.50	13.00
Verde Antique (Lacquer).....	15.00	6.50	8.50	3.50	5.50	3.50	13.00

*IN MULTIPLE GANG AND COMBINATION PLATES. For each additional gang over one in the finishes listed above, add \$15 list per 100.

SPECIAL FINISHES ON PLATES FOR FAN HANGERS. Take a 10 per cent advance over the cost of special finishes for regular plates.

QUANTITY ORDERS, PLATES. The extra charge for special finishes on flush plates will be reduced as follows: 100-499 gangs, 10 per cent; 500-999 gangs, 20 per cent; 1000 gangs, 50 per cent.

SPRAY BRASS FINISH. Any brass plate can be supplied in spray brass finish (the symbol for which is P following the number) for \$1.50 list per 100 gangs less than the price of the same plate in brush brass finish.

CHROMIUM PLATING. Polished chromium will be furnished unless dull chromium is specified. Chromium plates are not lacquered.

PERMACHROME FINISH. Competitive grade can be furnished on tumbler switch, and single and duplex convenience outlet plates in .040-inch metal.

PLATES FOR PLATING. Plates which are to be plated by the purchaser should be ordered "for plating." They will be billed at the price of corresponding brush brass plates.

PLATES FOR PAINTING. Plates, which are to be painted by the purchaser should be ordered "for painting." They will

be billed at the price of the corresponding plate in spray brass finish.

HAMMERED PLATES. Solid only, \$56 per 100 gangs.

GOLD PLATING. The extra charge for genuine gold plating will be quoted on application.

BLACK BAKELITE PLATES. Add \$2.00 to list per 100 gangs.

BRIGHT DIPPED LAMP HOLDERS. Deduct \$1.00 list per 100 for complete lampholders.

NICKEL OR GUN METAL FINISHES. On brass shell competitive grade lampholders. Add \$4.00 list per 100 to the brush brass prices. Not subject to Quantity Discounts.

For mogul lampholders in special finishes, add double the prices listed above.

For twin lampholders in special finish, add one and one-half times the prices listed above.

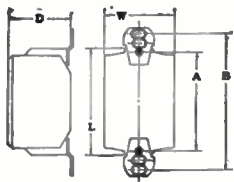
QUANTITY ORDERS, LAMP HOLDERS, ETC. The extra charge for special finishes on lampholders, etc., will be reduced as follows: 250-499 lots, one shipment, one finish, 10 per cent; 500-999 lots, one shipment, one finish, 20 per cent; and 1000 lots or over, one shipment, one finish, 50 per cent.

UNBROKEN CARTONS, of devices in the above table in special finishes, may be assorted with unbroken cartons of the same catalog number in standard finish, to make up standard package quantity.

Bryant Flush Devices and Plates

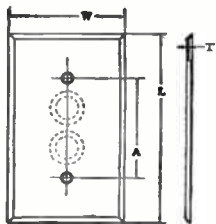
Standard Spacings and Dimensions

One-Gang Flush Device



- A—Plate screw spacing usually $2\frac{3}{8}$ in.
- B—Supporting screw spacing, $3\frac{1}{2}$ in.
- L—Length of body or cup, not over $2\frac{1}{16}$ in.
- W—Width of body or cup, not over $1\frac{3}{4}$ in.
- D—Depth of body or cup.

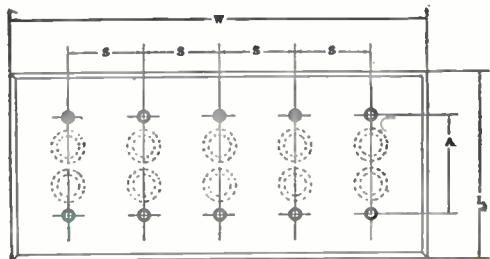
One-Gang Flush Plate



- A—Plate screw spacing, usually $2\frac{3}{8}$ in.
- L—Height of plate, $4\frac{1}{2}$ in.
- W—Width of plate, $2\frac{3}{4}$ in.
- T—Thickness of plate, solid, 0.100 in.;
.060 stamped, 0.060 in.;
.040 stamped, 0.040 in.

Five-Gang Flush Plate

One Horizontal Row

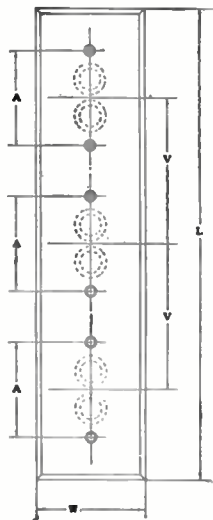


- A—Plate screw spacing, usually $2\frac{3}{8}$ in.
- S—Spacing between centers of adjacent gangs always $1\frac{13}{16}$ in.
- L—Height of plate, $4\frac{1}{2}$ in.
- W—Width of plate varies for different number of gangs as follows:

1-Gang..... $2\frac{3}{4}$ in.	5-Gang....10 in.
2-Gang..... $4\frac{1}{16}$ in.	6-Gang.... $11\frac{13}{16}$ in.
3-Gang..... $6\frac{3}{8}$ in.	7-Gang.... $13\frac{5}{8}$ in.
4-Gang..... $8\frac{1}{16}$ in.	8-Gang.... $15\frac{1}{16}$ in.

Three-Gang Tandem Flush Plate

One Vertical Row



- A—Plate screw spacing usually $2\frac{3}{8}$ in.
 - V—Spacing between centers of adjacent tandem devices always $3\frac{5}{8}$ in.
 - W—Width of plate varies according to number of vertical rows.
 - L—Height of plate varies according to number of devices in tandem as follows:
- | |
|-----------------------------------|
| 2-Gang tandem $8\frac{1}{8}$ in. |
| 3-Gang tandem $11\frac{3}{4}$ in. |
| 4-Gang tandem $15\frac{3}{8}$ in. |
| 5-Gang tandem 19 in. |
| 6-Gang tandem $22\frac{5}{8}$ in. |
| 7-Gang tandem $26\frac{1}{4}$ in. |

Plates to Fit FD and FS Condulets, Solid Only

When plates are specified "Condulet dimensions," the extra charge will be \$21.00 list per 100 plates.

Special Spacings and Dimensions, Solid Only

Plates of special dimensions or spacings will be billed at \$9.80 list per 100 square inches in addition to the list price of the corresponding standard solid plate. The standard package quantity will be 10 plates and the carton quantity 2 plates of one style and size.

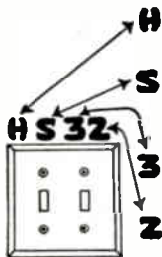
On quantity orders for identical plates the following list prices per 100 square inches will be added; 100-499 plates, \$8.82, 500-999 plates \$7.84; 1000 and over, \$6.86.

When plates are other than rectangular in shape, the area by which the list price is determined will be the size of the smallest rectangular piece from which the specified plate can be cut.

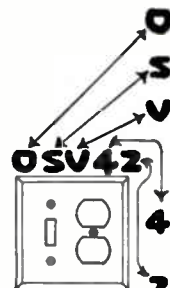
No plates of special dimensions will be sold for less than the list price of a standard plate of the same kind for a similar purpose.

Plate Symbols

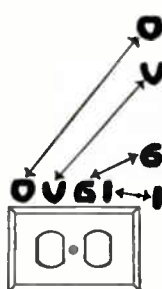
When the simple elements of this system are learned, it will be found very easy to specify Bryant Plates by the Cat. No.



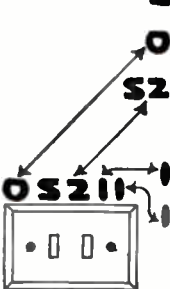
- H means Hemo Plate
- S means S section
- 32 means Bakelite composition
- 2 means 2 gang



- O means plate
- S means S section
- V means V section
- 42 means .040 in. thick
- 2 means 2-gang



- O means plate
- V means V section
- 6 means .060 in. thick
- 1 means 1 gang



- O means plate
- S means S section
- 2 means 2-gang
- 11 means solid
- 1-gang

P after any plate Cat. No. indicates that Perma finish is desired.

Combination Plates

(At Least Two Different Symbols and Not More Than One Horizontal Row)

Up to and including three gangs, combination plates, as described above, will be billed at the sum of the list prices shown on page 44. Above three gangs, add 25% to the sum of the list prices.

Carton, 2 plates. Standard package, 10 plates.

Tandem Plates

(One Symbol Only)

Up to and including three gangs, tandem plates, as described above, will be billed at the sum of the list prices shown on page 44, plus 25% (above three gangs, plus 50%).

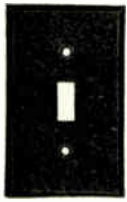
Available in solid (.100-inch) metal only.
Carton, 10 gangs. Standard package, 100 gangs.

Tandem-Combination Plates

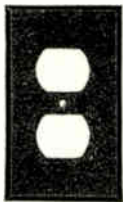
(Two or More Horizontal Rows; Two or More Different Symbols)

Same additions as for tandem plates.
Available in solid (.100-inch) metal only.
Carton, 2 plates. Standard package, 10 plates.

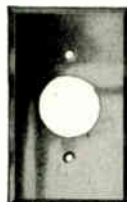
Bryant Process Plates
For Standard Devices



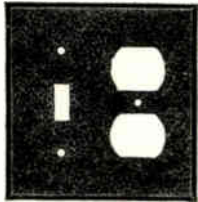
No. OS71-BX



No. OV71-BX



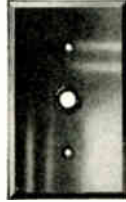
No. OF71-CX



No. OSV72-BX



No. OK71-CX



No. OG71-CX

Brown-X and Ivory-X plates have a multiple coating of baked-on, insulating enamel. The finish resembles bakelite and may be painted to match decorations.

Chrome-X plates are made of .040-inch stainless steel. The dull silver-like finish is part of the metal and will last indefinitely.

Approximate weight per standard package of 100, 14 pounds.

Tumbler Switch Plates

Packed 10 gangs in a carton, 100 in a standard package.

No. of Gangs	Brown-X		Ivory-X		Chrome-X	
	No.	Per 100	No.	Per 100	No.	Per 100
1	OS71-BX	\$6.00	OS71-IX	\$9.00	OS71-CX	\$20.00
2	OS72-BX	12.00	OS72-IX	18.00	OS72-CX	54.00
3	OS73-BX	18.00	OS73-IX	27.00	OS73-CX	81.00
4	OS74-BX	36.00	OS74-IX	52.00	OS74-CX	108.00
5	OS75-BX	45.00	OS75-IX	65.00	OS75-CX	135.00
6	OS76-BX	54.00	OS76-IX	78.00	OS76-CX	162.00

Convenience Outlet Plates

Packed 10 in a carton, 100 in a standard package.

Duplex						
No.	No.	Per 100	No.	Per 100	No.	Per 100
1	OV71-BX	\$6.00	OV71-IX	\$9.00	OV71-CX	\$20.00
2	OV72-BX	12.00	OV72-IX	18.00	OV72-CX	54.00

Single						
No.	No.	Per 100	No.	Per 100	No.	Per 100
1	OF71-BX	\$6.00	OF71-IX	\$9.00	OF71-CX	\$20.00

Combination Plates

Packed 2 in a carton, 10 in a standard package.

Tumbler Switch and Single Outlet			
2	OSF72-BX	\$12.00	OSF72-IX \$18.00 OSF72-CX \$54.00

Tumbler Switch and Duplex Outlet			
2	OSV72-BX	\$12.00	OSV72-IX \$18.00 OSV72-CX \$54.00

Two Tumbler Switches and Duplex Outlet			
3	OSSV73-BX	\$18.00	OSSV73-IX \$27.00 OSSV73-CX \$81.00

Blank Plates

Packed 10 in a carton, 50 in a standard package.

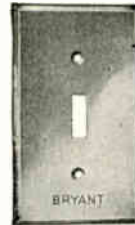
1	OK71-BX	\$13.00	OK71-IX \$16.00	OK71-CX \$27.00
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Telephone Plates

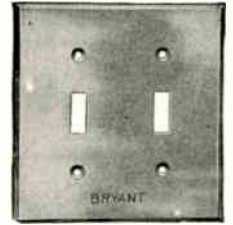
Packed 10 in a carton, 50 in a standard package.

1	OG71-BX	\$14.00	OG71-IX \$17.00	OG71-CX \$28.00
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Bryant Flush Plates for Tumbler Switches



1-Gang



2-Gang

The standard finish is brush brass which will be furnished when no finish is specified.

Perma finish is a durable colored lacquer that resembles brush brass.

S plates of the same material may be assorted in various finishes, thicknesses and gangs to make up carton and standard package quantities. No other assortment permitted.

When ordering combination plates, specify S section to accommodate switches with handles operating vertically.

By installing No. 746 jewel, any of these plates can be made into pilot light plates.

Brass mounting screws, finished to match, are packed in the carton with each plate.

Solid Brass Plates, One Horizontal Row Symbol S

Cat. No.	Standard Finish		Cat. No.	Perma Finish		No. Gangs	Carton Gangs	Std. Pkg. Gangs	Wt. Lbs. Std. Pkg.
	Per 100			Per 100					
OS11	\$56.00		OS11-P	\$54.50		1	10	100	28
OS12	112.00		OS12-P	109.00		2	10	100	24
OS13	168.00		OS13-P	163.50		3	10	100	20

The price of brush brass solid S plates above 3 gangs, when dimensions and spacings are standard, is 84 cents list per gang (Perma, 76 cents).

Stamped Brass Plates, .060-Inch One Horizontal Row, Symbol S

OS61	\$23.50	OS61-P	\$22.00	1	10	100	25
OS62	47.00	OS62-P	44.00	2	10	100	21
OS63	70.50	OS63-P	66.00	3	10	100	20

The price of brush brass .060-inch S plates above 3 gangs, when dimensions and spacings are standard, is 52 cents list per gang (Perma, 44 cents).

Stamped Brass Plates, .040-Inch One Horizontal Row, Symbol S

OS41	\$13.00	OS41-P	\$11.50	1	10	100	19
OS42	26.00	OS42-P	23.00	2	10	100	16
OS43	39.00	OS43-P	34.50	3	10	100	15

The price of brush brass .040-inch S plates above 3 gangs, when dimensions and spacings are standard, is 44 cents list per gang (Perma, 36 cents).

Solid Brass Plates, One Vertical Row (Tandem)

3792	\$150.00	3792-P	\$147.00	2	10	100	22
3793	225.00	3793-P	220.50	3	10	100	22

The price of brush brass solid S plates in one vertical row (tandem) above 3 gangs, when dimensions and spacings are standard, is 84 cents list per gang (Perma, 76 cents).

Bryant Plates and Bell Push Buttons

No. OT11 Brush Brass Plates

Symbol T



Solid brush brass. With 5/8-inch hole. For 12-volt bell push button.

No.	OT11
Per 100	\$60.00
No. Gangs	1
Carton Gangs	10
Standard Package Gangs	50
Package Weight	pounds 20

No. 3675 Brush Brass Bell Push Buttons

For T plate. Size 5/8 inch; 12 volts. Not N.E.C.S. Package weight, 1 pound.



No.	3675
Per 100	\$75.00
Carton Gangs	10
Standard Package Gangs	50

Bryant Flush Plate Sections

Combination plates should be described by using the letters shown with the illustrations of the respective plates, giving the letters in order from left to right, or from top to bottom, as the devices are to be mounted.

The list price of a horizontal combination plate of two or three sections, in brush brass finish when dimensions and spacings are standard and the devices are arranged in one horizontal row, will be the sum of the lists shown. The list

price of a horizontal combination plate of 4 or more sections in combination is the sum of the list prices shown plus 25% of that sum for the combination feature.

For plates with devices mounted tandem or in more than one horizontal row, add 20% to the sum of the list prices for 2 and 3-gang plates; for 4 or more gangs, add 50%.

Packed 2 in a carton, 10 in a standard package.

Use the prices below when ordering combination plates.

Type B Bulls' Eye Plates



For Nos. 427 and 627 lampholder receptacles.

Consists of Type F plate with No. 3850 jewel.

Solid.....each \$.98
 .060-Inch.....each .68
 .040-Inch.....each .62

Type I2 Plates



For No. 5121 combination.

Solid.....each \$1.04

Type N Old Style Chapman Receptacle Plates



For No. 613 Chapman receptacle. Made of solid brass.

Supporting screw spacing, 2 1/16 inches.

Solid.....each \$1.00

Type B3 Bulls' Eye Plates



Consists of No. 737 jewel and cast bronze tumbler holder.

Made of solid brass only.

Solid.....each \$7.50

Type J Junior Flush Receptacle Plates



For No. 411 Junior flush receptacle.

Solid.....each \$.68
 .060-Inch.....each .52
 .040-Inch.....each .46

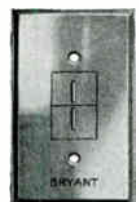
Type O One-Button Push Switch Plates



With one button. For all Type O flush switches also Western Electric No. 367 telephone jack.

Solid.....each \$.70
 .060-Inch.....each .42
 .040-Inch.....each .36

Type D Receptacle Plates



For No. 630 D.D. receptacles.

Not furnished in .040-inch brass.

Solid.....each \$.90
 .060-Inch.....each .85

*Type K Blank Plates



Solid.....each \$.68
 .060-Inch.....each .38
 .040-Inch.....each .34

Type P Two-Button Push Switch Plates



For all two-button flush switches.

Solid.....each \$.62
 .060-Inch.....each .34
 .040-Inch.....each .28

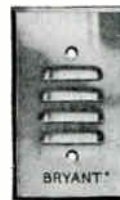
Type F Single Flush Receptacle Plates



Without door. Will take Nos. 736 and 737 jewels to make Type B plate. Also for Nos. 120, 140, 556, 79G, 1708, 4831, 9020, 9116, 9120 and 9326 flush receptacles.

Solid.....each \$.62
 .060-Inch.....each .34
 .040-Inch.....each .28

Type L2 Receptacle Plates



For Nos. 427 and 627 receptacles.

Made of brass.
 .040-Inch.....each \$1.20

Type S Tumbler Switch Plates



For all single handle vertically operated flush tumbler switches.

Solid.....each \$.62
 .060-Inch.....each .34
 .040-Inch.....each .28

*Type G Telephone Plates



With one cord hole.

Solid.....each \$.70
 .060-Inch.....each .42
 .040-Inch.....each .36

Type M2 Plates



For Nos. 2959 and 3959 tumbler switch and pilot lamp combinations.

Solid.....each \$1.04
 .060-Inch.....each .76
 .040-Inch.....each .70

Type S1 Tumbler Switch Plates



For Unigle switches.

Solid.....each \$.62
 .060-Inch.....each .34
 .040-Inch.....each .28

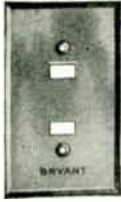
*The supporting screw spacing for this section is 3 3/8 inches for .100 inch (solid) combination plates. The supporting screw spacing for this section is 2 3/8 inches for .060 inch and .040 inch stamped combination plates. Yoke No. H-10 is furnished for this section in stamped combination plates without extra charge.

Continued

Bryant Flush Plate Sections

Continued

Type S2 Tumbler Switch Plates



For Dugle switches.
Solid.....each \$.62
.060-Inch.....each .34
.040-Inch.....each .28

***Type T2 Telephone Jack Plates**



For Western Electric No. 367 telephone jack receptacle.
Solid.....each \$.62
.060-Inch.....each .34
.040-Inch.....each .28

Type W4 Plates



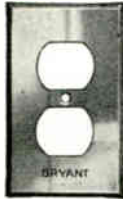
For Nos. 2994, 2995, 3994 and 3995 switch and receptacle combinations.
Solid.....each \$.62
.060-Inch.....each .34
.040-Inch.....each .28

Type S3 Tumbler Switch Plates



For Trigle switches.
Solid.....each \$.62
.060-Inch.....each .34
.040-Inch.....each .28

Type V Duplex Flush Receptacle Plates



Without doors, for Nos. 122, 142, 792, 4832 and 9022 duplex flush receptacles.
Solid.....each \$.62
.060-Inch.....each .34
.040-Inch.....each .28

*The supporting screw spacing for this section is 3 $\frac{1}{2}$ inches for .100 inch (solid) combination plates. The supporting screw spacing for this section is 2 $\frac{1}{2}$ inches for .060 and .040 inch stamped combination plates.

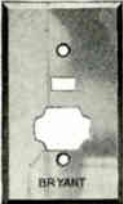
Yoke No. H-10 is furnished for this section in stamped combination plates without an extra charge.

***Type T Push Button Plates**



For No. 3675 12-volt push buttons.
Solid.....each \$.62
.060-Inch.....each .34
.040-Inch.....each .28

Type W2 Plates



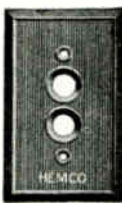
For Nos. 2957 and 3957 switch and receptacle combinations.
Solid.....each \$.62
.060-Inch.....each .34
.040-Inch.....each .28

●
EVERY OUTLET
Deserves
A BRYANT DEVICE
●

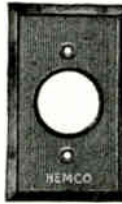
Bryant Hemco Flush Plates



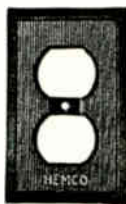
No. HS 31



No. HP 31



No. HF 31



No. HV 31

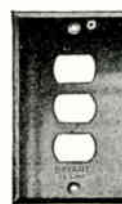
Bryant Interchangeable IL Device Plates
Single-Gang—.060-Inch Brush Brass



No. IL1671-A



No. IL1671-B



No. IL1671-C



No. IL1671-G

Brown Molded Bakelite, with Metal Screws

Ribbed

Cat. No.	Per 100	No. of Gangs	Style Switch	Carton Gangs	Std. Pkg. Gangs	Wt., Lbs. Std. Pkg.
HS31	\$7.00	1	Tumbler	10	100	9
HS32	14.00	2	Tumbler	10	100	8
HS33	21.00	3	Tumbler	10	100	8
HP31	7.00	1	Push	10	100	9
HP32	14.00	2	Push	10	100	8
HP33	21.00	3	Push	10	100	8
HF31	7.00	1	Single Outlet	10	100	9
HV31	7.00	1	Duplex Outlet	10	100	7

Stamped Brass, .040-Inch Thick

Cat. No.	Brush Brass per 100	Perma Finish per 100	No. of Gangs	Style Switch	Carton Gangs	Std. Pkg. Gangs	Wt., Lbs. Std. Pkg.
OS41	\$13.00	\$11.50	1	Tumbler	10	100	19
OS42	26.00	23.00	2	Tumbler	10	100	16
OS43	39.00	34.50	3	Tumbler	10	100	15
OP41	13.00	11.50	1	Push	10	100	16
OP42	26.00	23.00	2	Push	10	100	16
OP43	39.00	34.50	3	Push	10	100	15
OF41	13.00	11.50	1	Single Outlet	10	100	16
OV41	13.00	11.50	1	Duplex Outlet	10	100	15

No.	Per 100	No. of Openings	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.
IL1671-A	\$23.50	*1	10	100	36
IL1671-B	28.50	2	10	50	18
IL1671-C	28.50	3	10	30	12
IL1671-G	23.50	†1	10	100	36

*Horizontal. †Vertical.

Bryant Mounting Straps

For Use with Bryant Interchangeable Device Plates



No. IL1347

A mounting strap is packed with each plate. However, can be ordered separately.

Plate screw hole spacing, 3 $\frac{1}{2}$ inches.

Packed 10 in a carton, 50 in a standard package.



No. IL1348

No.	Per 100	No. of Openings	Size In.	Wt., Lbs. Std. Pkg.
IL1347	\$4.00	†1	4 $\frac{1}{2}$ x1 $\frac{15}{16}$	2 $\frac{1}{2}$
IL1348	4.00	*3	4 $\frac{1}{2}$ x1 $\frac{15}{32}$	3 $\frac{1}{4}$

*Horizontal. †Vertical.

Bryant Uniline Plates

Flush Switch Plates



No. 91071



No. 91081

Tumbler Switch

No. of Gangs	Car-ton	Brown			Ivory		
		No.	Per 100	Std. Pkg. Gangs	No.	Per 100	Std. Pkg. Gangs
1	10	91071	\$6.00	100	92071	\$11.00	50
2	10	91072	12.00	100	92072	22.00	50
3	10	91073	18.00	100	92073	33.00	50
4	10	91074	24.00	100	92074	44.00	50
5	10	91075	96.50	100	92075	125.00	50
6	10	91076	116.00	100	92076	150.00	50

Push Switch

1	10	91081	\$6.00	100	92081	\$11.00	50
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Convenience Outlet Plates



No. 91101



No. 91091

Duplex

No. of Gangs	Car-ton	Brown			Ivory		
		No.	Per 100	Std. Pkg. Gangs	No.	Per 100	Std. Pkg. Gangs
1	10	91101	\$6.00	100	92101	\$11.00	50
2	10	91102	12.00	50	92102	22.00	50

Single

1	10	91091	\$6.00	100	92091	\$11.00	50
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Combination Plates



No. 91532

Tumbler Switch and Single Outlet

No. of Gangs	Car-ton	Brown			Ivory		
		No.	Per 100	Std. Pkg. Gangs	No.	Per 100	Std. Pkg. Gangs
2	2	91512	\$12.00	10	92512	\$22.00	10

Tumbler Switch and Duplex Outlet

2	2	91532	\$12.00	10	92532	\$22.00	10
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Single and Duplex Outlet

2	2	91572	\$32.00	10	92572	\$47.00	10
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Two Tumbler Switches and Duplex Outlet

3	2	91543	\$30.00	10	92543	\$45.00	10
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Three Tumbler Switches and Duplex Outlet

4	2	91554	\$94.50	10	92554	\$117.00	10
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Blank Plates



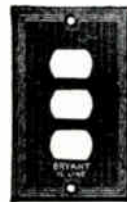
No. 91121

No. of Gangs	Car-ton	Brown			Ivory		
		No.	Per 100	Std. Pkg. Gangs	No.	Per 100	Std. Pkg. Gangs
1	10	91121	\$6.00	50	92121	\$11.00	30
2	10	91122	47.00	50	92122	59.00	30

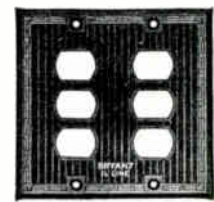
Telephone Plates

1	10	91181	\$6.00	50	92181	\$11.00	30
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Plates for IL Line



No. 91031



No. 91032

No. of Gangs	No. of Open.	Car-ton	Brown			Ivory		
			No.	Per 100	Std. Pkg. Gangs	No.	Per 100	Std. Pkg. Gangs
1	*1	10	91011	\$11.50	100	92011	\$17.50	100
1	2	10	91021	16.00	50	92021	22.00	50
1	3	10	91031	16.00	30	92031	22.00	30
1	†1	10	91041	11.50	100	92041	17.50	100
2	4	10	91022	32.00	30	92022	44.00	30
2	†2	10	91042	22.50	50	92042	34.50	30
2	*2	10	91012	22.50	50	92012	34.50	30
2	6	10	91032	45.00	20	92032	57.00	20
3	6	10	91023	64.00	20	92023	82.00	20

*Horizontal. †Vertical.

Sectional Plates for IL Line



No. 91331



No. 91421

End Sections, Horizontal IL Openings

No. of Open.	Car-ton	Brown			Ivory		
		No.	Per 100	Std. Pkg. Gangs	No.	Per 100	Std. Pkg. Gangs
1	10	91311	\$21.50	50	92311	\$27.50	50
2	10	91321	21.50	50	92321	27.50	50
3	10	91331	21.50	30	92331	27.50	30

Center Sections, Horizontal IL Openings

1	10	91411	\$21.50	50	92411	\$27.50	50
2	10	91421	21.50	50	92421	27.50	50
3	10	91431	21.50	30	92431	27.50	30

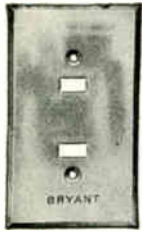
Approximate weight of a standard package of 100, 10 pounds.

Uniline Plates also furnished in black bakelite.

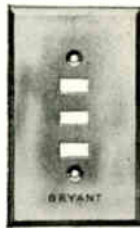
Universal number series is 93000; for example, No. 91041 in black would be No. 93041. Extra charge over brown bakelite, \$2.00 per 100 gangs.

Bryant Brass Flush Plates

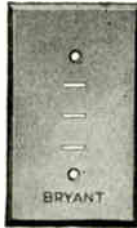
For Regular and Lock Type Unigle, Dugle, and Trigle Flush Tumbler Switches



No. OS241



No. OS341



No. OS661
Lock Type

The standard finish is brush brass and will be furnished when no finish is specified.

Mounting screw holes are spaced 2 3/8 inches on centers.

Packed 5 in a carton, 10 in a standard package.

Unigle Switch Plates, Symbol S1

No.	Per 100	Description	Wt., Lb. Std. Pkg.
OS111	\$64.00	Solid, .100-Inch Brass	5
OS141	21.00	Stamped, .040-Inch Brass	2
OS161	31.50	Stamped, .060-Inch Brass	2

Unigle Lock Type Switch Plates, Symbol S4

OS411	\$64.00	Solid, .100-Inch Brass	5
OS441	31.00	Stamped, .040-Inch Brass	2
OS461	31.50	Stamped, .060-Inch Brass	2

Dugle Switch Plates, Symbol S2

OS211	\$64.00	Solid, .100-Inch Brass	5
OS241	21.00	Stamped, .040-Inch Brass	2
OS261	31.50	Stamped, .060-Inch Brass	2

Dugle Lock Type Switch Plates, Symbol S5

OS511	\$64.00	Solid, .100-Inch Brass	5
OS541	21.00	Stamped, .040-Inch Brass	2
OS561	31.50	Stamped, .060-Inch Brass	2

Trigle Switch Plates, Symbol S3

OS311	\$67.00	Solid, .100-Inch Brass	5
OS341	24.00	Stamped, .040-Inch Brass	2
OS361	34.50	Stamped, .060-Inch Brass	2

Trigle Lock Type Switch Plates, Symbol S6

OS611	\$67.00	Solid, .100-Inch Brass	5
OS641	24.00	Stamped, .040-Inch Brass	2
OS661	34.50	Stamped, .060-Inch Brass	2

Hemco Brown Bakelite Flush Plates

For Regular and Lock Type Unigle, Dugle, and Trigle Flush Tumbler Switches



No. HS 231



No. HS 331



No. HS 631

Brown bakelite plates with glossy ribbed surface, and rich, satin finish border.

Will not fade or warp.

Unigle Switch Plates

Cat. No.	Per 100	Description	Symbol	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
HS131	\$19.50	Regular Type	S1	2	10	3/4
HS431	19.50	Lock Type	S4	2	10	3/4

Dugle Switch Plates

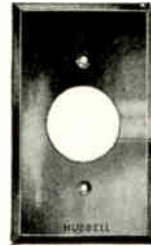
HS231	\$19.50	Regular Type	S2	2	10	3/4
HS531	19.50	Lock Type	S5	2	10	3/4

Trigle Switch Plates

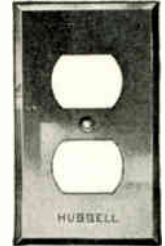
HS331	\$23.50	Regular Type	S3	2	10	3/4
HS631	23.50	Lock Type	S6	2	10	3/4

Hubbell Brass Flush Plates

For Single and Duplex Convenience Outlets



No. 6835, Single



No. 6854, Duplex

A standard package consists of 100 single plates or the equivalent in gangs. Carton, 10 gangs.

Special finishes are available at an addition in price.

Struck-Up—.040-Inch Metal
Brush Brass Finish

For Single Convenience Outlets			For Duplex Convenience Outlets			Description	Dimensions Inches
No.	Per 100	Pkg. Wt. Lb.	No.	Per 100	Pkg. Wt. Lb.		
6835	\$13.00	17	6854	\$13.00	16	Single	4 1/2 x 2 3/4
6836	63.00	15	6855	63.00	15	2-Gang	4 1/2 x 4 1/16
6837	94.50	14	6856	94.50	14	3-Gang	4 1/2 x 6 3/8
Lacco Brass Finish							
6780	\$11.50	16	6784	\$11.50	14	Single	4 1/2 x 2 3/4
6838	60.00	15	6857	60.00	13	2-Gang	4 1/2 x 4 1/16
6839	90.00	14	6858	90.00	12	3-Gang	4 1/2 x 6 3/8

Struck-Up—.060-Inch Metal
Brush Brass Finish

5548	\$23.50	25	6258	\$23.50	21	Single	4 1/2 x 2 3/4
5549	74.00	22	6259	74.00	18	2-Gang	4 1/2 x 4 1/16
6840	111.00	20	6859	111.00	15	3-Gang	4 1/2 x 6 3/8

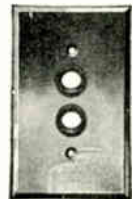
Solid Brass—.100-Inch Metal
Brush Brass Finish

6585	\$56.00	32	6587	\$56.00	30	Single	4 1/2 x 2 3/4
6586	112.00	26	6588	112.00	25	2-Gang	4 1/2 x 4 1/16
5550	168.00	23	6260	168.00	22	3-Gang	4 1/2 x 6 3/8

Hubbell Brass Flush Plates
For Single and Double Telephone Outlets



No. 6904, Single



No. 6935, Double

Furnished with adapter to 3 1/2 inches.

A standard package consists of 50 single plates or equivalent in gangs. Carton, 10 gangs.

All kinds of telephone plates may be assorted to make standard package or carton quantity.

Struck-Up—.040-Inch Metal
Brush Brass Finish

Single		Double		Description	Dimensions Inches	Pkg. Wt. Lb.	
No.	Per 100	No.	Per 100				
6904	\$30.00	6935	\$35.00	Single	4 1/2 x 2 3/4	8	
6905	60.00	6936	70.00	2-Gang	4 1/2 x 4 1/16	7	
6906	90.00	6937	105.00	3-Gang	4 1/2 x 6 3/8	7	
Lacco Brass Finish							
6907	\$28.50	6938	\$33.50	Single	4 1/2 x 2 3/4	8	
6908	57.00	6939	67.00	2-Gang	4 1/2 x 4 1/16	7	
6909	85.50	6940	100.50	3-Gang	4 1/2 x 6 3/8	7	

Struck-Up—.060-Inch Metal
Brush Brass Finish

6910	\$36.00	6941	\$41.00	Single	4 1/2 x 2 3/4	12
6911	72.00	6942	82.00	2-Gang	4 1/2 x 4 1/16	10
6912	108.00	6943	123.00	3-Gang	4 1/2 x 6 3/8	9

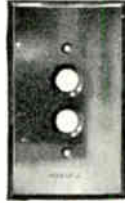
Solid Brass—.100-Inch Metal
Brush Brass Finish

6923	\$60.00	6947	\$65.00	Single	4 1/2 x 2 3/4	21
6924	120.00	6948	130.00	2-Gang	4 1/2 x 4 1/16	18
6925	180.00	6949	195.00	3-Gang	4 1/2 x 6 3/8	18

Hubbell Brass Flush Plates For Toggle and Push Switches



No. 8771—For Standard Toggle Switches



No. 8511—For Push Switches

A standard package consists of 100 single plates or equivalent in gangs.

Carton, 10 gangs.

Plates in brush brass, Lacco or special finishes may be assorted to make standard package or carton quantity.

Special finishes are available at an addition in price.

Struck-Up—.040-Inch Metal

Brush Brass Finish

For Toggle Switches		For Push Switches		Description	Pkg. Wt. Lb.
No.	Per 100	No.	Per 100		
8771	\$13.00	8511	\$13.00	Single	15
8772	26.00	8512	26.00	2-Gang	16
8773	39.00	8513	39.00	3-Gang	14
8774	126.00	8514	126.00	4-Gang	13
8775	157.50	8515	157.50	5-Gang	12
8776	189.00	8516	189.00	6-Gang	10
8777	220.50	8517	220.50	7-Gang	9
8778	252.00	8518	252.00	8-Gang	7

Lacco Brass Finish

8781	\$11.50	8521	\$11.50	Single	17
8782	23.00	8522	23.00	2-Gang	18
8783	34.50	8523	34.50	3-Gang	14
8784	120.00	8524	120.00	4-Gang	13
8785	150.00	8525	150.00	5-Gang	12
8786	180.00	8526	180.00	6-Gang	10
8787	210.00	8527	210.00	7-Gang	9
8788	240.00	8528	240.00	8-Gang	7

Struck-Up—.060-Inch Metal

Brush Brass Finish

8751	\$23.50	8551	\$27.00	Single	30
8752	47.00	8552	54.00	2-Gang	28
8753	70.50	8553	81.00	3-Gang	25
8754	148.00	8554	148.00	4-Gang	23
8755	185.00	8555	185.00	5-Gang	22
8756	222.00	8556	222.00	6-Gang	20
8757	259.00	8557	259.00	7-Gang	18
8758	296.00	8558	296.00	8-Gang	16

Solid Brass—.100-Inch Metal

Brush Brass Finish

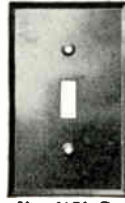
8761	\$56.00	8571	\$56.00	Single	16
8762	112.00	8572	112.00	2-Gang	28
8763	168.00	8573	168.00	3-Gang	26
8764	240.00	8574	240.00	4-Gang	24
8765	300.00	8575	300.00	5-Gang	23

Solid Brass—.100-Inch Metal—Tandem

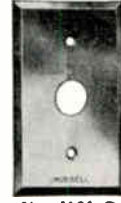
Brush Brass Finish

8795	\$150.00	8592	\$150.00	2-Gang	28
8796	225.00	8593	225.00	3-Gang	26
8797	316.00	8594	316.00	4-Gang	24

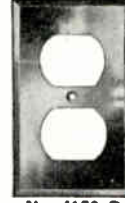
Hubbell Chromium Finished Brass Plates .040-Inch Metal



No. 4151-D



No. 4152-D



No. 4153-D



No. 4155-D

A standard package consists of 100 single plates or the equivalent in gangs. Carton, 10 gangs.

For Standard Toggle Switches

Dull Finished		Polished Finished		Description	Pkg. Wt. Lb.
No.	Per 100	No.	Per 100		
4151-D	\$32.00	4151-P	\$32.00	1-Gang	15
4152-D	60.00	4152-P	60.00	2-Gang	16
4153-D	88.00	4153-P	88.00	3-Gang	14
4154-D	180.50	4154-P	180.50	4-Gang	13

For No. 8121 Round Handle Toggle Switches

4161-D	\$34.00	4161-P	\$34.00	1-Gang	15
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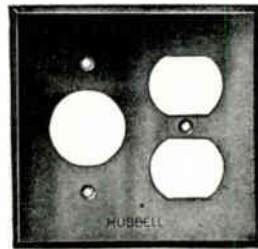
For Duplex Convenience Outlets

4150-D	\$32.00	4150-P	\$32.00	1-Gang	16
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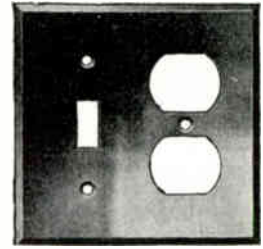
For Single Convenience Outlets

4155-D	\$32.00	4155-P	\$32.00	1-Gang	17
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Hubbell Brass Combination Plates



No. 7040



No. 7105

For Single and Duplex Convenience Outlets

No.	Per 100	Description	Car. ton	Std. Pkg.	Wt. Lb.
7040	\$56.00	.040-Inch Metal	2	10	3
6749	68.00	.060-Inch Metal	2	10	5

For Toggle Switch and Duplex Convenience Outlets

7105	\$56.00	.040-Inch Metal	2	10	3
7108	68.00	.060-Inch Metal	2	10	5

Screws for Hubbell Bakelite Plates



No. 7169 Screwdriver (Special Equipment)

French head brass screws (D-5873) to match bakelite are supplied on all bakelite plates but bakelite headed screw No. 7213 available on special order at an advance in price.



No. 7213

Special ornamental head screws and special screwdriver will be supplied with standard package quantities of plates when so specified without extra charge, or may be purchased separately.

Ornamental Brass Plate Screws

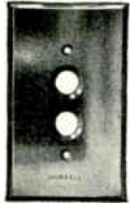
No.	Per 100	Car. ton	Std. Pkg.	Pkg.	Wt. Lb.
7169	\$1.50	100	100		1/4
7170	\$16.00	5	5		1/4
Special Screwdrivers for Above					
Bakelite Headed Screws					
7213	\$2.00	20	100		1/2
*7213-I	2.50	20	100		1/2

*Ivoryine.

Hubbell Combination Brass Plates

Hubbell Standard Combination Plates are made in .100-inch solid brass, also struck up .060 and .040-inch brass. Combination plates with sections for Interchangeable Line made in .060-inch brass only. Standard finish is brush brass. Special finishes are available at an advance in price.

If plates are ordered by letter only and no finish is specified, brush brass will be supplied. A combination plate must be made of 2 or more different letters and not gangs of standard plates. For example: AA is not a combination plate.



A—For Push Switch
.040-Inch...\$.28
.060-Inch...\$.34
Solid......62



C—With Round Bull's-Eye for Pilot Light Receptacle
.040-Inch...\$.62
.060-Inch...\$.68
Solid......98



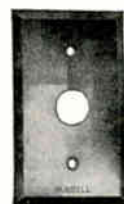
T—With Rectangular Bull's Eye for Pilot Light Receptacle
.040-Inch...\$.62
.060-Inch...\$.68
Solid......98



F—For No. 7712 Pilot Light Receptacle
.040-Inch......040-Inch...\$.70
.060-Inch......060-Inch...\$.76
Solid.....\$1.04



S—For No. 7739 Switch and Bull's-Eye
.040-Inch...\$.70
.060-Inch...\$.76
Solid.....1.04



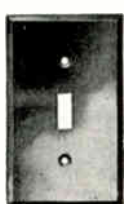
O—For 3/4-Inch Push Button
.040-Inch......040-Inch...\$.62
.060-Inch......060-Inch...\$.62
Solid.....\$.62



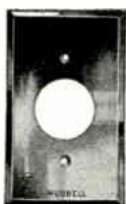
B—For Hubbell Round Handle Toggle Switch
.040-Inch...\$.28
.060-Inch...\$.34
Solid......62



D—For Outlet Box
.040-Inch...\$.34
.060-Inch...\$.38
Solid......68



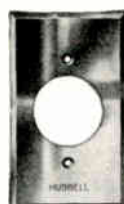
P—For Standard Toggle Switch
.040-Inch...\$.28
.060-Inch...\$.34
Solid......62



G—For Single Convenience Outlets and All Other Std. 2, 3, and 4-Wire Flush Receptacles with Round Faces
.040-Inch...\$.28
.060-Inch...\$.34
Solid......62



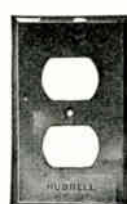
Y—For No. 7410 4-Wire Twist-Lock Receptacle Only
.040-Inch...\$.28
.060-Inch...\$.34
Solid......62



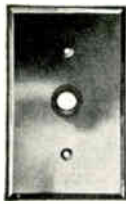
K—For No. 7438 Receptacle Only
.040-Inch...\$.28
.060-Inch...\$.34
Solid......62



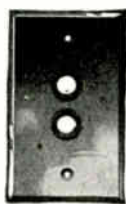
J—Double Hinge Cover for No. 5579 Convenience Outlet
.040-Inch......040-Inch...\$.62
.060-Inch......060-Inch...\$.62
Solid.....\$1.62



H—For Duplex Convenience Outlet
.040-Inch...\$.28
.060-Inch...\$.34
Solid......62



M—For Telephone Outlet—One Bushing
.040-Inch...\$.36
.060-Inch...\$.42
Solid......70



N—For Telephone Outlet—Two Bushings
.040-Inch...\$.42
.060-Inch...\$.48
Solid......76



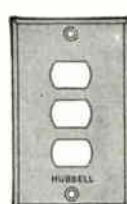
E—For Switch and Receptacle
.040-Inch...\$.28
.060-Inch...\$.34
Solid......62



A1—Single Opening (Horizontal) for One Interchangeable Device
.040-Inch...\$.28
.060-Inch...\$.34
‡.060-Inch...\$.78



B1—Two Openings for Two Interchangeable Devices
.040-Inch...\$.33
.060-Inch...\$.39
‡.060-Inch...\$.84



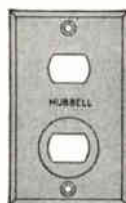
C1—Three Openings for Three Interchangeable Devices
.040-Inch...\$.33
.060-Inch...\$.39
‡.060-Inch...\$.84



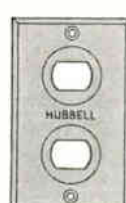
G1—Single Opening (Vertical) for One Interchangeable Device
.040-Inch...\$.28
.060-Inch...\$.34
‡.060-Inch...\$.78



J1—Blank, Fastening Screws on 3 1/16-Inch Centers (Interchangeable)
.040-Inch...\$.34
.060-Inch...\$.38
‡.060-Inch...\$.85



R1—Plate with Bakelite Insulating Adapter for Installing with Switch or Pilot Light (Interchangeable)
.040-Inch...\$.33
.060-Inch...\$.39
‡.060-Inch...\$.84



V1—For Two Interchangeable Devices—Two Insulating Adapters
.040-Inch...\$.33
.060-Inch...\$.39
‡.060-Inch...\$.84

*Screw spacing, 2 3/8 inches. Adapter to 3 1/2 inches for box mounting supplied with this section.

†Only supplied in solid brass.

‡Available in .060-inch metal only.

§Combinations embracing two adjacent G, Y, or K sections for Nos. 7250, 7310, 7410 or 7438 receptacles, require an extra blank gang between them to provide space for insertion of caps.

¶Tandem.

Tandem or special size combination plates can only be supplied in solid brass. When arranged in tandem, add 25% to solid price of horizontal plates.

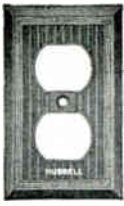
In ordering combination plates, use letters and thickness of metal in the same relative position as required. For example: P C G .060-inch would cover a plate to take one toggle switch, one bull's-eye, and one single convenience outlet—the bull's-eye to be in the middle, to be of .060-inch brass.

Hubbell Uniline Bakelite Plates

For Standard Wiring Devices



No. 91071



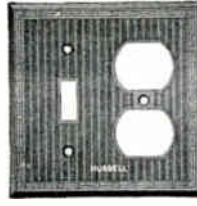
No. 91101



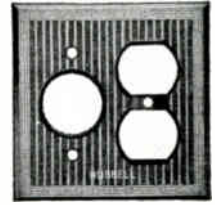
No. 91091



No. 91111



No. 91532



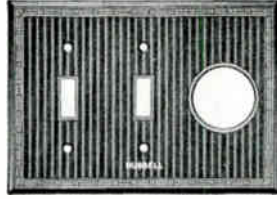
No. 91572



No. 91081



No. 91181



Nos. 91451, 91461 and 91481
Sectional Plate Assembly



No. 91451



No. 91461



No. 91471



No. 91481

For Toggle Switches

Brown

No.	Per 100	Car-ton	Std. Pkg.	Pkg. Wt. Lb.	Description
91071	\$6.00	10	100	10	1-Gang for 1 Switch.....
91072	12.00	10G	100G	10	2-Gang for 2 Switches.....
91073	18.00	10G	100G	10	3-Gang for 3 Switches.....
91074	24.00	10G	100G	10	4-Gang for 4 Switches.....
91075	96.50	10G	100G	7	5-Gang for 5 Switches.....
91076	116.00	10G	100G	7	6-Gang for 6 Switches.....

Ivory

No.	Per 100	Car-ton	Std. Pkg.	Pkg. Wt. Lb.	Description
92071	\$11.00	10	50	5	1-Gang for 1 Switch.....
92072	22.00	10G	50G	5	2-Gang for 2 Switches.....
92073	33.00	10G	50G	5	3-Gang for 3 Switches.....
92074	44.00	10G	50G	5	4-Gang for 4 Switches.....
92075	125.00	10G	50G	4	5-Gang for 5 Switches.....
92076	150.00	10G	50G	4	6-Gang for 6 Switches.....

For Convenience Outlets

91101	\$6.00	10	100	10	1-Gang for Duplex Convenience Outlet.....	92101	\$11.00	10	50	5	1-Gang for Duplex Convenience Outlet.....
91102	12.00	5G	50G	9	2-Gang for Duplex Convenience Outlet.....	92102	22.00	5G	50G	9	2-Gang for Duplex Convenience Outlet.....
91091	6.00	10	100	10	1-Gang for Single Convenience Outlet.....	92091	11.00	10	50	5	1-Gang for Single Convenience Outlet.....
91111	23.50	10	30	3	1-Gang for No. 7438, 30-Ampere Convenience Outlet.....	92111	29.50	10	30	3	1-Gang for No. 7438, 30-Ampere Convenience Outlet.....

Combination

91532	\$12.00	2	10	2	2-Gang for Toggle Switch and Duplex Convenience Outlet...	92532	\$22.00	2	10	2	2-Gang for Toggle Switch and Duplex Convenience Outlet...
91512	12.00	2	10	2	2-Gang for Toggle Switch and Single Convenience Outlet....	92512	22.00	2	10	2	2-Gang for Toggle Switch and Single Convenience Outlet....
91572	32.00	2	10	2	2-Gang for Single and Duplex Convenience Outlet.....	92572	47.00	2	10	2	2-Gang for Single and Duplex Convenience Outlet.....
91543	30.00	2	10	2	3-Gang for 2 Toggle Switches and Duplex Convenience Outlet	92543	45.00	2	10	2	3-Gang for 2 Toggle Switches and Duplex Convenience Outlet
91554	94.50	2	10	3	4-Gang for 3 Toggle Switches and Duplex Convenience Outlet	92554	117.00	2	10	3	4-Gang for 3 Toggle Switches and Duplex Convenience Outlet

For Push Button Switches

91081	\$6.00	10	100	9	1-Gang for 1 Switch.....	92081	\$11.00	10	50	5	1-Gang for 1 Switch.....
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Blank and Telephone

Furnished complete with the necessary straps and screws.

91181	\$6.00	10	50	5	1-Gang Telephone Plate, 1/8-Inch Cord Hole.....	92181	\$11.00	10	30	3	1-Gang Telephone Plate, 1/8-Inch Cord Hole.....
91121	6.00	10	50	5	1-Gang Blank Plate.....	92121	11.00	10	30	3	1-Gang Blank Plate.....
91122	47.00	10G	50G	5	2-Gang Blank Plate.....	92122	59.00	10G	30G	3	2-Gang Blank Plate.....

Sectional

Sectional Plates are easily assembled and may be interchanged with one another to make up various multi-gang and combination plates.

91451	\$11.50	10	50	7	End Section for Toggle Switch.....	92451	\$17.50	10	50	5	End Section for Toggle Switch.....
91461	11.50	10	50	6	Center Section for Toggle Switch.....	92461	17.50	10	50	4	Center Section for Toggle Switch.....
91471	11.50	10	50	4	End Section for Duplex Receptacle.....	92471	17.50	10	50	4	End Section for Duplex Receptacle.....
91481	11.50	10	50	5	End Section for Single Receptacle.....	92481	17.50	10	50	5	End Section for Single Receptacle.....

Brown bakelite plates are furnished as standard with brown plated screws. Ivory plates are furnished as standard with Ivory enameled screws. Brown bakelite and Ivory head screws may be furnished on order at a slight additional charge.

Any of the above plates can be furnished in black bakelite at an addition of \$2.00 per hundred to the regular brown bakelite prices.

The numbers applying to the black bakelite are the same as for the brown bakelite, except that the second number is 3 instead of 1. For example: No. 91071 brown bakelite plate becomes No. 93071 black bakelite plate.

H & H Brass Plates

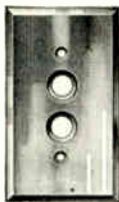
.040-Inch Brass



No. 8841



No. 1485



No. 4077

For Tumbler Switches

Brush Brass		Duro Finish		Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
No.	Per 100	No.	Per 100				
8841	\$13.00	8841-D	\$11.50	1 Gang...	10G	100G	19
8842	26.00	8842-D	23.00	2 Gangs...	10G	100G	16
8843	39.00	8843-D	34.50	3 Gangs...	10G	100G	14

For Duplex Convenience Outlets

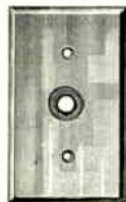
1485	\$13.00	1485-D	\$11.50	1 Gang...	10G	100G	16
1486	63.00	1486-D	60.00	2 Gangs...	10G	100G	13

For Push Button Switches

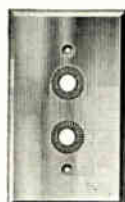
4077	\$13.00	4077-D	\$11.50	1 Gang...	10G	100G	19
4078	26.00	4078-D	23.00	2 Gangs...	10G	100G	16

H & H Brass Plates

.040-Inch Brass



No. 3144



No. 3244



No. 4068

Screw holes are spaced 2 3/8 inches on centers. This is standard and accomplished by using a sub-frame which is fastened to the box, and the plate is then attached to the sub-frame, thus allowing adjustment for unevenness in box installations. Sub-frame is furnished with each plate.

Telephone—Single Outlet

Brush Brass		Duro Finish		Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
No.	Per 100	No.	Per 100				
3144	\$30.00	3144-D	\$28.50	1 Gang...	10G	50G	10

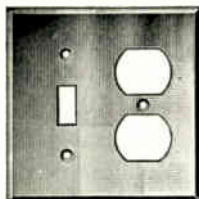
Telephone—Double Outlet

3244	\$35.00	3244-D	\$33.50	1 Gang...	10G	50G	10
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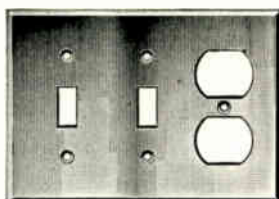
Blank

4068	\$27.00	4068-D	\$25.50	1 Gang...	10G	50G	10
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H & H Combination Brass Plates



No. 4315



No. 4297

.040-Inch Brass

Brush Brass		Duro Finish		Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
No.	Per 100	No.	Per 100				
4314	\$56.00	4314-D	\$53.00	2G. Tumbler & Single	2	10	3
4315	56.00	4315-D	53.00	2G. Tumbler & Duplex	2	10	3
4367	56.00	4367-D	53.00	2G. Single & Duplex..	2	10	2
4316	84.00	4316-D	79.50	3G. 2-Tumbler & Single	2	10	2
4317	84.00	4317-D	79.50	3G. 2-Tumbler & Duplex	2	10	2

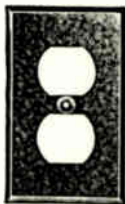
.060-Inch Brass

4294	\$68.00	4294-D	\$65.00	2G. Tumbler & Single	2	10	4
4295	68.00	4295-D	65.00	2G. Tumbler & Duplex	2	10	3
4368	68.00	4368-D	65.00	2G. Single & Duplex..	2	10	3
4296	102.00	4296-D	97.50	3G. 2-Tumbler & Single	2	10	3
4297	102.00	4297-D	97.50	3G. 2-Tumbler & Duplex	2	10	3

H & H Crackle Finish Metal Plates

.040-Inch Brass

For Convenience Outlets



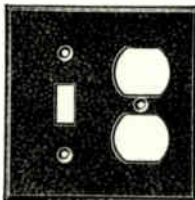
A 1-gang duplex type plate. Carton, 10 gangs. Standard package, 100 gangs.

Weight per package, 16 pounds.

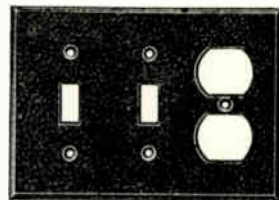
No. 4290-B, Brown.....per 100 \$6.00
No. 4290, Ivory.....per 100 9.00

H & H Crackle Finish Metal Combination Plates

.040-Inch Brass



No. 4305-B



No. 4306-B

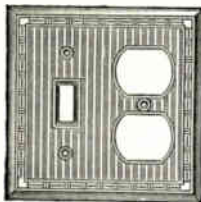
Brown and Ivory

Brown		Ivory		Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
No.	Per 100	No.	Per 100				
4305-B	\$12.00	4305	\$18.00	2G, Tumbler-Duplex..	2	10	4
4306-B	18.00	4306	27.00	3G, 2 Tumbler-Duplex	2	10	4

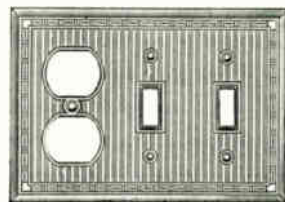
White

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
4290-W	\$10.00	1 Gang, Duplex	10G	100G	16
4305-W	20.00	2 Gangs, Tumbler-Duplex.	2	10	4
4306-W	30.00	3 Gangs, 2 Tumbler-Duplex	2	10	4

H & H Uniline Design Combination Plates



No. 92532



No. 92543

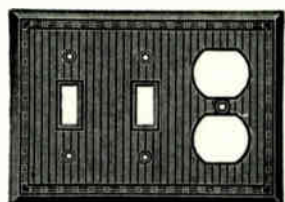
Supplied with ivory enameled metal screws.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
92512	\$22.00	2G, Tumbler and Single	2	10	2
92532	22.00	2G, Tumbler and Duplex	2	10	2
92572	47.00	2G, Single and Duplex	2	10	2
92523	45.00	3G, 2 Tumbler and Single	2	10	2 1/2
92543	45.00	3G, 2 Tumbler and Duplex	2	10	2 1/2
92554	177.00	4G, 3 Tumbler and Duplex	2	10	3

H & H Uniline Design Combination Plates



No. 91532



No. 91543

Supplied with brown plated metal screws.

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
91512	\$12.00	2G, Tumbler and Single	2	10	2
91532	12.00	2G, Tumbler and Duplex	2	10	2
91572	32.00	2G, Single and Duplex	2	10	2
91523	30.00	3G, 2 Tumbler and Single	2	10	2 1/2
91543	30.00	3G, 2 Tumbler and Duplex	2	10	2 1/2
91554	94.50	4G, 3 Tumbler and Duplex	2	10	3



No. 8691 H & H 1-Gang Brass Plates For Warning Light Receptacles

Made of .040-inch brass. Round, red glass jewel. Candelabra base lamp.

Carton, 10. Standard package, 30. Weight per standard package, 6 pounds.

No. 8691.....per 100 \$49.00



No. 6408 H & H 1-Gang Brass Louvre Plates For Warning Light Receptacles

Made of .040-inch brass. For deflected lighting in stairways, theatres, hospitals, etc. Candelabra base lamp.

Carton, 5. Standard package, 30. Weight per standard package, 6 pounds.

No. 6408.....per 100 \$121.00



No. 2999 H & H Warning Light Receptacles

With Candelabra Lamps
75 Watts, 125 Volts

Receptacles will be supplied with 220-volt candelabra lamps on special order.

Carton, 10. Standard package, 30. Weight per standard package, 18 pounds.

No. 2999.....per 100 \$106.00



No. 2971 H & H Candelabra Lamps

For Warning Light Receptacles
125 Volts

Carton, 10. Standard package, 30.
Weight per standard package, 3/4 pound.

No. 2971.....per 100 \$30.00

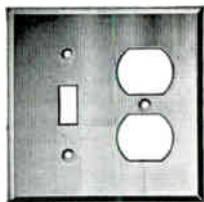


No. 4290-C H & H Silvex Polished Finish Metal Plates

For Convenience Outlets

A 1-gang duplex type plate.
Carton, 10 gangs. Standard package, 100 gangs.
Weight per package, 16 pounds.

No. 4290-C.....per 100 \$20.00



No. 4305-C H & H Silvex Polished Finish Metal Combination Plates

For Tumbler Switches

A 2-gang duplex type plate.
Carton, 2. Standard package, 10.
Weight per package, 4 pounds.

No. 4305-C.....per 100 \$54.00

H & H Duracrome Brass Plates .040-Inch Brass



Dull Chromium No.	Price Per 100	Polished Chromium No.	Price Per 100	Description	Carton	Std. Pkg.	Wt. Lb.
4151	\$32.00	4151-P	\$32.00	1 Gang, Tumbler	10G	100G	19
4152	60.00	4152-P	60.00	2 Gang, Tumbler	10G	100G	16
4153	88.00	4153-P	88.00	3 Gang, Tumbler	10G	100G	14
4154	180.50	4154-P	180.50	4 Gang, Tumbler	10G	100G	14
4150	32.00	4150-P	32.00	1 Gang, Duplex..	10G	100G	16
4155	32.00	4155-P	32.00	1 Gang, Single...	10G	100G	17

H & H Metal Plates

SPACINGS.—Plates which are to be attached to flush devices have screw holes spaced 2 3/8 inches on centers. Gangs are spaced 1 3/8 inches on centers horizontally, and 3 3/8 inches on centers vertically.

ROUND CORNERS.—Solid plates can be furnished on special order with round corners at an advance in price. Prices upon application.

SQUARE CORNERS AND SQUARE EDGES.—Solid plates can be furnished without the usual bevel edge but with square corners and square edges at the same price as solid plates, if the dimensions and spacings are standard. Otherwise, special prices apply.

ENGRAVING OR MARKING.—Plates can be engraved in block design lettering of any height. Prices upon application.

HAMMERED BRASS.—Solid plates can be furnished on special order with a genuine hammered finish. Prices upon request.

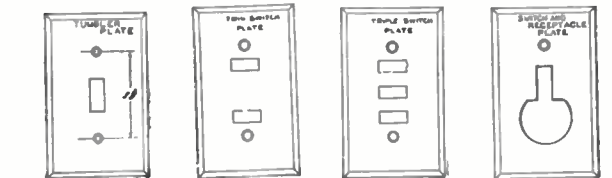
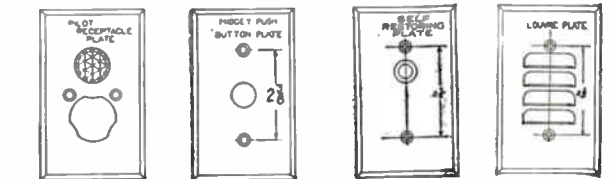
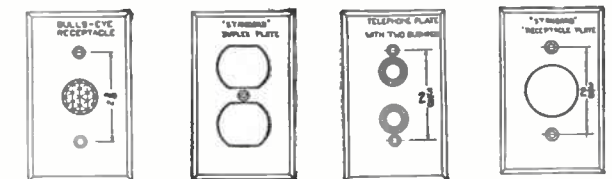
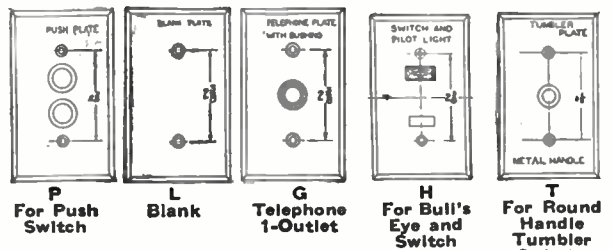
RETURN OR EXTENSION EDGES.—These plates are used when the wall case or switch box projects from the wall and the devices are not flush. Prices upon application.

COMBINATION PLATES.—A combination plate is made to order from 2 or more of the standard units listed below. If spacings or dimensions differ from standard units, special plate prices apply. The list price of any combination plate is the sum of the list of the standard units making up the combination.

The same symbol letters are used for struck-up or solid plates and the thickness of brass desired must be specified as well as the symbol letters. Three thicknesses of brass are supplied, .100 inch (solid), .060 inch and .040 inch.

Combination plates are made only on special order and are therefore not subject to return for credit.

The standard package is 10 plates of the same combination, carton, 10.

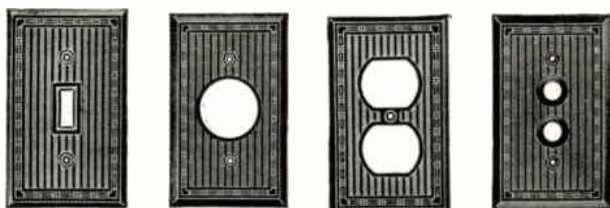


I For Square Handle Tumbler Switch
N For 2-Lever Tumbler Switch
M For 3-Lever Tumbler Switch
W For Switch and Receptacle

H & H Uniline Design Plates

Brown Bakelite

For Standard Wiring Devices



No. 91071 No. 91091 No. 91101 No. 91081

Supplied with brown plated metal screws.

For Tumbler Switches

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
91071	\$6.00	1 Gang	10	100	10
91072	12.00	2 Gangs	10G	100G	10
91073	18.00	3 Gangs	10G	100G	10
91074	24.00	4 Gangs	10G	100G	10
91075	96.50	5 Gangs	10G	100G	7
91076	116.00	6 Gangs	10G	100G	7

For Convenience Outlets

91091	\$6.00	1 Gang, Single	10	100	10
91101	6.00	1 Gang, Duplex	10	100	10
91102	12.00	2 Gangs, Duplex	10G	100G	9

For Push Button Switches

91081	\$6.00	1 Gang	10	100	9
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Blank

91121	\$6.00	1 Gang	10	50	5
91122	47.00	2 Gangs	10G	50G	5

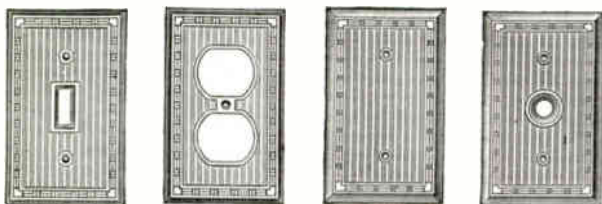
Telephone

91181	\$6.00	1 Gang, 1 Outlet, 1/2-Inch Hole	10	50	5
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H & H Uniline Design Plates

Ivorylite

For Standard Wiring Devices



No. 92071 No. 92101 No. 92121 No. 92181

Supplied with ivory enameled metal screws.

For Tumbler Switches

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
92071	\$11.00	1 Gang	10	50	5
92072	22.00	2 Gangs	10G	50G	5
92073	33.00	3 Gangs	10G	50G	5
92074	44.00	4 Gangs	10G	50G	5
92075	125.00	5 Gangs	10G	50G	4
92076	150.00	6 Gangs	10G	50G	4

For Convenience Outlets

92091	\$11.00	1 Gang, Single	10	50	5
92101	11.00	1 Gang, Duplex	10	50	5
92102	22.00	2 Gangs, Duplex	10G	50G	5

For Push Button Switches

92081	\$11.00	1 Gang	10	50	5
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Blank

92121	\$11.00	1 Gang	10	30	4
92122	59.00	2 Gangs	10G	30G	4

Telephone

92181	\$11.00	1 Gang, 1 Outlet, 1/2-Inch Hole	10	30	4
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H & H Uniline Design Interchangeable

Line Plates, Brown Bakelite

For Interchangeable Line Wiring Devices



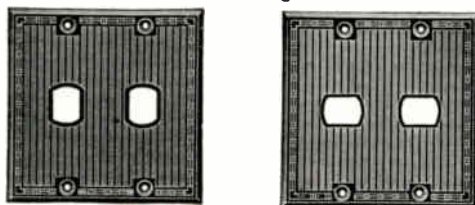
No. 91041 No. 91011 No. 91021 No. 91031

The correct mounting straps are supplied with each plate. Supplied with brown plated screws.

Single Gang

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
91041	\$11.50	One Opening, Vertical	10	100	14
91011	11.50	One Opening, Horizontal	10	100	16
91021	16.00	Two Openings	10	50	8
91031	16.00	Three Openings	10	30	6

Two Gangs



No. 91042 No. 91012

91042	\$22.50	Two Openings, Vertical	10	50	16
91012	22.50	Two Openings, Horizontal	10	50	16
91022	32.00	Four Openings	10	30	9
91032	45.00	Six Openings	10	20	5

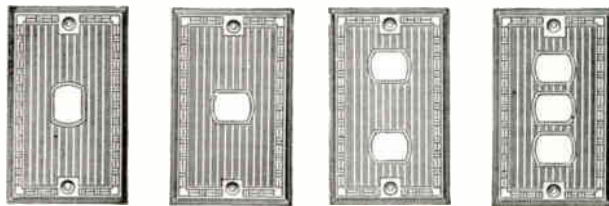
Three Gangs

91023	\$64.00	Six Openings	10	20	6
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H & H Uniline Design Interchangeable

Line Plates, Ivorylite

For Interchangeable Line Wiring Devices



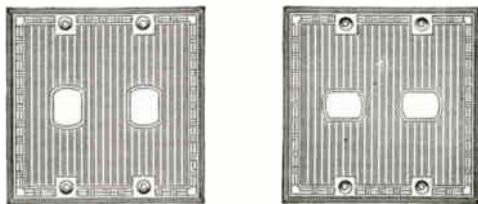
No. 92041 No. 92011 No. 92021 No. 92031

The correct mounting straps are supplied with each plate. Supplied with ivory enameled metal screws.

Single Gang

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
92041	\$17.50	One Opening, Vertical	10	100	14
92011	17.50	One Opening, Horizontal	10	100	16
92021	22.00	Two Openings	10	50	7
92031	22.00	Three Openings	10	30	6

Two Gangs



No. 92042 No. 92012

92042	\$34.50	Two Openings, Vertical	10	30	10
92012	34.50	Two Openings, Horizontal	10	30	10
92022	44.00	Four Openings	10	30	9
92032	57.00	Six Openings	10	20	5

Three Gangs

92023	\$82.00	Six Openings	10	20	6
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Type C Bull Dog Vacu-Break Safety Switches

Standard Line

Single Throw—Fusible—Non-Interlocking

Quick Make—Quick Break



The highly effective Vacu-Break arc control principle is incorporated in all Bull Dog Vacu-Break Safety Switches, regardless of price. As in other lines of switches, the Master (Type A) construction provides the maximum in service and safety. The Standard (Type C) construction is designed for those installations where an interlock is not required, as motor circuits and certain other industrial uses. The Junior (Type D) construction is intended for general purpose installations, such as service entrance and for motor circuits not exceeding 2 hp.

Cable terminals are solderless Wire Grips.
Standard finish is black enamel.

2-Pole, 230 Volts A.C.—250 Volts D.C.

No.	Each	Amp.	HP. RATING			Weight Pounds
			575 V. A.C.	230 V. A.C.	250 V. D.C.	
24221S	\$4.50	30	....	2	5	5
*24221	10.00	30	....	2	5	7
24222	11.50	60	....	5	10	11
24223	20.00	100	....	10	15	26
24224	27.50	200	....	15	30	34
24225	80.00	400	....	30	50	141
24226	124.00	600	....	....	....	205

3-Pole, 230 Volts A.C.

24321S	\$7.00	30	....	3	....	7
*24321	12.50	30	....	3	....	9
24322	12.50	60	....	7½	....	12
24323	25.00	100	....	15	....	27
24324	36.50	200	....	30	....	37
24325	92.50	400	....	50	....	153
24326	144.00	600	....	....	....	226

4-Pole, 230 Volts A.C.

*24421	\$14.50	30	....	3	....	15
24422	17.00	60	....	10	....	16
24423	37.50	100	....	20	....	32
24424	60.00	200	....	30	....	51
24425	131.50	400	....	50	....	174
24426	207.00	600	....	....	....	253

3-Pole, Switched Neutral, 230 Volts A.C.—125-250 Volts (3 Blades, 2 Fuse Connections)

25321S	\$7.00	30	....	....	....	6
*25321	12.50	30	....	....	....	9
25322	12.50	60	....	....	....	12
25323	25.00	100	....	....	....	27
25324	36.50	200	....	....	....	37
25325	92.50	400	....	....	....	152
25326	144.00	600	....	....	....	226

3-Pole, 575 Volts A.C.

24351	\$13.50	30	....	7½	....	12
24352	17.00	60	....	20	....	13
24353	35.00	100	....	30	....	28
24354	52.50	200	....	50	....	46

4-Pole, 575 Volts A.C.

24451	\$22.50	30	....	7½	....	18
24452	25.00	60	....	20	....	19
24453	50.00	100	....	30	....	38
24454	71.50	200	....	50	....	53

*60-ampere switch parts with 30-ampere fuse clips and spacings.



Type C Bull Dog Vacu-Break Safety Switches

Standard Line
Non-Interlocking

Quick Make—Quick Break

Cable terminals are solderless Wire Grips.

Standard finish is black enamel.

Single Throw—Fusible

3-Pole, Solid Neutral, 230 Volts A.C.—125-250 Volts (2 Blades, 2 Fuse Connections)

No.	Each	Amp.	HP. RATING			Weight Pounds
			575 V. A.C.	230 V. A.C.	250 V. D.C.	
26321S	\$6.00	30	....	....	....	6
*26321	8.00	30	....	3	....	9
26322	11.50	60	....	7½	....	12
26322PT	11.50	60	....	....	....	12
26322P	11.50	60	....	....	....	12
26323	20.00	100	....	15	....	27
26323PT	20.00	100	....	....	....	27
26323P	20.00	100	....	....	....	27
26324	31.50	200	....	30	....	37
26325	87.50	400	....	50	....	152
26326	138.00	600	....	....	....	224

4-Pole, Solid Neutral, 230 Volts A.C.

(3 Blades, 3 Fuse Connections)

26421	\$10.00	30	....	3	....	14
26422	14.50	60	....	10	....	15
26423	29.00	100	....	20	....	31
26424	44.00	200	....	30	....	48
26425	112.50	400	....	50	....	162
26426	197.50	600	....	....	....	237

5-Pole, Solid Neutral, 115-230 Volts A.C.

4 Blades, 4 Fuse Connections

26521	\$16.00	30	....	....	....	17
26522	25.00	60	....	....	....	20
26523	50.00	100	....	....	....	40
26524	70.00	200	....	....	....	53
26525	163.50	400	....	....	....	177
26526	253.50	600	....	....	....	257

Single Throw—Not Fusible

2-Pole, 230 Volts A.C.—250 Volts D.C.

27221S	\$4.50	30	....	3	5	5
*27221	6.00	30	....	3	7½	7
27222	10.00	60	....	7½	15	9
27223	20.00	100	....	15	20	15
27224	26.50	200	....	20	40	21
27225	56.50	400	....	30	50	86
27226	95.00	600	....	....	....	122

3-Pole, 230 Volts A.C.

27321S	\$7.00	30	....	5	....	6
*27321	8.00	30	....	5	....	9
27322	11.50	60	....	10	....	9
27323	21.50	100	....	20	....	16
27324	31.50	200	....	40	....	23
27325	71.50	400	....	50	....	132
27326	113.00	600	....	....	....	172

4-Pole, 230 Volts A.C.

27421	\$12.50	30	....	5	....	10
27422	17.00	60	....	15	....	14
27423	34.00	100	....	25	....	25
27424	52.50	200	....	40	....	35
27425	94.00	400	....	50	....	157
27426	188.00	600	....	....	....	222

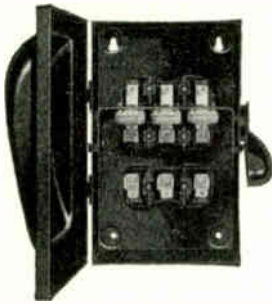
3-Pole, 575 Volts A.C.

27351	\$10.00	30	....	10	....	10
27352	13.50	60	....	25	....	10
27353	27.50	100	....	40	....	17
27354	40.00	200	....	50	....	24

4-Pole, 575 Volts A.C.

27451	\$13.50	30	....	10	....	15
27452	22.50	60	....	25	....	15
27453	39.00	100	....	40	....	27
27454	57.50	200	....	50	....	37

*60-ampere switch parts with 30-ampere fuse clips and spacings.



**Type D Bull Dog
Vacu-Break Safety
Switches**

**Junior Line
Non-Interlocking**

Cable terminals are solderless Wire Grips.

Standard finish is black enamel.



**Type A Bull Dog Vacu-
Break Safety Switches**

**Master Line
Single Throw—Not Fusible—
Safety Interlocks**

Quick Make—Quick Break

Cable terminals are solderless Wire Grips.

Standard finish is black enamel.

Single Throw—Fusible

No.	Each	Amp.	Voltage	Fuse Conn.	Weight Pounds	HP. RATING		
						230 V. A.C.	250 V. D.C.	Weight Pounds
2-Pole								
*34211S	\$1.70	30	125/250-125 D.C.	2 Plug	5			5
34221S	2.20	30	230 A.C.-250 D.C.	2 Cart.	5			10
34222	6.20	60	230 A.C.-250 D.C.	2 Cart.	11			17
34223	15.00	100	230 A.C.-250 D.C.	2 Cart.	26			23
34224	25.00	200	230 A.C.-250 D.C.	2 Cart.	34			89
3-Pole								
34311S	\$3.40	30	115 A.C.	3 Plug	6			125
†34321S	4.10	30	230 A.C.	3 Cart.	6			170
34322	7.90	60	230 A.C.	3 Cart.	12			250
34323	16.50	100	230 A.C.	3 Cart.	27			
34324	31.50	200	230 A.C.	3 Cart.	37			
4-Pole								
34421	\$7.90	30	230 A.C.	4 Cart.	15			
34422	14.10	60	230 A.C.	4 Cart.	16			
34423	30.00	100	230 A.C.	4 Cart.	32			
34424	56.50	200	230 A.C.	4 Cart.	51			
3-Pole, Switched Neutral (3 Blades, 2 Fuse Connections)								
35311S	\$3.40	30	125-250	2 Plug	6			6
35321S	4.10	30	230 A.C.	2 Cart.	6			11
35322	7.90	60	230 A.C.	2 Cart.	12			19
35323	16.50	100	230 A.C.	2 Cart.	27			26
35324	31.50	200	230 A.C.	2 Cart.	37			135
2-Pole, Solid Neutral (1 Blade, 1 Fuse Connection)								
36211S	\$1.60	30	125 D.C.	1 Plug	5			175
36221S	2.20	30	250 D.C.	1 Cart.	5			240
3-Pole, Solid Neutral (2 Blades, 2 Fuse Connections)								
36311S	\$2.00	30	125-250	2 Plug.	6			310
36321S	3.40	30	125-250	2 Cart.	6			
36322	6.20	60	125-250	2 Cart.	12			
36323	15.50	100	125-250	2 Cart.	27			
36324	27.50	200	125-250	2 Cart.	37			
4-Pole, Solid Neutral (3 Blades, 3 Fuse Connections)								
36421	\$7.30	30	230-A.C.	3 Cart.	14			
36422	11.80	60	230 A.C.	3 Cart.	15			
36423	25.00	100	230 A.C.	3 Cart.	31			
36424	41.50	200	230 A.C.	3 Cart.	48			
5-Pole, Solid Neutral (4 Blades, 4 Fuse Connections)								
36521	\$10.70	30	115-230 A.C.	4 Cart.	17			
36522	18.60	60	115-230 A.C.	4 Cart.	20			
36523	39.00	100	115-230 A.C.	4 Cart.	40			
36524	66.50	200	115-230 A.C.	4 Cart.	53			

Single Throw—Not Fusible

No.	Each	Amp.	Voltage	Weight Pounds	HP. RATING		
					230 V. A.C.	250 V. D.C.	Weight Pounds
2-Pole							
37221S	\$2.00	30	230 A.C.-250 D.C.	5			14
37222	5.50	60	230 A.C.-250 D.C.	9			21
37223	14.00	100	230 A.C.-250 D.C.	15			29
37224	21.50	200	230 A.C.-250 D.C.	21			40
3-Pole							
37321S	\$3.50	30	230 A.C.	7			73
37322	7.50	60	230 A.C.	9			79
37323	15.00	100	230 A.C.	16			128
37324	29.00	200	230 A.C.	23			188
4-Pole							
37421	\$7.00	30	230 A.C.	10			31
37422	12.50	60	230 A.C.	14			55
37423	26.50	100	230 A.C.	25			80
37424	45.00	200	230 A.C.	35			90

* 2 hp., 125 volts d.c.
† 2 hp., 230 volts a.c.

2-Pole, 230 Volts A.C.—250 Volts D.C.

No.	Each	Amp.	HP. RATING			Weight Pounds
			575 V. A.C.	230 V. A.C.	250 V. D.C.	
17221S	\$9.00	30	..	3	7½	5
17222	12.50	60	..	7½	15	10
17223	25.00	100	..	15	20	17
17224	31.50	200	..	20	40	23
17225	67.50	400	..	30	50	89
17226	112.50	600	..	..	..	125
17227	220.00	800	..	..	..	170
17228	299.00	1200	..	..	..	250
2-Pole, 230 Volts A.C.—575 Volts A.C.						
17261	\$12.50	30	..	3	7½	10
17262	17.00	60	..	..	..	10
17263	26.00	100	..	..	..	17
17264	35.00	200	..	..	..	24
17265	101.50	400	..	..	..	92
17266	146.50	600	..	..	..	135
3-Pole, 230 Volts A.C.—575 Volts A.C.						
*17321S	\$11.00	30	..	5	..	6
17351	14.50	30	10	5	..	11
17352	20.50	60	25	10	..	11
17353	30.50	100	40	20	..	19
17354	43.00	200	50	40	..	26
17355	112.50	400	..	50	..	135
17356	180.50	600	..	..	..	175
17357	293.00	800	..	..	..	240
17358	394.00	1200	..	..	..	310
4-Pole, 230 Volts A.C.—575 Volts A.C.						
*17421	\$20.50	30	..	5	..	11
17452	27.00	30-60	25	15	..	16
17453	39.50	100	40	25	..	29
17454	59.00	200	50	50	..	39
17455	146.50	400	..	50	..	160
17456	220.00	600	..	..	..	225
17457	378.00	800	..	..	..	295
17458	518.00	1200	..	..	..	360

*Rated at 230 Volts A.C. only.

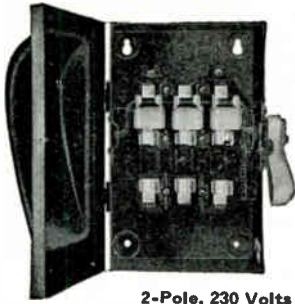
Bull Dog Enclosed Knife Type Switches

Type A Double Throw—Not Fusible

Quick Break Only

2-Pole, 230 Volts A.C.—250 Volts D.C.

No.	Each	Amp.	HP. RATING			Weight Pounds
			575 V. A.C.	230 V. A.C.	250 V. D.C.	
63221	\$14.50	30	..	..	..	14
23222	19.00	30-60	..	7½	..	21
23223	34.00	100	..	10	..	29
23224	47.50	200	..	10	..	40
23225	135.00	400	..	..	..	73
23226	191.50	600	..	..	..	103
3-Pole, 230 Volts A.C.						
63321	\$17.00	30	..	..	..	17
23322	22.50	30-60	..	10	..	25
23323	41.50	100	..	20	..	40
23324	69.00	200	..	40	..	63
23325	181.00	400	..	..	..	105
23326	252.50	600	..	..	..	123
4-Pole, 230 Volts A.C.						
63421	\$25.00	30	..	..	..	19
23422	36.00	30-60	..	15	..	26
23423	74.50	100	..	25	..	73
23424	108.00	200	..	50	..	79
23425	243.50	400	..	..	..	128
23426	316.00	600	..	..	..	188
2-Pole, 575 Volts A.C.—600 Volts D.C.						
23262	\$21.50	30-60	..	..	..	31
23263	37.00	100	..	..	..	55
23264	53.00	200	..	..	..	80
23265	152.00	400	..	..	..	90
23266	214.00	600	..	..	..	110
3-Pole, 575 Volts A.C.						
23352	\$25.00	30-60	20	..	..	25
23353	45.00	100	30	..	..	40
23354	73.00	200	50	..	..	63
23355	191.50	400	..	..	..	105
23356	277.00	600	..	..	..	123
4-Pole, 575 Volts A.C.						
23452	\$39.50	30-60	25	..	..	26
23453	84.50	100	40	..	..	73
23454	118.00	200	50	..	..	79
23455	265.00	400	..	..	..	128
23456	344.00	600	..	..	..	188



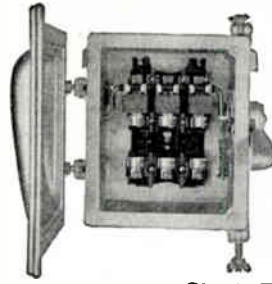
Type A Bull Dog Vacu-Break Safety Switches

**Master Line
Single Throw—Fusible—
Safety Interlocks**
Quick Make—Quick Break
Cable terminals are solder-
less Wire Grips.
Standard finish is black
enamel.

2-Pole, 230 Volts A.C.—250 Volts D.C.

No.	Each	Amp.	HP. RATING			Weight Pounds
			575 V. A.C.	230 V. A.C.	250 V. D.C.	
14221S	\$10.50	30	....	2	5	6
*14221	16.00	30	....	2	5	9
14222	17.00	60	....	5	10	13
14223	26.00	100	....	10	15	28
14224	45.00	200	....	15	30	36
14225	101.50	400	....	30	50	140
14226	146.50	600	....	....	....	208
14227	248.00	800	....	....	....	260
14228	344.00	1200	....	....	....	320
3-Pole, 230 Volts A.C.						
14321S	\$13.50	30	....	3	....	7
*14321	19.00	30	....	3	....	10
14322	22.50	60	....	7½	....	14
14323	34.00	100	....	15	....	29
14324	50.50	200	....	30	....	39
14325	112.50	400	....	50	....	156
14326	175.00	600	....	....	....	229
14327	338.00	800	....	....	....	295
14328	434.00	1200	....	....	....	381
3-Pole, Switched Neutral, 230 Volts A.C.—125-250 Volts (3 Blades, 2 Fuse Connections)						
15321S	\$13.50	30	....	3	....	7
*15321	19.00	30	....	3	....	10
15322	22.50	60	....	7½	....	14
15323	34.00	100	....	15	....	29
15324	50.50	200	....	30	....	39
15325	112.50	400	....	50	....	155
15326	175.00	600	....	....	....	229
15327	338.00	800	....	....	....	295
15328	434.00	1200	....	....	....	381
4-Pole, 230 Volts A.C.						
14421	\$20.50	30	....	3	....	17
14422	27.00	60	....	10	....	19
14423	45.00	100	....	20	....	34
14424	67.50	200	....	30	....	53
14425	146.50	400	....	50	....	177
14426	231.00	600	....	....	....	256
14427	434.00	800	....	....	....	350
14428	575.00	1200	....	....	....	465
2-Pole, 575 Volts A.C.						
14261	\$20.50	30	....	....	....	12
14262	21.50	60	....	....	....	15
14263	34.00	100	....	....	....	29
14264	53.00	200	....	....	....	37
14265	124.00	400	....	....	....	150
14266	197.00	600	....	....	....	218
14267	304.00	800	....	....	....	275
14268	428.00	1200	....	....	....	350
3-Pole, 575 Volts A.C.						
14351	\$25.00	30	....	7½	....	13
14352	26.00	60	....	20	....	16
14353	39.50	100	....	30	....	30
14354	65.50	200	....	50	....	48
14355	135.00	400	....	....	....	168
14356	225.00	600	....	....	....	240
14357	394.00	800	....	....	....	312
14358	518.00	1200	....	....	....	410
4-Pole, 575 Volts A.C.						
14451	\$30.50	30	....	7½	....	21
14452	32.50	60	....	20	....	23
14453	52.00	100	....	30	....	40
14454	79.00	200	....	50	....	55
14455	174.50	400	....	....	....	180
14456	270.00	600	....	....	....	270
14457	507.00	800	....	....	....	370
14458	647.50	1200	....	....	....	490

*60-ampere switch parts with 30-ampere fuse clips and spacings.



Type A Bull Dog Vacu-Break Dust-Tight Rain-Tight Switches

**Master Line
Safety Interlocks
Quick Make—Quick Break**
Furnished in cast aluminum
cabinets—metal to metal
machined surfaces.
Cable terminals are solderless
Wire Grips. Standard finish is
black enamel.

Single Throw—Fusible 2-Pole, 230 Volts A.C.—250 Volts D.C.

No.	Each	Amp.	HP. RATING			Weight Pounds
			575 V. A.C.	230 V. A.C.	250 V. D.C.	
14221C	\$38.00	30	....	2	5	14
14222C	50.00	60	....	5	10	21
14223C	130.00	100	....	10	15	32
14224C	200.00	200	....	15	30	48
3-Pole, 230 Volts A.C.						
14321C	\$43.00	30	....	3	....	15
14322C	57.00	60	....	7½	....	22
14323C	140.00	100	....	15	....	33
14324C	210.00	200	....	30	....	49
2-Pole, 575 Volts A.C.						
14261C	\$51.00	30	....	....	....	21
14262C	62.00	60	....	....	....	21
14263C	140.00	100	....	....	....	32
14264C	210.00	200	....	....	....	48
3-Pole, 575 Volts, A.C.						
14351C	\$56.00	30	....	7½	....	22
14352C	69.00	60	....	20	....	22
14353C	150.00	100	....	30	....	34
14354C	220.00	200	....	50	....	51
3-Pole, Switched Neutral, 230 Volts A.C. & 125-250 Volts						
15321C	\$43.00	30	....	....	....	15
15322C	57.00	60	....	....	....	22
15323C	140.00	100	....	....	....	33
15323C	210.00	200	....	....	....	49
Single Throw—Not Fusible						
2-Pole, 230 Volts A.C., 250 Volts D.C., 575 Volts A.C.						
17261C	\$37.00	30	....	3	7½	13
17262C	47.00	60	....	7½	15	13
17263C	125.00	100	....	15	20	31
17264C	190.00	200	....	20	40	47
3-Pole, 575 Volts A.C.—230 Volts A.C.						
17351C	\$42.00	30	....	10	5	14
17352C	54.00	60	....	25	10	14
17353C	135.00	100	....	40	20	33
17354C	200.00	200	....	50	40	49



Bull Dog Rocker Type Safety Switches

30-Ampere—Front Operated
An exceptionally depend-
able switch for use where the
more conventional toggle type
switches have been used be-
fore: oil burners, refrigeration
equipment, printing presses,
drill presses, other small
power driven equipment, etc.
Compact cabinet is 7½ in.
high, 4½ in. wide, and 3½
in. deep, including handle.
Weight, 4 pounds.

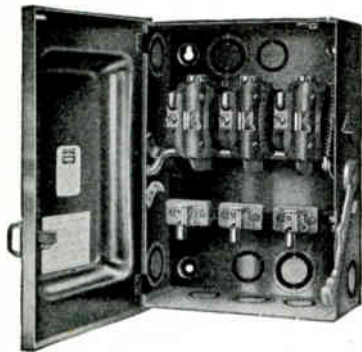
No. 83221		Fusible		Fuse Conn.
No.	Each	2-Pole (2 Blades, 2 Fuse Connections) Hp. and Volts		
83211	\$1-70	1 Hp.—115 A.C.	2 Hp.—125 D.C. & 125-250	2 Plug
*83211-1	2.50	1 Hp.—115 A.C.	2 Hp.—125 D.C. & 125-250	2 Plug
83221	2.20	2 Hp.—230 A.C. & 2 Hp.—250 D.C.		2 Cart.
*83221-1	3.00	2 Hp.—230 A.C. & 2 Hp.—250 D.C.		2 Cart.
Insulated Solid Neutral—With Separate Box Grounding Screw				
2-Pole (1 Blade, 1 Fuse Connection)				
84211	\$1.60	1 Hp.—115 A.C., 1 Ph. & 1½ Hp.—125 D.C.		1 Plug
*84211-1	2.40	1 Hp.—115 A.C., 1 Ph. & 1½ Hp.—125 D.C.		1 Plug
3-Pole (2 Blades, 2 Fuse Connections)				
84311	\$2.00	1 Hp.—115 A.C., 1 Ph. & 2 Hp.—125 D.C. & 125-250		2 Plug
*84311-1	2.80	1 Hp.—115 A.C., 1 Ph. & 2 Hp.—125 D.C. & 125-250		2 Plug
84321	3.40	2 Hp.—230 A.C., 3 Ph. & 125-250		2 Cart.

*Equipped with two-piece cover. Upper half over line terminals may be sealed, leaving fuses accessible behind hinged lower half.

Type A Colt Dualbreak Safety Switches

**Single Throw—Interlocking Cover
Quick Make—Quick Break**

Standard finish, aluminum; black enamel finish optional.



No. 27231

Non-Fusible

230 Volts A.C.—250 Volts D.C.

No.	Each	Amp.	HP. RATING			Poles	Weight Pounds Each
			230 V. A.C.	250 V. D.C.			
28223	\$9.00	30	3	5	2	5½	
28233	11.00	30	5	..	3	7½	
28243	20.50	30	5	..	4	9½	
28226	12.50	60	7½	10	2	12	
28221	25.00	100	15	15	2	16	
28222	31.50	200	25	30	2	31½	
28224	67.50	400	50	50	2	75	
28227	112.50	600	..	..	2	180

*60-ampere switch with 30-ampere fuse spacing and clips.

†Arranged for two fuses per pole.

Type A Switches up to and including 600-ampere capacity are equipped with solderless connectors. The 800-ampere and 1200-ampere switches are equipped with single solder lugs.

Fusible

230 Volts A.C.—250 Volts D.C.

No.	Each	Amp.	HP. RATING			Poles	Weight Pounds Each
			230 V. A.C.	250 V. D.C.			
27223	\$10.50	30	2	5	2	5½	
27233	13.50	30	3	..	3	7½	
27243	20.00	30	3	..	4	9½	
*27323	16.00	30	2	5	2	12	
*27333	19.00	30	3	..	3	14	
*27343	20.50	30	3	..	4	16	
27226	17.00	60	5	10	2	12	
27236	22.50	60	7½	..	3	14	
27246	27.00	60	10	..	4	16	
27221	26.00	100	10	15	2	16	
27231	34.00	100	15	..	3	20	
27241	45.00	100	20	..	4	24	
27222	45.00	200	15	30	2	31½	
27232	50.50	200	30	..	3	39¾	
27242	67.50	200	30	..	4	48	
27224	101.50	400	30	50	2	75	
27234	112.50	400	50	..	3	105	
27244	146.50	400	50	..	4	135	
27227	146.50	600	..	..	2	150
27237	175.00	600	..	..	3	200
27247	231.00	600	..	..	4	250
†27228	248.00	800	..	..	2	275
†27238	338.00	800	..	..	3	365
†27248	434.00	800	..	..	4	455
†27229	344.00	1200	..	..	2	475
†27239	434.00	1200	..	..	3	600
†27249	575.00	1200	..	..	4	725

Fusible

**3-Pole, Solid Neutral—Insulated,
125-250 or 230 Volts A.C.
(2 Blades, 2 Poles Fusible)**

No.	Each	Amp.	HP. RATING			Poles	Weight Pounds Each
			230 V. A.C.	250 V. D.C.			
25733	\$12.00	30	3	5	5	5¾	
25736	19.00	60	7½	10	12	1¼	
25731	30.50	100	15	15	16	¼	
25732	49.50	200	30	30	37		
25734	112.50	400	50	50	105		
25737	163.50	600	..	..	190	
†25738	270.50	800	..	..	355	
†25739	383.00	1200	..	..	590	

**4-Pole, Solid Neutral—Insulated,
230 Volts A.C. (3 Blades, 3 Poles Fusible)**

No.	Each	Amp.	HP. RATING			Poles	Weight Pounds Each
			230 V. A.C.	250 V. D.C.			
25743	\$20.50	30	3	..	7¾		
25746	26.00	60	7½	..	14¼		
25741	40.50	100	15	..	20¼		
25742	62.00	200	30	..	45		
25744	129.50	400	50	..	135		
25747	200.50	600	..	..	240	
†25748	383.00	800	..	..	445	
†25749	476.00	1200	..	..	715	

**5-Pole, Solid Neutral—Insulated,
115-230 V. A.C. (4 Blades, 4 Poles Fusible)**

No.	Each	Amp.	HP. RATING			Poles	Weight Pounds Each
			230 V. A.C.	250 V. D.C.			
25753	\$23.50	30	3	..	9¾		
25756	30.50	60	10	..	16¼		
25751	51.00	100	20	..	24¼		
25752	79.00	200	30	..	48¼		
25754	168.00	400	50	..	140		
25757	276.00	600	..	..	250	
†25758	440.00	800	..	..	460	
†25759	608.00	1200	..	..	730	

Multiple solderless connectors are optional.

Switching Neutral. Fusible switches can be furnished with unfused switching neutral. Add SWN to regular numbers. Prices are the same as for switches with all poles fusible and switching.

Type A Colt Quadbreak Safety Switches

**Single Throw—Interlocking Cover
Quick Make—Quick Break**

Standard finish, aluminum; black enamel finish optional.

Fusible

No.	Each	Amp.	HP. RATING			Poles	Weight Pounds Each
			575 V. A.C.	600 V. D.C.			
75923	\$20.50	30	..	7½	2	10¼	
75933	25.00	30	..	7½	3	13	
75943	30.50	30	..	7½	4	15¾	
*75823	20.50	30	..	7½	2	14¾	
*75833	25.00	30	..	7½	3	18	
*75843	30.50	30	..	7½	4	21¼	
75926	21.50	60	..	15	2	14¾	
75936	26.00	60	20	..	3	18	
75946	32.50	60	20	..	4	21¼	
75921	34.00	100	..	25	2	20¾	
75931	39.50	100	30	..	3	26½	
75941	52.00	100	30	..	4	32¼	
75922	53.00	200	..	50	2	43½	
75932	65.50	200	50	..	3	55	
75942	79.00	200	50	..	4	66½	
75924	124.00	400	..	..	2	90
75934	135.00	400	..	..	3	125
75944	174.50	400	..	..	4	160
75927	197.00	600	..	..	2	180
75937	225.50	600	..	..	3	230
75947	270.00	600	..	..	4	290
†75928	304.00	800	..	..	2	295
†75938	394.00	800	..	..	3	395
†75948	507.00	800	..	..	4	495
†75929	428.00	1200	..	..	2	495
†75939	518.00	1200	..	..	3	630
†75949	647.50	1200	..	..	4	765

*60-ampere switch with 30-ampere fuse spacing and clips.

†Arranged for two fuses per pole.

Type A Switches up to and including 600-ampere capacity are equipped with solderless connectors. The 800-ampere and 1200-ampere switches are equipped with single solder lugs.

Non-Fusible

No.	Each	Amp.	HP. RATING			Poles	Weight Pounds Each	
			230 V. A.C.	575 V. A.C.	600 V. D.C.			
70923	\$12.50	30	3	..	5	7½	2	10¼
70933	14.50	30	5	..	..	..	3	13
70943	20.50	30	5	..	..	..	4	15¾
70926	17.00	60	7½	..	10	15	2	14¾
70936	20.50	60	10	25	..	..	3	18
70946	27.00	60	15	25	..	..	4	21¼
70921	26.00	100	15	..	15	25	2	20¾
70931	30.50	100	20	40	..	..	3	26½
70941	39.50	100	25	40	..	..	4	32¼
70922	35.00	200	25	..	30	50	2	43½
70932	43.00	200	40	50	..	..	3	55
70942	59.00	200	50	50	..	..	4	66½
70924	101.50	400	50	..	50	..	2	90
70934	112.50	400	50	..	..	..	3	125
70944	146.50	400	50	..	..	..	4	160
70927	146.50	600	..	..	..	..	2	180
70937	180.50	600	..	..	..	..	3	230
70947	220.00	600	..	..	..	..	4	290
70928	220.00	800	..	..	..	..	2	295
70938	293.00	800	..	..	..	..	3	395
70948	378.00	800	..	..	..	..	4	495
70929	299.00	1200	..	..	..	..	2	495
70939	394.00	1200	..	..	..	..	3	630
70949	518.00	1200	..	..	..	..	4	765

Multiple solderless connectors are optional.

Switching Neutral. Fusible switches can be furnished with unfused switching neutral. Add SWN to regular numbers. Prices are the same as for switches with all poles fusible and switching.

Type A Colt Dualbreak Cast Iron Weatherproof Switches

Interlocking Cover
Quick Make—Quick Break
Standard finish, black enamel.



No. 99633

Fusible 230 Volts A.C.—250 Volts D.C.

No.	Each	Amp.	HP. RATING			Poles	Weight Pounds Each
			230 V. A.C.	250 V. D.C.	250 V. D.C.		
99223	\$38.00	30	2	5	2	18 1/4	
99233	43.00	30	3	..	3	18 3/4	
99243	56.00	30	3	..	4	37	
*99323	50.00	30	2	5	2	37	
*99333	57.00	30	3	..	3	38	
*99343	74.00	30	3	..	4	49	
99226	50.00	60	5	10	2	37	
99236	57.00	60	7 1/2	..	3	38	
99246	74.00	60	10	..	4	49	
99221	130.00	100	10	15	2	52	
99231	140.00	100	15	..	3	54	
99241	170.00	100	20	..	4	100	
99222	200.00	200	15	30	2	108	
99232	210.00	200	30	..	3	114	
99242	260.00	200	30	..	4	138	

Fusible 575 Volts A.C.—600 Volts D.C.

No.	Each	Amp.	HP. RATING			Poles	Weight Pounds Each
			575 V. A.C.	600 V. D.C.	600 V. D.C.		
99623	\$51.00	30	..	7 1/2	2	36 1/4	
99633	56.00	30	7 1/2	..	3	37	
99643	69.00	30	7 1/2	..	4	47 1/4	
*99823	62.00	30	..	7 1/2	2	47 1/2	
*99833	69.00	30	7 1/2	..	3	48 3/4	
*99843	85.00	30	7 1/2	..	4	50	
99626	62.00	60	..	15	2	47 1/2	
99636	69.00	60	20	..	3	48 3/4	
99646	85.00	60	20	..	4	50	
99621	140.00	100	..	25	2	96	
99631	150.00	100	30	..	3	98	
99641	180.00	100	30	..	4	100	
99622	210.00	200	..	50	2	108	
99632	220.00	200	50	..	3	114	
99642	270.00	200	50	..	4	138	

Non-Fusible

230-575 Volts A.C.—250-600 Volts D.C.

No.	Each	Amp.	HP. RATING				Poles	Weight Pounds Each
			230 V. A.C.	575 V. A.C.	250 V. D.C.	600 V. D.C.		
97623	\$37.00	30	3	..	5	7 1/2	2	36
97633	42.00	30	5	10	..	..	3	36 3/4
97643	55.00	30	5	10	..	..	4	47
97626	47.00	60	7 1/2	..	10	15	2	37 1/4
97636	54.00	60	10	25	..	..	3	38 1/2
97646	71.00	60	15	25	..	..	4	49 3/4
97621	125.00	100	15	..	15	25	2	51 1/2
97631	135.00	100	20	40	..	..	3	53
97641	165.00	100	25	40	..	..	4	99
97622	190.00	200	25	..	30	50	2	107
97632	200.00	200	40	50	..	..	3	112 1/2
97642	250.00	200	50	50	..	..	4	136

*60-ampere switch with 30-ampere fuse spacing and clips.

These switches are equipped with solderless lugs.

Solid Neutral. Fusible switches can be furnished with solid non-switching neutral. Add SN to regular numbers. Prices are the same as for switches with all poles fusible.

Switching Neutral. Fusible switches can be furnished with unfused switching neutral. Add SWN to regular numbers. Prices are the same as for switches with all poles fusible and switching.

Type C Colt Nublade Safety Switches

Single Throw

Quick Make—Quick Break

Standard finish, aluminum; black enamel finish optional.

Fusible

230 Volts A.C.—250 Volts D.C.

No.	Each	Amp.	HP. RATING			Poles	Weight Pounds Each
			230 V. A.C.	250 V. D.C.	250 V. D.C.		
8223	\$4.50	30	2	5	2	5	
8233	7.00	30	3	..	3	6	
8243	14.50	30	3	..	4	9 1/2	
8226	11.50	60	5	10	2	12	
8236	12.50	60	7 1/2	..	3	16	
8246	17.00	60	10	..	4	20	
8221	20.00	100	10	15	2	19 1/2	
8231	25.00	100	15	..	3	25 1/2	
8241	37.50	100	20	..	4	30	
8222	27.50	200	15	30	2	37	
8232	36.50	200	30	..	3	49	
8242	60.00	200	30	..	4	63	
8224	80.00	400	30	50	2	88	
8234	92.50	400	50	..	3	133	
8244	131.50	400	50	..	4	170	
8227	124.00	600	..	..	2	127
8237	144.00	600	..	..	3	180
8247	207.00	600	..	..	4	247

Non-Fusible

230 Volts A.C.—250 Volts D.C.

No.	Each	Amp.	HP. RATING			Poles	Weight Pounds Each
			230 V. A.C.	250 V. D.C.	250 V. D.C.		
8723	\$4.50	30	3	5	2	5	
8733	7.00	30	5	..	3	6 1/2	
8743	12.50	30	5	..	4	9	
8726	10.00	60	7 1/2	10	2	12	
8736	11.50	60	10	..	3	15 1/2	
8746	17.00	60	15	..	4	18	
8721	20.00	100	15	15	2	17 1/2	
8731	21.50	100	20	..	3	23	
8741	34.00	100	25	..	4	26	
8722	26.50	200	25	30	2	35	
8732	31.50	200	40	..	3	45	
8742	52.50	200	50	..	4	55	
8724	56.50	400	50	50	2	65	
8734	71.50	400	50	..	3	100	
8744	94.00	400	50	..	4	135	
8727	95.00	600	..	..	2	85
8737	113.00	600	..	..	3	120
8747	188.00	600	..	..	4	155

Fusible—Solid Neutral

4-Pole, 230 Volts A.C. (3 Blades, 3 Poles Fusible)

No.	Each	Amp.	HP. RATING		Weight Pounds Each
			230 V. A.C.	250 V. D.C.	
8143	\$10.00	30	3	..	7
8146	14.50	60	7 1/2	..	17
8141	29.00	100	15	..	23 1/2
8142	44.00	200	30	..	52
8144	112.50	400	50	..	158
8147	197.50	600	..	..	203

5-Pole, 115-230 Volts A.C. (4 Blades, 4 Poles Fusible)

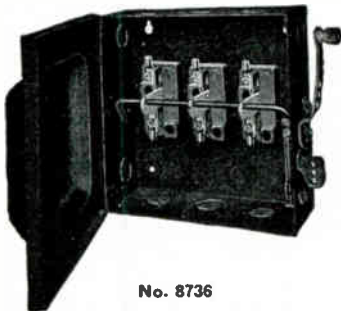
No.	Each	Amp.	HP. RATING		Weight Pounds Each
			230 V. A.C.	250 V. D.C.	
8153	\$16.00	30	3	..	9 1/2
8156	25.00	60	10	..	21
8151	50.00	100	20	..	31
8152	70.00	200	30	..	61 1/2
8154	163.50	400	50	..	175
8157	253.50	600	..	..	255

3-Pole, 125-250 or 230 Volts A.C. (2 Blades, 2 Poles Fusible)

No.	Each	Amp.	HP. RATING		Weight Pounds Each
			230 V. A.C.	250 V. D.C.	
8133	\$6.00	30	3	5	5 1/2
8136	11.50	60	7 1/2	10	13
8131	20.00	100	15	15	19 1/2
8132	31.50	200	30	30	39
8134	87.50	400	50	50	121
8137	138.00	600	..	..	165

These switches are equipped with solderless lugs.

Switching Neutral. Fusible switches can be furnished with unfused switching neutral. Add SWN to regular numbers. Prices are the same as for switches with all poles fusible and switching.



No. 8736

Coit Service Equipment

Wiring Sequence: Meter—Switch—Fuse
Front Operated Toggle Switch

125-250 Volts, Solid Neutral—For Entrance and Load Side Service

Fuseless Main Surface Mounting



No. 32N3

Baked aluminum finish.

No.	Each	Amp.	Poles	Branch Fuses, 15 Amp.	Weight Pounds Each
32N2	\$5.00	30	2	2	8½
32N3	5.50	30	2	3	8½
32N4	6.00	30	2	4	8½
33N2	5.50	30	3	2	8½
33N3	6.00	30	3	3	8½
33N4	6.50	30	3	4	8½
33N5	7.00	30	3	5	9
33N6	7.50	30	3	6	9
*34N3	6.50	30	2	3	11
*34N4	7.00	30	2	4	11
*35N3	7.00	30	3	3	11
*35N4	7.50	30	3	4	11
*35N5	8.00	30	3	5	11½
*35N6	8.50	30	3	6	11½
*63N6	10.25	60	3	6	13

Flush Mounting

Baked aluminum with gray enamel flush plates.

No.	Each	Amp.	Poles	Branch Fuses, 15 Amp.	Weight Pounds Each
32N2-F	\$5.50	30	2	2	8½
32N3-F	6.00	30	2	3	9
32N4-F	6.50	30	2	4	9
33N2-F	6.00	30	3	2	8½
33N3-F	6.50	30	3	3	9
33N4-F	7.00	30	3	4	9
33N5-F	7.50	30	3	5	9
33N6-F	8.00	30	3	6	9½
*34N3-F	7.00	30	2	3	11
*34N4-F	7.50	30	2	4	11
*35N3-F	7.50	30	3	3	11
*35N4-F	8.00	30	3	4	11
*35N5-F	8.50	30	3	5	11½
*35N6-F	9.00	30	3	6	11½
63N6-F	11.25	60	3	6	13¼

*Have transformer bracket or Despard Type Switch Supports and Knockouts.

Entrance Switches—Accessible Main Fuses

Non-Meter Test

Single Phase and Direct Current
125-250 or 230 Volts A.C.
2 Blades—2 Legs Fusible
Solid Neutral, Insulated

No.	Each	Amp.	Wt. Lb. Each
†18343	\$6.50	30	8¾
†8323	7.50	30	8¾
8333	8.50	30	9
7636	13.50	60	11
7631	22.00	100	16
76232	69.00	200	39¾
76234	150.00	400	105
76237	238.00	600	200
76238	332.00	800	365
76239	488.50	1200	590

No.	Each	Amp.	Wt. Lb. Each
77033	\$18.00	30	11½
77036	25.00	60	20
77031	40.00	100	36
75232	75.00	200	40
75234	156.50	400	110
75237	250.00	600	210
75238	390.00	800	375
75239	488.50	1200	600

†2 pole, 125 volts, 1 plug fuse, solid neutral.

†Plug Fuses. §Quick-make and quick-break.

Three Phase—Four Wire
230 Volts—3 Blades—3 Legs Fusible
Solid Neutral, Insulated

No.	Each	Amp.	Wt. Lb. Each
77143	\$22.50	30	11½
77146	26.00	60	20
77141	47.50	100	36
†76242	96.50	200	48
§76244	169.00	400	145
§76247	257.00	600	250
§76248	425.00	800	455
§76249	595.00	1200	715

Two Phase—Five Wire
115-230 Volts—4 Blades—4 Legs Fusible
Solid Neutral, Insulated

No.	Each	Amp.	Wt. Lb. Each
§76253	\$32.50	30	12
§76256	40.00	60	20
§76251	62.50	100	29
§76252	118.00	200	55
§76254	220.00	400	150
§76257	311.00	600	270
§76258	576.00	800	460
§76259	738.00	1200	730

Fusible Main Surface Mounting

Baked aluminum finish.

No.	Each	Amp.	Poles	Main Fuses, 15 Amp.	Branch Fuses, 15 Amp.	Weight Pounds Each
28L2	\$5.50	30	2	1	2	8
28L3	6.00	30	2	1	3	8½
28L4	6.50	30	2	1	4	8½
29L2	6.00	30	3	2	2	8
29L3	6.50	30	3	2	3	8½
29L4	7.00	30	3	2	4	9
29L5	8.00	30	3	2	5	10
29L6	10.10	30	3	2	6	10
29L8	14.50	30	3	2	8	11
*30L2	6.50	30	2	1	2	10
*30L3	7.00	30	2	1	3	10½
*30L4	7.50	30	2	1	4	10½
*31L2	7.00	30	3	2	2	11
*31L3	7.50	30	3	2	3	11
*31L4	8.00	30	3	2	4	11½
*31L5	9.00	30	3	2	5	13
*31L6	11.10	30	3	2	6	13
*31L8	15.50	30	3	2	8	14½

Flush Mounting

Baked aluminum with gray enamel flush plates.

No.	Each	Amp.	Poles	Main Fuses, 15 Amp.	Branch Fuses, 15 Amp.	Weight Pounds Each
28L2-F	\$6.00	30	2	1	2	8½
28L3-F	6.50	30	2	1	3	9
28L4-F	7.00	30	2	1	4	9½
29L2-F	6.50	30	3	2	2	8½
29L3-F	7.00	30	3	2	3	9
29L4-F	7.50	30	3	2	4	9
29L5-F	8.50	30	3	2	5	10½
29L6-F	10.60	30	3	2	6	10½
29L8-F	15.00	30	3	2	8	12
*30L2-F	7.00	30	2	1	2	11
*30L3-F	7.50	30	2	1	3	11
*30L4-F	8.00	30	2	1	4	11½
*31L2-F	7.50	30	3	2	2	11
*31L3-F	8.00	30	3	2	3	11
*31L4-F	8.50	30	3	2	4	11½
*31L5-F	9.50	30	3	2	5	13
*31L6-F	11.60	30	3	2	6	13
*31L8-F	16.00	30	3	2	8	14½
*61L6-F	13.50	60	3	2	6	20
*61L8-F	20.50	60	3	2	8	23½
*61L10-F	24.50	60	3	2	10	30
*101RL8-F	41.00	100	3	2	8-30 Amp. 60 2-60 Amp.	60½
*101RL10-F	47.50	100	3	2	10-30 Amp. 60½ 2-60 Amp.	60½
*101RL12-F	54.00	100	3	2	12-30 Amp. 61 2-60 Amp.	61

Fuse Puller Switches



No. 7RL4

3-Pole—Solid Neutral—100 Amperes
Finish: surface, baked aluminum; flush covers, gray enamel.

No.	Each	Cabinet Surface	Weight Pounds Each
10	\$22.00	Surface	.....
11	26.00	Flush	.....

3-Pole—Solid Neutral—125-250 Volts
Surface Mounting
Baked aluminum finish.

No.	Each	Poles	Branch Fuses, 60 Amp.	BRANCH Fuses, 60 Amp.	Ship. Weight Pounds Each
6RL4	\$8.30	3	..	4 2	15
7	6.20	3	2	..	8½
7L2	8.20	3	2	2	11
7L4	8.50	3	2	4	13½
7L6	12.80	3	2	6	16
7L8	17.50	3	2	8	16
7R	9.50	3	2	..	15½
7RL2	9.50	3	2	2	15½
††7RL4	8.55	3	2	4	15
††7RL4C	8.55	3	2	4	15
††7RL4E	8.55	3	2	4	16½
††7RL6	14.50	3	2	6	17
††7RL6C	14.50	3	2	6	17
††7RL8	19.00	3	2	8	18½
††7RL8C	19.00	3	2	8	18½
16RL4	9.75	3	..	4 2	17½

Flush Mounting

Baked aluminum with gray enamel flush plates.

No.	Each	Poles	Branch Fuses, 60 Amp.	BRANCH Fuses, 60 Amp.	Ship. Weight Pounds Each
8RL4	\$9.30	3	..	4 2	17½
9	7.20	3	2	..	9
9L2	9.20	3	2	2	13
9L4	9.50	3	2	4	15½
9L6	12.80	3	2	6	18
9L8	18.50	3	2	8	18
9R	10.50	3	2	..	16
9RL2	10.50	3	2	2	16
††9RL4	9.55	3	2	4	17½
††9RL4C	9.55	3	2	4	17½
††9RL4E	9.55	3	2	4	19
††9RL6	14.50	3	2	6	22
††9RL6C	14.50	3	2	6	22
††9RL8	21.00	3	2	8	23½
††9RL8C	21.00	3	2	8	23½
18RL4	10.75	3	..	4 2	20
19RL4C	11.00	3	2	4	20

†*Has 100-amp. solderless connectors.
††Available with fuse clips omitted from main fuse puller at .25 list reduction. Specify No. 6RL4 (surface) or No. 8RL4 (flush).
††60-Ampere Range Circuit is independent of main fuses and lighting circuits. For devices with opening in upper end-wall to accommodate Niagara-Hudson Co.'s Service Channel, add suffix "-5" to regular numbers.
§Large cabinet.

Type D Colt Galvannealed Steel Weatherproof Switches

**Aluminum Finish
Plug Fuse Switches, Not Quick Break
Fusible**

No.	Each	Amp.	Volts	Poles	Fuses	Switch Blades	Weight Pounds Each
8383W	\$4.80	30	125-250	2	2 Plug	2	4
8093W	6.50	30	125	3	3 Plug	3	5
8683W	5.40	30	250	2	2-N.E.C.	2	5
8263W	9.00	30	230	3	3-N.E.C.	3	6
8236-2W	12.40	60	230	3	3-N.E.C.	3	16
8231-2W	24.00	100	230	3	3-N.E.C.	3	25½
8232-2W	41.50	200	230	3	3-N.E.C.	3	49

Fusible—Solid Neutral

*8283W	\$4.50	30	125	2	1 Plug	1	4
*8393W	5.10	30	125-250	3	2 Plug	2	4½
††8136-24W	10.90	60	125-250 or 230 A.C.	3	2-N.E.C.	2	9
††8131-24W	22.00	100	125-250 or 230 A.C.	3	2-N.E.C.	2	14½
‖8132-2W	37.50	200	125-250 or 230 A.C.	3	2-N.E.C.	2	39
§†7-W	6.80	60	125-250	3	2-N.E.C.	2	9½
¶7R-W	12.50	60	125-250	3	4-N.E.C. 2 Main 2 Branch	2	15¾
¶10-W	29.50	100	125-250	3	2-N.E.C.	2	19

*Insulated groundable solid neutral.
†Dualbreak mechanism.
††Two neutrals, one grounded and one insulated.
§No extra charge for 1 or ¼-inch hub or nipple on this device.
¶Fuse puller type.
‖Insulated neutral.

Hubs

Weatherproof Switches can be furnished with threaded conduit hubs at the following addition to prices:
Size.....inches ¾ 1 1¼ 1½ 2
Each.....\$.85 .85 1.15 1.60 1.90
Specify size, number and location when ordering.

**Type D Colt Pony Switches
Front Operating Toggle Type
For Plug or Cartridge Fuses**

Standard finish, baked aluminum.



No. 71

Fusible

No.	Each	Amp.	Volts	Poles	Switch Blades	Fuses	Weight Pounds Each
72	\$1.70	30	125-250	2	2	2 Plug	2¾
*75	2.50	30	125-250	2	2	2 Plug	2¾
82	2.20	30	250	2	2	2-N.E.C.	2¾
85	6.20	60	250	2	2	2-N.E.C.	6

Fusible—Solid Neutral, Insulated

71	\$1.60	30	125	2	1	1 Plug	2
*74	2.40	30	125	2	1	1 Plug	2
†73	2.00	30	125-250	3	2	2 Plug	2¾
*†76	2.80	30	125-250	3	2	2 Plug	2¾
81	2.20	30	125	2	1	1-N.E.C.	2½
83	3.40	30	125-250	3	2	2-N.E.C.	2¾
84	6.20	60	125	2	1	1-N.E.C.	5¾
†86	6.20	60	125-250	3	2	2-N.E.C.	6
			or 230 A.C.				
††90	6.20	60	125-250	3	2	2-N.E.C.	6
			or 230 A.C.				

Non-Fusible

70	\$1.60	30	250	2	2	.....	2¾
80	5.50	60	250	2	2	.....	5¾

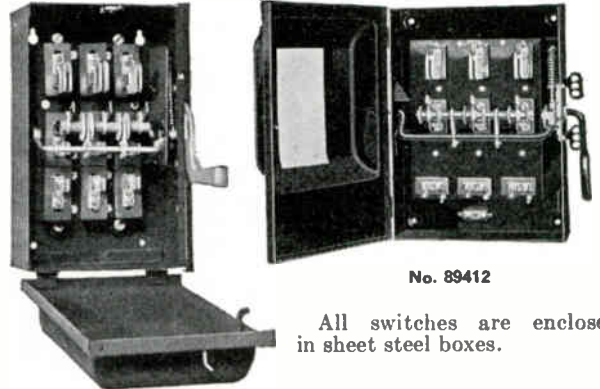
*With fibre dead front plate.
†Insulated groundable solid neutral.
††With extra contacts ahead of fuses for hot water heater.

Type A Square D Heavy Duty Industrial Safety Switches

Single Throw

**30 to 600-Ampere Switches:
Quick Make—Quick Break—Keyed Interlocked Cover Control**
**800 to 2400-Ampere Switches:
Quick Break Only—Cover Not Interlocked**

Schedule A



No. 88351

2-Pole, 230 Volts A.C.—250 Volts D.C.

Fusible

Not Fusible

No.	Each	Amps.	HP. RATING A.C.	D.C.	No.	Each	Amps.	HP. RATING A.C.	D.C.
†88251	\$10.50	30	2	5	†84251	\$9.00	30	3	5
*86251	16.00	30	2	5	84252	12.50	60	7½	10
88252	17.00	60	5	10	84253	25.00	100	15	15
88253	26.00	100	10	15	84254	31.50	200	25	30
88254	45.00	200	15	30	84255	67.50	400	50	50
88255	101.50	400	30	50	84256	112.50	600	..	..
88256	146.50	600	..	..	§84257	220.00	800	..	..
§88257	248.00	800	..	..	§84258	299.00	1200	..	..
§88258	344.00	1200	..	..	¶84259	518.00	1800	..	..
¶88259	632.50	1800	..	..	**84250	654.00	2400	..	..
**88250	766.00	2400	..	..			
3-Wire, S/N (2 Blades, 2 Fuses) 230 Volts A.C.—250 Volts D.C.									
†89311	\$12.00	30	3	..					
89312	19.00	60	7½	..					
89313	30.50	100	15	..					
89314	49.50	200	30	..					
89315	112.50	400	50	..					
89316	163.50	600	..	..			
§89317	270.50	800	..	..			
§89318	383.00	1200	..	..			

3-Pole, 230 Volts A.C.—250 Volts D.C.

†88351	\$13.50	30	3	..	†84351	\$11.00	30	5	..
*86351	19.00	30	3	..	84342	20.50	60	10	..
88352	22.50	60	7½	..	84343	30.50	100	20	..
88353	34.00	100	15	..	84344	43.00	200	40	..
88354	50.50	200	30	..	84345	112.50	400	50	..
88355	112.50	400	50	..	84346	180.50	600	..	..
88356	175.00	600	..	..	§84347	293.00	800	..	..
§88357	338.00	800	..	..	§84348	394.00	1200	..	..
¶88358	434.00	1200	..	..	¶84349	694.00	1800	..	..
¶88359	890.00	1800	..	..	§84340	952.00	2400	..	..
§88350	1055.00	2400	..	..			

THREE-WIRE SWITCHING NEUTRAL. These fusible switches can be furnished with unfused switching neutral by omitting the neutral fuse terminals and adding lugs for load connection to blade hinge post on neutral pole. Add SWN to regular 3-pole numbers. Prices are the same as for regular switches.

4-Wire, S/N (3 Blades, 3 Fuses) 230 Volts A.C.—250 Volts D.C.

†89411	\$20.50	30	3	..					
89412	26.00	60	7½	..					
89413	40.50	100	15	..					
89414	62.00	200	30	..					
89415	129.50	400	50	..					
89416	200.50	600	..	..			
§89417	383.00	800	..	..			
§89418	476.00	1200	..	..			

*60-ampere switch with 30-ampere fuse spacing and clips.
†Front operated and has elevated removable base. Interlock is not keyed.
§Double lugs. Standard single lugs furnished on order.
¶Triple lugs. **Quadruple lugs.

Type A Square D Heavy Duty Industrial Safety Switches

Single Throw

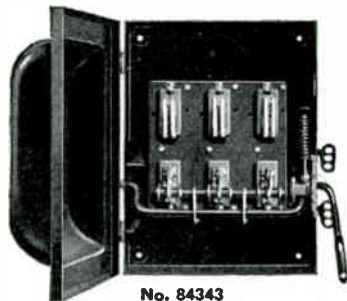
30 to 600-Ampere Switches:

Quick Make—Quick Break—Keyed Interlocked Cover Control

800 to 2400-Ampere Switches:

Quick Break Only—Cover Not Interlocked

Schedule A



No. 84343

All switches are enclosed in sheet steel boxes.

4-Pole, 230 Volts A.C.—250 Volts D.C.

Fusible

Not Fusible

No.	Each	HP. RATING Amps. A.C. D.C.	No.	Each	HP. RATING Amps. A.C. D.C.
*86451	\$20.50	30 3	81451	\$20.50	30 5
88452	27.00	60 10	84442	27.00	30-60 15
88453	45.00	100 20	84443	39.50	100 25
88454	67.50	200 30	84444	59.00	200 50
88455	146.50	400 50	84445	146.50	400
88456	231.00	600	84446	220.00	600
§88457	434.00	800	§84447	378.00	800
§88458	575.00	1200	§84448	518.00	1200
*88459	1150.00	1800	*84449	1010.00	1800
**88450	1442.00	2400	**84440	1251.00	2400
5-Wire, S/N (4 Blades, 4 Fuses) 230 Volts A.C.—250 Volts D.C.					
*87511	\$23.50	30			
89512	30.50	60			
89513	51.00	100			
89514	79.00	200			
89515	168.00	400			
89516	276.00	600			
§89517	440.00	800			
§89518	608.00	1200			
2-Pole, 575 Volts A.C.—600 Volts D.C.—With Arc Suppressors					
†88261	\$20.50	30 7½	†84261	\$12.50	30 7½
88262	21.50	60 15	84262	17.00	60 15
88263	34.00	100 25	84263	26.00	100 25
88264	53.00	200 50	84264	35.00	200 50
88265	124.00	400	84265	101.50	400
88266	197.00	600	84266	146.50	600
†88247	304.00	800	†84247	220.00	800
†88248	428.00	1200	†84248	299.00	1200
			†84249	518.00	1800
			**84240	654.00	2400
3-Pole, 575 Volts A.C.—With Arc Suppressors					
†88341	\$25.00	30 7½	†84341	\$14.50	30 10
*86341	25.00	30 7½	84342	20.50	60 25
88342	26.00	60 20	84343	30.50	100 40
88343	39.50	100 30	84344	43.00	200 50
88344	65.50	200 50	84345	112.50	400
88345	135.00	400	84346	180.50	600
88346	225.00	600	§84347	293.00	800
§88347	394.00	800	§84348	394.00	1200
§88348	518.00	1200	§84349	694.00	1800
			**84340	952.00	2400
4-Pole, 575 Volts A.C.—With Arc Suppressors					
†86441	\$30.50	30 7½	84442	\$27.00	30-60 25
88442	32.50	60 20	84443	39.50	100 40
88443	52.00	100 30	84444	59.00	200 50
88444	79.00	200 50	84445	146.50	400
88445	174.50	400	84446	220.00	600
88446	270.00	600	§84447	378.00	800
§88447	507.00	800	§84448	518.00	1200
§88448	647.50	1200	§84449	1010.00	1800
			**84440	1251.00	2400

*60-ampere switch with 30-ampere fuse spacing and clips.
 †575 volts a.c.—250 volts d.c. only.
 ‡Front operated and has elevated removable base. Interlock is not keyed.
 §Double lugs. Standard single lugs furnished on order.
 ¶Triple lugs.
 **Quadruple lugs.

Type A Square D Heavy Duty Industrial Safety Switches



56352

50,000 Compact Line
 Quick Make—Quick Break
 Interlocked Cover, Not Keyed
 30 to 60-Ampere Switches:
 Cover Bottom Hinged
 100 to 200-Ampere Switches:
 Cover Side Hinged
 Schedule A

Weatherproof—Dust-Tight and Explosion-Proof Boxes are equipped with two threaded conduit hubs of proper size. Two additional holes will be drilled and tapped where pads are provided and two pipe plugs furnished at no extra cost.

Amps.	HP. RATING		Sheet Metal Enclosures, Front Operated		*Weatherproof—Dust-Tight Enclosures	
	A.C.	D.C.	No.	Each	No.	Each
30	2	5	56251	\$10.50	55251	\$38.00
60	5	10	56252	17.00	55252	50.00
100	10	15	56253	26.00	55253	130.00
200	15	30	56254	45.00	55254	200.00
3-Pole, 230 Volts A.C.—250 Volts D.C.						
30	3	5	56351	\$13.50	55351	\$43.00
60	7½	10	56352	22.50	55352	57.00
100	15	15	56353	34.00	55353	140.00
200	30	30	56354	50.50	55354	210.00
3-Wire S/N (2 Blades, 2 Fuses) 230 Volts A.C.—250 Volts D.C.						
30	3	5	59311	\$12.00	50311	\$43.00
60	7½	10	59312	19.00	50312	57.00
100	15	15	59313	30.50	50313	140.00
200	30	30	59314	49.50	50314	210.00
2-Pole, 575 Volts A.C.—600 Volts D.C.						
30	7½	10	56261	\$20.50	55261	\$51.00
60	15	15	56262	21.50	55262	62.00
100	25	25	56263	34.00	55263	140.00
200	50	50	56264	53.00	55264	210.00
3-Pole, 575 Volts, A.C.						
30	7½	10	56341	\$25.00	55341	\$56.00
60	20	20	56342	26.00	55342	69.00
100	30	30	56343	39.50	55343	150.00
200	50	50	56344	65.50	55344	220.00

THREE-WIRE SWITCHING NEUTRAL. These fusible switches can be furnished with unfused switching neutral by omitting the neutral fuse terminals and adding lugs for load connection to blade hinge post on neutral pole. Add SWN to regular 3-pole numbers. Prices are the same as for regular switches.

Single Throw—Not Fusible						
2-Pole, 230 Volts A.C.—250 Volts D.C.						
Amps.	HP. RATING	A.C. D.C.	No.	Each	No.	Each
30	3	5	51251	\$9.00	53251	\$37.00
60	7½	10	51252	12.50		
100	15	15	51253	25.00		
200	25	30	51254	31.50		

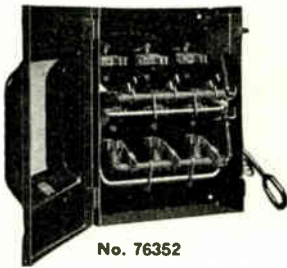
3-Pole, 230 Volts A.C.—250 Volts D.C.						
Amps.	HP. RATING	A.C. D.C.	No.	Each	No.	Each
30	5	5	51351	\$11.00	53351	\$42.00

2-Pole, 600 Volts D.C.									
Amps.	HP. RATING	A.C. D.C.	Sheet Metal Enclosures, Front Operated		*Weatherproof—Dust-Tight Enclosures		Explosion-Proof Enclosures		
			No.	Each	No.	Each	No.	Each	
30	7½	10	51261	\$12.50	53261	53261-D	\$37.00	54261	\$67.50
60	15	15	51262	17.00	53262	53262-D	47.00	54262	80.00
100	25	25	51263	26.00	53263	53263-D	125.00	54263	203.00
200	50	50	51264	35.00	53264	53264-D	190.00	54264	244.00

3-Pole, 575 or 230 Volts A.C.									
Amps.	HP. RATING	V. V.	Sheet Metal Enclosures, Front Operated		*Weatherproof—Dust-Tight Enclosures		Explosion-Proof Enclosures		
			No.	Each	No.	Each	No.	Each	
30	10	10	51341	\$14.50	53341	53341-D	\$42.00	54341	\$72.50
60	10	25	51342	20.50	53342	53342-D	54.00	54342	91.50
100	20	40	51343	30.50	53343	53343-D	135.00	54343	209.00
200	40	50	51344	43.00	53344	53344-D	200.00	54344	258.00

*Cast aluminum enclosures standard, but cadmium plated cast iron supplied on order at no extra cost.
 †Approved for Class II, Group G, hazardous locations.
 ‡Approved by Underwriters' Laboratories, Inc. for Class I, Group D, hazardous locations and all lower classifications.
 Covers not interlocked.

Square D Motor Starters
Single Throw—Fusible—Straight Connected
 Quick Make—Quick Break
 Schedule A



No. 76352

230 Volts A.C.—250 Volts D.C.

Amps.	Poles	HP. RATING		With Cover Control		Without Cover Control	
		A.C.	D.C.	No.	Each	No.	Each
..	2	5	5	76251	\$11.50	69251	\$9.00
30	3	7½	..	76351	12.00	69351	10.50
..	4	7½	..	76451	17.50	69451	15.00
60	3	10	..	76352	23.50	69352	21.50

575 Volts A.C.—Equipped with Arc Suppressors

30	3	7½	..	76341	\$20.00	69341	\$18.00
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Square D Cover Control Keys

Schedule A



No. 70010

No. 70000, Fits Nos. 76000 and 69000 Motor Starters.....each \$.60

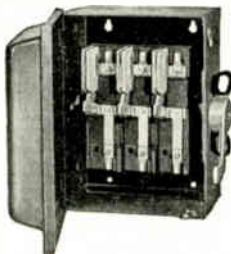
No. 70010, Fits Nos. 80000 and 78000 Series.....each .60

Type C Square D Enclosed Industrial Safety Switches

Single Throw—Not Fusible

Quick Make—Quick Break

Schedule A



All switches are enclosed in sheet steel boxes.

2-Pole, 230 Volts A.C.—250 Volts D.C.

No.	Each	Amps.	HP. RATING A.C.	D.C.
*43251	\$4.50	30	3	5
*41252	10.00	60	7½	10
41253	20.00	100	15	15
41254	26.50	200	25	30
41255	56.50	400	50	50
41256	95.00	600	..	..

3-Pole, 230 Volts A.C.—250 Volts D.C.

*43351	\$7.00	30	5	..
*41352	11.50	60	10	..
41353	21.50	100	20	..
41354	31.50	200	40	..
41355	71.50	400	50	..
41356	113.00	600	..	..

*Has swing-out interior for easier wiring.

4-Pole, 230 Volts A.C.—250 Volts D.C.

No.	Each	Amps.	HP. RATING A.C.	D.C.
41452	\$17.00	60	15	..
41453	34.00	100	25	..
41454	52.50	200	50	..
41455	94.00	400	..	..
41456	188.00	600	..	..

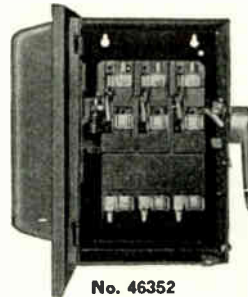
3-Pole, 575 Volts A.C.—With Arc Suppressors

43341	\$10.00	30	10	..
*41342	13.50	30-60	25	..
41343	27.50	100	40	..
41344	40.00	200	50	..

4-Pole, 575 Volts A.C.—With Arc Suppressors

41442	\$22.50	30-60	25	..
41443	39.00	100	40	..
41444	57.50	200	50	..

Type C Square D Enclosed Industrial Safety Switches



No. 46352

2-Pole, 230 Volts A.C.—250 Volts D.C.

Amps.	HP. RATING		Sheet Steel Enclosures		Raintight Enclosures	
	A.C.	D.C.	No.	Each	No.	Each
30	2	5	*45251	\$ 4.50	..	..
30	2	5	*†46251	10.00	..	..
30	..	..	†7251	22.50	..	..
60	5	10	*46252	11.50	..	..
100	10	15	46253	20.00	..	..
200	15	30	46254	27.50	..	..
400	30	50	46255	80.00	..	..
600	..	..	46256	124.00	..	..
3-Wire S/N (2 Blades, 2 Fuses) 230 Volts A.C.—250 Volts D.C.						
30	3	..	*47311	\$ 6.00	47311R	\$12.00
60	7½	..	*47312	11.50	47312R	21.50
100	15	..	47313	20.00	47313R	32.00
200	30	..	47314	31.50	47314R	46.50
400	50	..	47315	87.50	47315R	112.50
600	..	..	47316	138.00	47316R	207.00
3-Pole, 230 Volts A.C.—250 Volts D.C.						
30	3	..	*45351	\$ 7.00	46351R	\$14.00
30	3	..	*†46351	12.50	..	..
60	7½	..	*46352	12.50	46352R	22.50
100	15	..	46353	25.00	46353R	37.00
200	30	..	46354	36.50	46354R	51.50
400	50	..	46355	92.50	46355R	117.50
600	..	..	46356	144.00	..	..

For 2-Pole Switches in Raintight Enclosures, see listing of 3-Wire S/N Switches below.

THREE-WIRE SWITCHING NEUTRAL. These fusible switches can be furnished with unfused switching neutral by omitting the neutral fuse terminals and adding lugs for load connection to blade hinge post on neutral pole. Add SWN to regular 3-pole numbers. Prices are the same as for regular switches.

4-Wire S/N (3 Blades 3 Fuses) 230 Volts A.C.—250 Volts D.C.

30	3	..	*47411	\$10.00	..	..
60	7½	..	47412	14.50	..	..
100	15	..	47413	29.00	..	..
200	30	..	47414	44.00	..	..
400	50	..	47415	112.50	..	..
600	..	..	47416	197.50	..	..

4-Pole, 230 Volts A.C.—250 Volts D.C.

30	3	..	45451	\$14.50	..	..
30	3	..	†46451	17.00	..	..
60	10	..	46452	17.00	..	..
100	20	..	46453	37.50	..	..
200	30	..	46454	60.00	..	..
400	50	..	46455	131.50	..	..
600	..	..	46456	207.00	..	..

5-Wire S/N (4 Blades, 4 Fuses) 230 Volts A.C.—250 Volts D.C.

30	..	..	47511	\$16.00	..	..
60	..	..	47512	25.00	..	..
100	..	..	47513	50.00	..	..
200	..	..	47514	70.00	..	..
400	..	..	47515	163.50	..	..
600	..	..	47516	253.50	..	..

3-Pole, 575 Volts A.C.—Equipped with Arc Suppressors

30	7½	..	*45341	\$13.50	46341R	\$23.50
60	20	..	*46342	17.00	46342R	27.00
100	30	..	46343	35.00	46343R	47.00
200	50	..	46344	52.50	46344R	67.50

4-Pole, 575 Volts A.C.—Equipped with Arc Suppressors

30	7½	..	†46441	\$22.50	..	..
60	20	..	46442	25.00	..	..
100	30	..	46443	50.00	..	..
200	50	..	46444	71.50	..	..

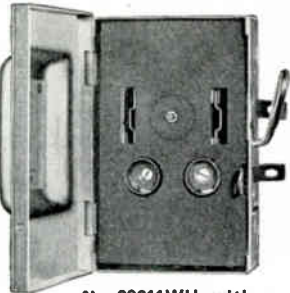
*Has swing-out interior for easier wiring.

†60-ampere switch with 30-ampere fuse spacings and clips.

‡Cast iron enclosures.

§Price does not include hub.

Square D General Purpose Safety Switches



No. 99211WH, with Dead-Front Shield

30 Ampere Switches:
Not Quick Make or Quick Break
*60 to 600-Ampere Switches:
Quick Break Only

Schedule A

Blue Label Switches are rotor disc type—all others are blade type.

All 30, 60 and 100-ampere switches have aluminum finish as standard. Larger sizes (except raintight) have black enamel finish as standard.

Single Throw—Fusible

2-Wire S/N (1 Blade, 1 Fuse) 115 Volts A.C.—125 Volts D.C.

Amps.	Flat Base		Swing-out Interior		*Raintight		Blue Label	
	No.	Each	No.	Each	No.	Each	No.	Each
30 Pg.	97211C	\$1.60	97211	\$2.00	97211R	\$4.50	90211	\$1.60
30 Pg.			†97211WH	2.40			§90211M	1.60
30 Ct.	97251C	2.20	97251	2.60				

2-Pole, 230 Volts A.C.—250 Volts D.C.

30 Pg.	†99211C	\$1.70	†99211	\$2.20	†99211R	\$4.80	†93211	\$1.70
30 Pg.			†99211WH	2.50			†93211C	2.50
30 Pg.							†93011	5.40
30 Pg.							†93011M	6.50
30 Ct.	98251C	2.20	98251	2.70	98251R	5.00	93251	2.20
60	96252	6.20	96252	6.20			§34302	6.20
100	96253	15.00						
200	96254	25.00						

3-Wire S/N (2 Blades, 2 Fuses) 125/250 Volts A.C. or D.C. 230

30 Pg.	†97311C	\$2.00	†97311	\$2.50	†97311R	\$5.10	†90311	\$2.00
30 Pg.			†97311WH	2.80				
30 Ct.	97351C	3.40	†97351	3.90			90351	3.40
60	97312	6.20	97312	6.20	97312R	10.90	§34302	6.20
60							§34302M	6.20
100	97313	15.50			97313R	22.00		
200	97314	27.50			97314R	37.50		

3-Pole, 230 Volts A.C.

30 Pg.	†99311	\$3.40	†99311	\$3.40				
30 Ct.	99351C	4.10	99351	4.60	96351R	\$9.00		
60	96352	7.90	96352	7.90	96352R	12.40		
100	96353	16.50			96353R	24.00		
200	96354	31.50			96354R	41.50		

4-Wire S/N (3 Blades, 3 Fuses) 230 Volts A.C.

30 Pg.			†97411	\$7.00				
30 Ct.	97451	\$7.30	97451	7.30				
60	97412	11.80						
100	97413	25.00						
200	97414	41.50						

4-Pole, 230 Volts A.C.

30 Pg.	†96411	\$7.30						
30 Ct.	96451	7.90						
60	96452	14.10						
100	96453	30.00						
200	96454	56.50						

5-Wire S/N (4 Blades, 4 Fuses) 115/230 Volts A.C.

30 Ct.	97551	\$10.70						
60	97512	18.60						
100	97513	39.00						
200	97514	66.50						

Single Throw—Not Fusible

2-Pole, 230 Volts A.C.—250 Volts D.C.

30	91251	\$2.00	91251	\$2.00				
60	91252	5.50	91252	5.50				
100	91253	14.00						
200	91254	21.50						

3-Pole, 230 Volts A.C.

30	91351	\$3.50	91351	\$3.50				
60	91352	7.50	91352	7.50				
100	91353	15.00						
200	91354	29.00						

4-Pole, 230 Volts A.C.

30	91451	\$7.00						
60	91452	12.50						
100	91453	26.50						
200	91454	45.00						

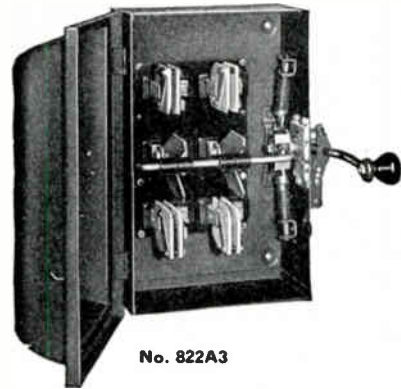
*Raintight switches are not quick make or quick break. Hubs can be furnished in raintight boxes at extra cost.
†115/230 volts a.c.—125/250 volts d.c. only.
‡115 volts a.c. only.
§Same as No. 90211 except in larger box.
¶Dual water heater switch (two No. 93211 in one box).
*Has dead-front shield over interior.
*Connection ahead of fuses for water heater.
§Has Service Equipment label.

Square D Double Throw Switches

82,000 Series Switches:

Quick Make—Quick Break—Interlocked Cover
52,000 Series Switches: Not Quick Make or Quick Break
52,000 Series Switches: Positive Make—Quick Break

Schedule A



No. 822A3

Explosion-resisting boxes are equipped with two threaded conduit hubs of proper size. Two additional holes will be drilled and tapped where pads are provided and two pipe plugs furnished at no extra cost.

2-Pole, 230 Volts A.C.—250 Volts D.C.

Fusible, Top and Bottom Sheet Metal Enclosures				Not Fusible Sheet Metal Enclosures				Explosion-Resisting Enclosures	
No.	Each	Amps.	Amps.	No.	Each	No.	Each	No.	Each
92251-F	\$21.50	30	30	92251	\$14.50				
82252-F	27.00	60	60	82252	19.00				
82253-F	65.50	100	100	82253	34.00				
82254-F	94.50	200	200	82254	47.50				
92255-F	192.00	400	400	92255	135.00				
92256-F	239.00	600	600	92256	191.50				

3-Pole, 230 Volts A.C.—250 Volts D.C.

92351-F	\$26.00	30	30	92351	\$17.00				
82352-F	34.00	60	60	82352	22.50				
82353-F	79.00	100	100	82353	41.50				
82354-F	125.00	200	200	82354	69.00				
92355-F	264.00	400	400	92355	181.00				
92356-F	320.00	600	600	92356	252.50				

4-Pole, 230 Volts A.C.—250 Volts D.C.

92451-F	\$36.00	30	30	92451	\$25.00				
92452-F	58.50	60	60	92452	36.00				
92453-F	92.50	100	100	92453	74.50				
92454-F	158.00	200	200	92454	108.00				
92455-F	293.00	400	400	92455	243.50				
92456-F	378.00	600	600	92456	316.00				

2-Pole, 575 Volts A.C.—600 Volts D.C.

82261-F	\$48.50	30	30-60	82262	\$21.50	†52262	\$124.00
82262-F	48.50	60	100	*82263	37.00	†52263	366.00
*82263-F	87.00	100	200	*82264	53.00	52264	450.00
*82264-F	110.50	200	400	*92245	152.00		
*92245-F	207.50	400	600	*92246	214.00		

3-Pole, 575 Volts A.C.

82341-F	\$49.50	30	30-60	82342	\$25.00	†52342	\$135.00
82342-F	49.50	60	100	82343	45.00	†52343	377.50
82343-F	92.50	100	200	82344	73.00	52344	467.50
82344-F	145.50	200	400	92345	191.50		
92345-F	264.50	400	600	92346	277.00		

4-Pole, 575 Volts A.C.

92441-F	\$76.50	30	30-60	92442	\$39.50		
92442-F	76.50	60	100	92443	84.50		
92443-F	137.50	100	200	92444	118.00		
92444-F	185.00	200	400	92445	265.00		
92445-F	318.00	400	600	92446	344.00		

*575 volts a.c.—250 volts d.c. only.

†Approved by Underwriters' Laboratories, Inc. for Class 1, Group D hazardous locations and all lower classifications.

Square D Service Equipment
 Sequence: Meter—Switch—Fuse—Accessible Mains
 115 Volts and 115/230 Volts A.C.
 Schedule A



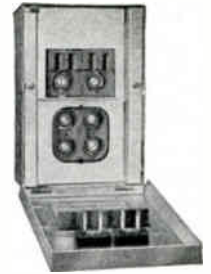
No. 33582S



No. 39902D



No. 32582



No. 33401

Standard finish: all boxes and surface covers, aluminum; flush covers, gray enamel.

Group C—Pullout Mains—Dead Main Fuses

Square D Horizontal Fuse-Breaks—Indoor Type
 Grounded Neutral

MAINS				BRANCH FUSES		Surface Mounting		Flush Mounting		Insulated Surface Mounting		Groundable Neutral Flush Mounting	
Amps.	Poles	Blades	Fused Poles	30 Amps.	60 Amps.	No.	Each	No.	Each	No.	Each	No.	Each
*60	3	2	2							39112	\$6.20	37122	\$7.20
†60	3	2	2							39132H	6.20		
*60	3	2	2	2						39312	8.20	37322	9.20
†60	3	2	2	2						39332H	8.20		
*60	3	2	2	4						39512	8.50	37522	9.50
†60	3	2	2	4						39532H	8.50		
*60	3	2	2	6						39712	12.80	37722	12.80
†60	3	2	2	6						39732H	12.80		
*60	3	2	2	8						39912	17.50	37922	18.50
†60	3	2	2	8						39932H	17.50		
*60	3	2	2		2	33182S	\$9.50	33182F	\$10.50	33182ZS	9.50	33182ZF	10.50
†60	3	2	2		2	33182H	9.50						
*60	3	2	2	2	2	33382S	9.50	33382F	10.50	33382ZS	9.50	33382ZF	10.50
†60	3	2	2	2	2	33382H	9.50						
*60	3	2	2	4	2	33582S	8.55	33582F	9.55	33582ZS	8.55	33582ZF	9.55
†60	3	2	2	4	2	33582H	8.55						
*60	3	2	2	4	2	§33582PS	8.55	§33582PF	9.55				
†60	3	2	2	4	2	§33582PH	8.55						
*60	3	2	2	4	2	¶33592	15.50						
§60	3	2	2	6	2	33782PS	14.50	33782PF	14.50				
¶60	3	2	2	6	2	33782S	14.50	33782F	14.50				
§60	3	2	2	8	2	33982PS	19.00	33982PF	21.00				
*60	3	2	2	8	2	33982S	19.00	33982F	21.00				
*100	3	2	2	4	2	§33583PS	10.00	§33583PF	11.00				
†100	3	2	2	4	2	§33583PH	10.00						
60	3	2	2			**39902	\$6.80						
100	3	2	2			††39903	29.50						

Group B4—Fuseless Main Switches

*30	3	2		2		32482	\$6.50	32472	\$7.00	97311WH	\$2.80		
*60	3	2		4	2	32582	8.30	32572	9.30				
*30	3	2		6		32682	7.50	32672	8.00				
100	3	2		4	2	32583	9.75	32573	10.75				

Group D—Letterbox Type—Cover Operated—Dead Main Fuses

For Ganging or Single Installations—Indoor Type

For ganging type with removable sidewalls, add X to number at no increase in price.													
*30	2	1	1P			33021	\$4.50			33021Z	\$4.50		
*30	2	2	2P			33001	5.50						
*30	3	2	2P			††33091M	12.50						
*30	3	2	2P			33031	5.50			33031Z	5.50		

No. 29001 Ganging Connectors, 30 cents each.

Non-Ganging Type—With Swing-out Interiors for Easier Wiring—Indoor Type

*30	2	1	1	2		33221	\$5.50			33221Z	\$5.50		
*30	2	1	1	4		33421	7.00						
*30	2	2	2	2		33201	6.50						
*30	2	2	2	4		33401	8.00						
*30	3	2	2	2		33231	6.50			33231Z	6.50		
*30	3	2	2	4		33431	8.00			33431Z	8.00		

Non-Ganging Type—With Swing-out Interiors for Easier Wiring—Outdoor Type

30	2	1	1P			††39021	\$7.00						
30	3	2	2P			††39031	8.00						

*Conduit endwall. †Metering endwall. †Shutter-type endwall.

§Main and range fuses are wired in parallel.

¶Similar to No. 33582 except that it will accommodate socket for Type S meter at top.

**Outdoor switch. One 1 or 1¼-inch hub or nipple will be furnished in top at no extra charge if specified.

††Outdoor switch. Price does not include hub.

†††Has provision for one meter socket at top, for "off peak" water heater service.

Square D Service Equipment

Sequence: Meter—Switch—Fuse. Sealable Main Fuses
115 Volts and 115/230 Volts A.C.
Schedule A

Group B3: Knife Switch Mains—Live Front

Group B4: Toggle Switch Mains—Live Front—Square D Fuse-Break in 60-Ampere Branches Only



No. ADF63



No. S-3104



No. ADF-3310

MAINS				Flush Mounting			Surface Mounting		
Amps.	Poles	Blades	Fused Poles	Group	No.	Each	Group	No.	Each
30	2	1	1P	B4	ADF-31	\$4.50	B3	97211CS	\$1.60
30	2	2	2P	B4	ADF-32	5.50	...	...	...
30	2	2	2C	B4	ADF-32C	5.50	...	...	...
30	3	2	2P	B4	ADF-33	5.50	B3	97311CS	2.00
60	2	2	2	B4	ADF-62	11.00	...	...	...
60	3	2	2	B4	ADF-63	11.50	B3	97312S	6.20
100	2	2	2	B4	ADF-102	24.50	...	...	...
100	3	2	2	B4	ADF-103	25.00	B3	97313CS	15.50

MAINS				BRANCH FUSES		With Transformer Barrier and Knockout for Despard Fittings				Without Transformer Barrier and Knockouts for Despard Fittings				
Amps.	Poles	Blades	Fused	30	60	Flush Mounting		Surface Mounting		Flush Mounting		Surface Mounting		
Amps.	Poles	Blades	Fused	Amps.	Amps.	No.	Each	No.	Each	No.	Each	No.	Each	
30	2	1	1P	2	..	B4	TF-2102	\$7.00	TS-2102	\$6.50	F-2102	\$6.00	S-2102	\$5.50
30	2	1	1P	3	..	B4	*ADF-323	7.50	*ADS-323	7.00	*ADF-323A	6.50	*ADS-323A	6.00
30	2	1	1P	4	..	B4	TF-2104	8.00	TS-2104	7.50	F-2104	7.00	S-2104	6.50
30	3	2	2P	2	..	B4	ADF-332	7.50	ADS-332	7.00	ADF-332A	6.50	ADS-332A	6.00
30	3	2	2P	3	..	B4	ADF-333	8.00	ADS-333	7.50	ADF-333A	7.00	ADS-333A	6.50
30	3	2	2P	4	..	B4	TF-3104	8.50	TS-3104	8.00	F-3104	7.50	S-3104	7.00
30	3	2	2P	5	..	B4	*ADF-335	9.50	*ADS-335	9.00	*ADF-335A	8.50	*ADS-335A	8.00
30	3	2	2P	6	..	B4	TF-3106	11.60	TS-3106	11.10	F-3106	10.60	S-3106	10.10
30	3	2	2P	8	..	B4	TF-3108	16.00	TS-3108	15.50	F-3108	15.00	S-3108	14.50
30	3	2	2P	10	..	B4	ADF-3310	19.00	ADS-3310	18.50	ADF-3310A	18.00	ADS-3310A	17.50
60	3	2	2	6	..	B4	TF-3206	13.50	TS-3206	13.00	F-3206	12.50	S-3206	12.00
60	3	2	2	8	..	B4	TF-3208	20.50	TS-3208	19.50	F-3208	19.50	S-3208	18.50
60	3	2	2	10	..	B4	TF-3210	24.50	TS-3210	23.00	F-3210	23.50	S-3210	22.00
60	3	2	2	12	..	B4	TF-3212	28.50	TS-3212	27.50	F-3212	27.50	S-3212	26.50

*One circuit for bell transformer only.

Square D Sheet Steel Outdoor Meter Boxes

Schedule A

No. 12611. Upper half of box is equipped with wood block for mounting meter. Space in lower half is for mounting any standardized accessible or sealable fuse switch. Cabinet is standard sheet metal with one coat of gray enamel. Hinged cover with sealing device permits access to switch. Price does not include switch.

Height, 22 $\frac{1}{8}$ inches; width, 9 $\frac{1}{2}$ inches; depth, 7 $\frac{1}{4}$ inches.

Cannot be furnished with conduit hub.

No. 12952. Has Square D 60-ampere Fuse-Break in the bottom section which serves as main switch and fuse holder. Price includes pole mounting bracket but does not include conduit hub.



No. 12952

Height, 19 $\frac{1}{4}$ inches; width, 7 $\frac{3}{8}$ inches; depth, 7 $\frac{3}{8}$ inches. Knockouts: one $\frac{3}{4}$ -inch size in back and sides and one ($\frac{1}{2}$, $\frac{3}{4}$, 1-inch) in bottom.

No. 12501-A. Has a two-in two-out test block. Box is made of copper bearing galvanized sheet metal with baked aluminum finish. Price includes 1-inch hub in top.

Height, 16 $\frac{5}{8}$ inches; width, 7 $\frac{3}{8}$ inches; depth, 6 $\frac{1}{8}$ inches. Knockouts: one ($\frac{1}{2}$, $\frac{3}{4}$, 1, 1 $\frac{1}{4}$ -inch) in back; one ($\frac{1}{2}$, $\frac{3}{4}$, 1, 1 $\frac{1}{4}$ -inch) in each side; and one $\frac{1}{2}$ -inch size, one ($\frac{3}{4}$, 1-inch) and one ($\frac{1}{2}$, $\frac{3}{4}$, 1-inch) in bottom.

No. 12501-B. Similar to No. 12501-A, but has a two-strap block for 2-wire single phase service. Price includes 1-inch hub in top.

No. 12541. Similar to No. 12501-A but is cabinet only, without test block. Price includes 1-inch hub in top.

No. SK-2608. Similar to No. 12501-A but has a cross-over test block. Price includes 1-inch hub in top.

No. 12601. Has galvanized sheet metal cabinet with one coat of gray enamel and cross-over type test block, permitting straight connection to meter. Cannot be furnished with conduit hub.

Height, 20 $\frac{7}{8}$ inches; width, 7 $\frac{7}{8}$ inches; depth, 7 $\frac{1}{16}$ inches. Knockouts: one ($\frac{3}{4}$, 1, 1 $\frac{1}{4}$ -inch) in sides, two ($\frac{3}{4}$, 1, 1 $\frac{1}{4}$ -inch) in back, and two ($\frac{3}{4}$, 1, 1 $\frac{1}{4}$ -inch) and one $\frac{1}{2}$ -inch in bottom.



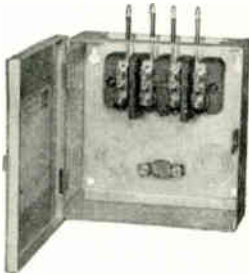
No. 12501-A

Nos. 12621 and SK-2186. Have galvanite cabinets. Cannot be furnished with conduit hubs. No. 12621 test block is of the standard straight-through type. No. SK-2186 is the cabinet without test block. Dimensions and knockouts are the same as those of No. 12601.

Amps.	With Test Block		Without Test Block	
	No.	Each	No.	Each
30	.....	.....	12611	\$15.50
60	.....	.....	12952	11.50
60	12501-A	\$7.00	12541	5.50
60	12501-B	6.00	12541	5.50
60	SK-2608	8.50	12541	5.50
60	12601	11.50	.....	.....
60	12621	10.00	SK-2186	7.00

Square D Indoor Meter Boxes

Schedule A



No. 12392B

Nos. 12452, 12461, 12462, 12463, 12464, 12662 and 12663. Supplied with a blank steel shutter closing the opening of top of box.

No. 12411. Used on Meter-Control Panelboards as a test block and meter trim.

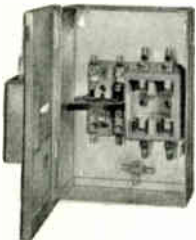
No. 12372. Has plug-in type meter connectors. The box is sealable and contains test links.

No. 12392B. A small compact box with a two-in, two-out test block, and removable test links. Has 1/2, 3/4, 1 and 1 1/4-inch concentric knockouts.

No.	With End-wall, Each	Amperes	Volts	Wire
12461	\$7.00	30	250-600	2-3
12411	5.50	30	125-250	2-3
12372	7.00	60	125-250	2-3
12392B	5.50	60	125-250	2-3
12452	6.00	60	125-250	2-3
12462	12.50	60	250-600	2-3
12662	21.50	60	250-600	4
12463	15.00	100	250-600	2-3
12663	25.00	100	250-600	4
12464	21.50	200	250-600	2-3

Square D Meter Service Switches

Sequence: Switch—Meter—Fuse—Accessible Main Fuses



No. 31312

Insulated Neutral—Test Facilities

115 Volts and 115/230 Volts A.C.

Schedule A

Switches have meter endwalls.

Standard finish, aluminum.

No.	With End-wall, Each	MAINS			BRANCH FUSES	
		Amps.	Poles	Blades	30 Amps.	60 Amps.
31211	\$6.00	30	2	1	..	..
31311	7.50	30	3	2	..	..
*SK-2445	9.00	30	2	1	2	..
*SK-2446	10.00	30	2	1	4	..
*SK-2447	10.50	30	3	2	2	..
*SK-2448	11.50	30	3	2	4	..
††31312	12.50	60	3	2	..	..
†§31332-C	21.00	60	3	2	2	2
††31352	21.50	60	3	2	4	2
††31372	24.00	60	3	2	6	2
††31302	26.50	60	3	2	8	2
††31313	22.50	100	3	2	..	..
†§31323-C	37.00	100	3	2	..	4

*Combination switch and fuse cabinet nipped and wired.
 †Rotor disc type.
 †Grounded neutral.
 §Equipped with Square D Fuse-Break in range circuit.

Square D Meter Service Switches

Sequence: Switch—Fuse—Meter Accessible Main Fuses

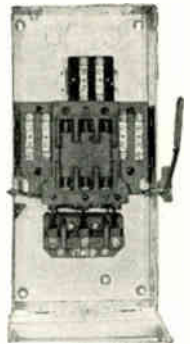
Insulated Neutral—Meter Test and Not Meter Test

115 Volts and 115/230 Volts A.C.

Schedule A



No. 30331



No. 30413

All of these switches are bottom connected, and have meter endwalls.

Standard finish, aluminum.

MAINS	Fused	BRANCHES	Meter Test		Not Meter Test	
			With Endwall Each	No.		
Amps.	Poles	30 Amps.	60 Amps.	No.	No.	
30	2	1P	..	30231	\$6.50	
30	2	1P	2	*SK2187	10.00	
30	2	1P	4	*SK2188	11.50	
30	2	2P	..	30211	7.50	
30	2	2P	2	*SK2233	10.50	
30	2	2P	4	*SK2197	12.00	
30	3	2P	..	30331	8.00	
30	3	2P	2	*SK2391	11.50	
30	3	2P	4	*SK2189	13.00	
30	2	1C	..	30271	7.00	
30	2	2C	..	30251	8.50	
30	3	2C	..	30371	8.50	
30	3	3C	..	†30391	22.50	
30	4	3C	..	†30411	29.00	
60	2	1	..	30272	16.50	
60	2	2	..	30252	17.50	
60	3	2	..	30372	19.00	
60	3	2	..	†30312	19.00	
60	3	3	..	†30392	29.50	
60	4	3	..	†30412	34.00	
100	2	1	..	30273	30.00	
100	2	2	..	30253	30.00	
100	3	2	..	30373	32.50	
100	3	2	..	†30313	32.50	
100	3	3	..	†30393	56.50	
100	4	3	..	†30413	67.50	
200	3	2	..	†30314	80.00	
200	3	3	..	†30394	112.50	
200	4	3	..	†30414	140.00	
400	3	2	..	†30315	169.00	
400	3	3	..	†30395	200.00	
400	4	3	†10415	169.00
600	3	2	†10316	238.00
600	3	3	†10396	250.00
600	4	3	†10416	257.00
800	3	2	†10317	332.00
800	4	3	†10417	425.00
1200	4	3	†10418	595.00

*Combination switch and fuse cabinet nipped and wired.
 †Switches with visible blades.

Square D Universal Meter Testing Service Switches



No. 34311

Sequence: Switch—Fuse—Meter

Insulated Neutral

125 Volts and 125/250 Volts, A.C. or D.C.

Schedule A

These switches are furnished with Service Equipment labels.

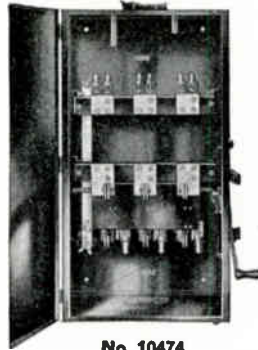
Switches have removable endwalls. Specify on order whether conduit or metering endwalls are desired. Standard finish, aluminum.

—BRANCH CIRCUITS—

No.	With Endwall Each	MAINS				Circuits	Fuses in Each	
		Amps.	Poles	Blades	Fuses		Fuses	Socket
33211	\$6.50	30	2	1	1	2	2	1
*32211	6.50	30	2	1	1	2	2	1
34211	8.00	30	2	1	1	2	4	2
34211	8.00	30	2	1	1	4	4	1
32311	7.00	30	2	2	2	1	2	2
34311	9.00	30	2	2	2	2	4	2
32311	7.00	30	3	2	2	2	2	1
32311	7.00	30	3	2	2	1	2	2
34311	9.00	30	3	2	2	2	4	2
34311	9.00	30	3	2	2	4	4	1

*Branch fuses are in horizontal position.

Square D Current Transformer and Meter Service Entrance Switches



No. 10474

Insulated Neutral

250 Volts A.C.

Schedule A

These switches are furnished with Service Equipment labels.

Switches have removable endwalls. Specify on order whether conduit or metering endwalls are desired.

Standard finish, aluminum.

No.	Each	Amps.	Poles	Blades	Fused Poles
10474	\$155.00	200	4	3	3
10475	225.00	400	4	3	3
10476	280.00	600	4	3	3
10477	420.00	800	4	3	3
10478	540.00	1200	4	3	3



No. 36331

Square D Meter Service Switches

Sequence: Switch—Fuse—Meter Sealable Main Fuses

Insulated Neutral—Not Meter Test

125 Volts and 125/250 Volts, A.C. or D.C.

Schedule A

With Service Equipment labels.

Unless otherwise indicated, switches have removable endwalls. Specify on order whether conduit or metering endwalls are desired.

Standard finish, aluminum.

No.	With Endwall Each	MAINS				Fused Poles
		Amps.	Poles	Blades	Fuses	
*97211CM	\$1.60	30	2	1	1P	
*†97211M	2.00	30	2	1	1P	
*99211CM	1.70	30	2	2	2P	
*†99211M	2.20	30	2	2	2P	
†26311	4.10	30	3	2	2P	
*97311CM	2.00	30	3	2	2P	
*†97311M	2.50	30	3	2	2P	
*97251CM	2.20	30	2	1	1C	
*98251CM	2.20	30	2	2	2C	
*†98251M	2.70	30	2	2	2C	
†26351	6.20	30	3	2	2C	
†SK-671	5.10	30	3	3	3C	
*†SK-2161	7.60	30	4	3	3C	
*†99252	6.20	60	2	2	2	
*†99312	6.20	60	3	2	2	
34302	6.20	60	3	2	2	
†SK-672	14.60	60	3	3	3	
*†99352	7.90	60	3	3	3	
*†SK-2162	12.40	60	4	3	3	
*99253	15.00	100	2	2	2	
*99313	15.50	100	3	2	2	
†SK-673	25.00	100	3	3	3	
*99353	16.50	100	3	3	3	
*†SK-2163	26.50	100	4	3	3	
*99314	27.50	200	3	2	2	
*99354	31.50	200	3	3	3	
*99315	87.50	400	3	2	2	
*99355	92.50	400	3	3	3	

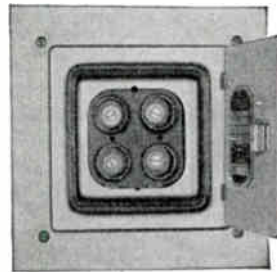
*Has metering endwall—not removable.

†Has swing-out interior.

‡Switches in standardized boxes with visible blades.

Square D Fuse Cabinets

Schedule F



No. 37421

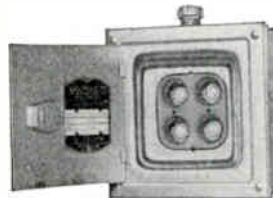
Standard finish, aluminum.

No. of Circuits	Surface No.	Flush No.	Flush or Surface Type Each
2	39211	37221	\$2.20
4	39411	37421	2.90
6	39611	37621	4.85
8	39811	37821	7.30
10	39011	37021	10.70
12	39111	37121	14.55

Square D Unwired Branch Circuit Attachments

Schedule A

Standard finish, aluminum.



No.	Each	No. of Circuits
39271	\$2.90	2
39471	3.70	4
39671	5.90	6



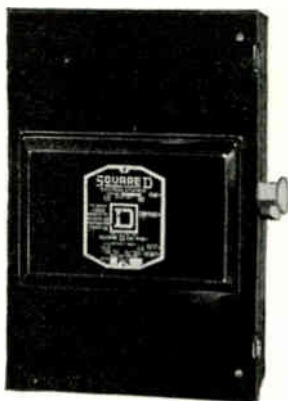
Square D Industrial Nofuze Circuit Breakers

Manually Operable—Quick Make—Quick Break

Schedule D1



No. 66215



No. 67370

Two and 3-Pole Circuit Breakers. All of these breakers have hinged covers. For 2-pole flush mounting breakers, refer to 3-wire solid neutral breakers. For 3-pole flush mounting breakers, refer to 4-wire solid neutral breakers.

Three and 4-Wire Solid Neutral Breakers. Breakers for flush mounting have removable covers; breakers for surface mounting have hinged covers.

All surface mounting circuit breakers have dust-resisting sheet steel enclosures.

50-Ampere Frame

Type AB1—Form L Breakers—Non-Interchangeable Trip Units

Amps.	230 V. A.C. 125/250 V. D.C.		575 V. A.C. 250 V. D.C.		3-Wire, S/N 230 V. A.C. 125/250 V. D.C.		
	No.	Each	No.	Each	Flush No.	Surface No.	Flush or Surface Each
15	*66215	\$17.00	*66615	\$34.00	†66015-F	*66015-S	\$20.00
20	*66220	17.00	*66620	34.00	†66020-F	*66020-S	20.00
25	*66225	17.00	*66625	34.00	†66025-F	*66025-S	20.00
35	*66235	19.00	*66635	36.00	†66035-F	*66035-S	22.00
50	*66250	19.00	*66650	36.00	†66050-F	*66050-S	22.00

Amps.	230 V. A.C. 125/250 V. D.C.		575 V. A.C. 250 V. D.C.		4-Wire, S/N 230 V. A.C. 125/250 V. D.C.		
	No.	Each	No.	Each	Flush No.	Surface No.	Flush or Surface Each
15	*66315	\$23.00	*66715	\$41.00	†66915-F	*66915-S	\$26.00
20	*66320	23.00	*66720	41.00	†66920-F	*66920-S	26.00
25	*66325	23.00	*66725	41.00	†66925-F	*66925-S	26.00
35	*66335	27.00	*66735	45.00	†66935-F	*66935-S	30.00
50	*66350	27.00	*66750	45.00	†66950-F	*66950-S	30.00

†Form W Breakers.

100-Ampere Frame

Type AB1—Form W Breakers—Interchangeable Trip Units

Amps.	230 V. A.C. 125/250 V. D.C.		575 V. A.C. 250 V. D.C.		3-Wire, S/N 230 V. A.C. 125/250 V. D.C.		
	No.	Each	No.	Each	Flush No.	Surface No.	Flush or Surface Each
50	*67250	\$46.00	*67650	\$55.00	67050-F	*67050-S	\$51.00
70	*67270	46.00	*67670	55.00	67070-F	*67070-S	51.00
90	*67290	46.00	*67690	55.00	67090-F	*67090-S	51.00
100	*67216	46.00	*67616	55.00	67016-F	*67016-S	51.00

Amps.	230 V. A.C. 125/250 V. D.C.		575 V. A.C. 250 V. D.C.		4-Wire, S/N 230 V. A.C. 125/250 V. D.C.		
	No.	Each	No.	Each	Flush No.	Surface No.	Flush or Surface Each
50	*67350	\$58.00	*67750	\$71.00	67950-F	*67950-S	\$63.00
70	*67370	58.00	*67770	71.00	67970-F	*67970-S	63.00
90	*67390	58.00	*67790	71.00	67990-F	*67990-S	63.00
100	*67316	58.00	*67716	71.00	67916-F	*67916-S	63.00

*Has swing-out interior for easier wiring and side operating handle. All other breakers have front operating handles.

Square D Industrial Nofuze Circuit Breakers

Manually Operable—Quick Make—Quick Break

Schedule D1

Two and 3-Pole Circuit Breakers. All of these breakers have hinged covers. For 2-pole flush mounting breakers, refer to 3-wire solid neutral breakers. For 3-pole flush mounting breakers, refer to 4-wire solid neutral breakers.

Three and 4-Wire Solid Neutral Breakers. All of these breakers have removable covers except 600-ampere frame circuit breakers for surface mounting which have hinged covers.

All surface mounting circuit breakers have dust-resisting sheet steel enclosures.

225-Ampere Frame

Type AB1—Form W Breakers—Interchangeable Trip Units

Amps.	2-Pole				3-Wire, S/N 230 V. A.C. 125/250 V. D.C.		
	230 V. A.C. 125/250 V. D.C.		575 V. A.C. 250 V. D.C.		Flush No.	Surface No.	Flush or Surface Each
70	68270	\$121.00	68670	\$142.00	68070-F	68070-S	\$128.00
90	68290	121.00	68690	142.00	68090-F	68090-S	128.00
100	68216	121.00	68616	142.00	68016-F	68016-S	128.00
125	68217	121.00	68617	142.00	68017-F	68017-S	128.00
150	68218	121.00	68618	142.00	68018-F	68018-S	128.00
175	68219	121.00	68619	142.00	68019-F	68019-S	128.00
200	68226	121.00	68626	142.00	68026-F	68026-S	128.00
225	68227	121.00	68627	142.00	68027-F	68027-S	128.00

Amps.	3-Pole				4-Wire S/N 230 V. A.C. 125/250 V. D.C.		
	230 V. A.C. 125/250 V. D.C.		575 V. A.C. 250 V. D.C.		Flush No.	Surface No.	Flush or Surface Each
70	68370	\$145.00	68770	\$174.00	68970-F	68970-S	\$152.00
90	68390	145.00	68790	174.00	68990-F	68990-S	152.00
100	68316	145.00	68716	174.00	68916-F	68916-S	152.00
125	68317	145.00	68717	174.00	68917-F	68917-S	152.00
150	68318	145.00	68718	174.00	68918-F	68918-S	152.00
175	68319	145.00	68719	174.00	68919-F	68919-S	152.00
200	68326	145.00	68726	174.00	68926-F	68926-S	152.00
225	68327	145.00	68727	174.00	68927-F	68927-S	152.00

600-Ampere Frame

Type AB1—Form W Breakers—Interchangeable Trip Units

Amps.	2-Pole				3-Wire, S/N 230 V. A.C. 125/250 V. D.C.			
	230 V. A.C. 125/250 V. D.C.		575 V. A.C. 250 V. D.C.		Flush		Surface	
225	69227	\$305.00	69627	\$325.00	69027-F	\$344.00	69027-S	\$314.00
250	69228	305.00	69628	325.00	69028-F	344.00	69028-S	314.00
275	69229	305.00	69629	325.00	69029-F	344.00	69029-S	314.00
300	69236	305.00	69636	325.00	69036-F	344.00	69036-S	314.00
325	69237	305.00	69637	325.00	69037-F	344.00	69037-S	314.00
350	69238	305.00	69638	325.00	69038-F	344.00	69038-S	314.00
400	69246	305.00	69646	325.00	69046-F	344.00	69046-S	314.00
450	69248	348.00	69648	368.00	69048-F	387.00	69048-S	357.00
500	69256	348.00	69656	368.00	69056-F	387.00	69056-S	357.00
550	69258	348.00	69658	368.00	69058-F	387.00	69058-S	357.00
600	69266	348.00	69666	368.00	69066-F	387.00	69066-S	357.00

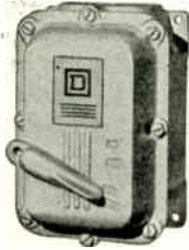
Amps.	3-Pole				4-Wire, S/N 230 V. A.C. 125/250 V. D.C.			
	230 V. A.C. 125/250 V. D.C.		575 V. A.C. 250 V. D.C.		Flush		Surface	
225	69327	\$380.00	69727	\$409.00	69927-F	\$419.00	69927-S	\$389.00
250	69328	380.00	69728	409.00	69928-F	419.00	69928-S	389.00
275	69329	380.00	69729	409.00	69929-F	419.00	69929-S	389.00
300	69336	380.00	69736	409.00	69936-F	419.00	69936-S	389.00
325	69337	380.00	69737	409.00	69937-F	419.00	69937-S	389.00
350	69338	380.00	69738	409.00	69938-F	419.00	69938-S	389.00
400	69346	380.00	69746	409.00	69946-F	419.00	69946-S	389.00
450	69348	437.00	69748	465.00	69948-F	476.00	69948-S	446.00
500	69356	437.00	69756	465.00	69956-F	476.00	69956-S	446.00
550	69358	437.00	69758	465.00	69958-F	476.00	69958-S	446.00
600	69366	437.00	69766	465.00	69966-F	476.00	69966-S	446.00

Square D Cast Iron General Purpose Circuit Breakers

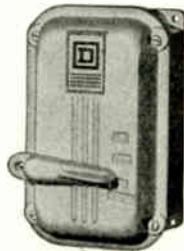
Type ABI—Form L Breakers

125, 125-250 Volts A.C./D.C. and 230 Volts A.C.

Schedule D1



No. 62150X



No. 62120D

These breakers are furnished with explosion resisting and weatherproof and dust-tight enclosures.

Enclosures are supplied with conduit openings. Explosion or weather-resisting enclosures can be furnished with blank reinforced end, if specified on order, at no extra charge.

One Single-Pole

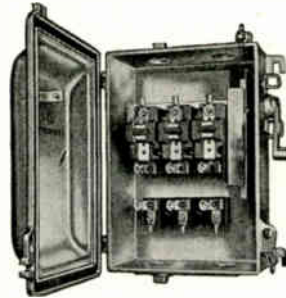
Amps.	Standard Hub or Drilling Size, In.	Explosion-Resisting Form W Enclosures		Weather-proof and Dust-Tight Enclosures	
		No.	Each	No.	Each
15	1/2	*62115X	\$34.00	62115D	\$28.00
20	1/2	*62120X	34.00	62120D	28.00
25	3/4	*62125X	34.00	62125D	28.00
35	3/4	*62135X	35.00	62135D	29.00
50	1	*62150X	35.00	62150D	29.00

*Approved by Underwriters' Laboratories, Inc.

Type A Style RB Trumbull Water Tight and Dust Tight Safety Switches

Single Throw Weatherproof Boxes

Quick Make and Break Interlocking Cover Cast Iron N.E.M.A. Type 4 Enclosure



All weatherproof boxes furnished with two holes drilled and tapped in each end. One hole in each end closed with pipe plug. Pipe size tapped holes; 30 amperes, 3/4-inch; 60 amperes, 1 1/2-inch; 100 amperes, 1 1/2-inch; 200 amperes, 2 1/2-inch; and 400 and 600 amperes, 3-inch.

Solderless lugs standard. Aluminum finish.

Fusible

30 Amperes

No.	Each	No. of Poles	(— VOLTAGE AND MAX. HP. RATING —)
68221C	\$38.00	2	230 A.C., 2 Hp.; 250 D.C., 5 Hp.
68261C	51.00	2	600 D.C., 7 1/2 Hp.
68321C	43.00	3	230 A.C., 3 Hp.
68361C	56.00	3	575 A.C., 7 1/2 Hp.

60 Amperes

68222C	\$50.00	2	230 A.C., 5 Hp.; 250 D.C., 10 Hp.
68262C	62.00	2	600 D.C., 15 Hp.
68322C	57.00	3	230 A.C., 7 1/2 Hp.
68362C	69.00	3	575 A.C., 20 Hp.

100 Amperes

68223C	\$130.00	2	230 A.C., 10 Hp.; 250 D.C., 15 Hp.
68263C	140.00	2	600 D.C., 25 Hp.
68323C	140.00	3	230 A.C., 15 Hp.
68363C	150.00	3	575 A.C., 30 Hp.

200 Amperes

68224C	\$200.00	2	230 A.C., 15 Hp.; 250 D.C., 30 Hp.
68264C	210.00	2	600 D.C., 50 Hp.
68324C	210.00	3	230 A.C., 30 Hp.
68364C	220.00	3	575 A.C., 50 Hp.

400 Amperes

68225C	\$405.00	2	250 D.C., 50 Hp.
68265C	420.00	2	575 A.C.
68325C	420.00	3	230 A.C., 50 Hp.
68365C	435.00	3	575 A.C.

600 Amperes

68226C	\$580.00	2	250
68266C	625.00	2	575 A.C.
68326C	600.00	3	230 A.C.
68366C	650.00	3	575 A.C.

No Fuse

30 Amperes

No.	Each	No. of Poles	(— VOLTAGE AND MAX. HP. RATING —)
34261C	\$37.00	2	230 A.C., 3 Hp.; 250 D.C., 5 Hp.; 600 D.C., 7 1/2 Hp.
34361C	42.00	3	230 A.C., 5 Hp.; 575 A.C., 10 Hp.

60 Amperes

34262C	\$47.00	2	230 A.C., 7 1/2 Hp.; 250 D.C., 10 Hp.; 600 D.C., 15 Hp.
34362C	54.00	3	230 A.C., 10 Hp.; 575 A.C., 25 Hp.

100 Amperes

34263C	\$125.00	2	230 A.C., 15 Hp.; 250 D.C., 15 Hp.; 600 D.C., 25 Hp.
34363C	135.00	3	230 A.C., 20 Hp.; 575 A.C., 40 Hp.

200 Amperes

34264C	\$190.00	2	230 A.C., 25 Hp.; 250 D.C., 30 Hp.; 600 D.C., 50 Hp.
34364C	200.00	3	230 A.C., 40 Hp.; 575 A.C., 50 Hp.

400 Amperes

34265C	\$385.00	2	250 D.C., 50 Hp.; 575 A.C.
34365C	400.00	3	230 A.C., 50 Hp.; 575 A.C.

600 Amperes

34266C	\$560.00	2	575 A.C.
34366C	580.00	3	575 A.C.

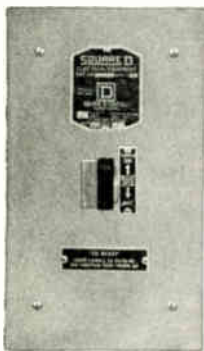
Square D General Purpose Circuit Breakers

Type ABI—Form L Breakers

125, 125-250 Volts A.C./D.C. and 230 Volts A.C.

Schedule D1

Surface covers are finished in black; flush covers are finished in gray.



No. 61115F

One Single-Pole—One Handle

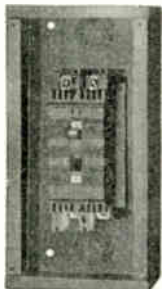
Amps.	Flush No.	Surface No.	Flush or Surface Type Each
15	61115F	61115S	\$7.00
20	61120F	61120S	7.00
25	61125F	61125S	7.00
35	61135F	61135S	8.00
50	61150F	61150S	8.00

One Double-Pole—One Handle

15	61715F	61715S	\$14.00
20	61720F	61720S	14.00
25	61725F	61725S	14.00
35	61735F	61735S	16.00
50	61750F	61750S	16.00

One Triple-Pole—One Handle

15	61515F	61515S	\$21.00
20	61520F	61520S	21.00
25	61525F	61525S	21.00
35	61535F	61535S	25.00
50	61550F	61550S	25.00



No 61715S with Cover Removed

Type A Style A Trumbull Heavy Duty Safety Switches

Single Throw Steel Boxes

Quick Make and Break Interlocking Cover
General Purpose N.E.M.A. Type 1 Enclosure

SN (Solid Neutral) Switches have a neutral strap between two poles. For example: No. 72221, a 2-pole switch, by the addition of this neutral strap becomes No. 72321SN, a 3-pole solid neutral switch. Exception: 3, 4 and 5-pole solid neutral switches 800-ampere and above have regular 3, 4 and 5-pole bases.

SWN (Switching Neutral) Switches can be supplied at same prices as regular. The fuse terminals are omitted from one pole and lug for load connection is placed on the blade hinge post of neutral pole. Add SWN to regular number for this type of switch.

Solderless lugs standard.

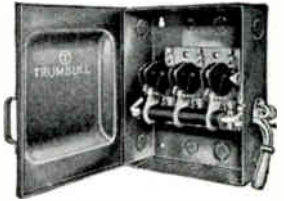
Switches available with 1800 and 2400 amperes. Prices upon request.

Machine grey finish.

*Twin lugs per pole.



Fusible



No Fuse

30 Amperes

No.	Each	No. of Poles	VOLTAGE AND MAXIMUM HP. RATING
72221	\$10.50	2	230 A.C., 2 Hp.; 250 D.C., 5 Hp.
72261	20.50	2	600 D.C., 7½ Hp.
72321	13.50	3	230 A.C., 3 Hp.
72361	25.00	3	575 A.C., 7½ Hp.
72321SN	12.00	3SN	230 3Ø, 3 Hp.; 125-250 D.C., 5 Hp.
72421	20.50	4	230 A.C., 3 Hp.
72461	30.50	4	575 A.C., 7½ Hp.
72421SN	20.50	4SN	230 A.C., 3 Hp.
72521SN	23.50	5SN	115-230 A.C., 3 Hp.
60 Amperes			
72222	\$17.00	2	230 A.C., 5 Hp.; 250 D.C., 10 Hp.
72262	21.50	2	600 D.C., 15 Hp.
72322	22.50	3	230 A.C., 7½ Hp.
72362	26.00	3	575 A.C., 20 Hp.
72322SN	19.00	3SN	230 3Ø, 7½ Hp.; 125-250 D.C., 10 Hp.
72422	27.00	4	230 A.C., 10 Hp.
72462	32.50	4	575 A.C., 20 Hp.
72422SN	26.00	4SN	230 A.C., 7½ Hp.
72522SN	30.50	5SN	115-230 A.C., 10 Hp.
100 Amperes			
72223	\$26.00	2	230 A.C., 10 Hp.; 250 D.C., 15 Hp.
72263	34.00	2	600 D.C., 25 Hp.
72323	34.00	3	230 A.C., 15 Hp.
72363	39.50	3	575 A.C., 30 Hp.
72323SN	30.50	3SN	230 3Ø, 15 Hp.; 125-250 D.C., 15 Hp.
72423	45.00	4	230 A.C., 20 Hp.
72463	52.00	4	575 A.C., 30 Hp.
72423SN	40.50	4SN	230 A.C., 15 Hp.
72523SN	51.00	5SN	115-230 A.C., 20 Hp.
200 Amperes			
72224	\$45.00	2	230 A.C., 15 Hp.; 250 D.C., 30 Hp.
72264	53.00	2	600 D.C., 50 Hp.
72324	50.50	3	230 A.C., 30 Hp.
72364	65.50	3	575 A.C., 50 Hp.
72324SN	49.50	3SN	230 3Ø, 30 Hp.; 125-250 D.C.; 30 Hp.
72424	67.50	4	230 A.C., 30 Hp.
72464	79.00	4	575 A.C., 50 Hp.
72424SN	62.00	4SN	230 A.C., 30 Hp.
72524SN	79.00	5SN	115-230 A.C., 30 Hp.

Fusible

No.	Each	No. of Poles	VOLTAGE AND MAXIMUM HP. RATING
72225	\$101.50	2	250 D.C., 50 Hp.
72265	124.00	2	575 A.C.
72325	112.50	3	230 A.C., 50 Hp.
72365	135.00	3	575 A.C.
72325SN	112.50	3SN	230 3Ø, 50 Hp.; 125-250 D.C., 50 Hp.
72425	146.50	4	230 A.C., 50 Hp.
72465	174.50	4	575 A.C.
72425SN	129.50	4SN	230 A.C., 50 Hp.
72525SN	168.00	5SN	115-230 A.C., 50 Hp.
600 Amperes			
72226	\$146.50	2	250
72266	197.00	2	575 A.C.
72326	175.00	3	230 A.C.
72366	225.00	3	575 A.C.
72326SN	163.50	3SN	230 A.C., 125-250
72426	231.00	4	230 A.C.
72466	270.00	4	575 A.C.
72426SN	200.50	4SN	230 A.C.
72526SN	276.00	5SN	115-230 A.C.
*800 Amperes			
72227	\$248.00	2	250
72267	304.00	2	600
72327	338.00	3	230 A.C.
72367	394.00	3	575 A.C.
72327SN	270.50	3SN	230 A.C., 125-250
72427	434.00	4	230 A.C.
72467	507.00	4	575 A.C.
72427SN	383.00	4SN	230 A.C.
72527SN	440.00	5SN	115-230 A.C.
*1200 Amperes			
72228	\$344.00	2	250
72268	428.00	2	600
72328	434.00	3	230 A.C.
72368	518.00	3	575 A.C.
72328SN	383.00	3SN	230 A.C., 125-250
72428	575.00	4	230 A.C.
72468	647.50	4	575 A.C.
72428SN	476.00	4SN	230 A.C.
72528SN	608.00	5SN	115-230 A.C.

No Fuse

30 Amperes

No.	Each	No. of Poles	VOLTAGE AND MAXIMUM HP. RATING
36221	\$9.00	2	230 A.C., 3 Hp.; 250 D.C., 5 Hp.
36261	12.50	2	600 D.C., 7½ Hp.
36321	11.00	3	230 A.C., 5 Hp.
36361	14.50	3	575 A.C., 10 Hp.
36421	20.50	4	230 A.C., 5 Hp.
36461	20.50	4	575 A.C., 10 Hp.
60 Amperes			
36222	\$12.50	2	230 A.C., 7½ Hp.; 250 D.C., 10 Hp.
36262	17.00	2	600 D.C., 15 Hp.
36362	20.50	3	230 A.C., 10 Hp.; 575 A.C., 25 Hp.
36462	27.00	4	230 A.C., 15 Hp.; 575 A.C., 25 Hp.
100 Amperes			
36223	\$25.00	2	230 A.C., 15 Hp.; 250 D.C., 15 Hp.
36263	26.00	2	600 D.C., 25 Hp.
36363	30.50	3	230 A.C., 20 Hp.; 575 A.C., 40 Hp.
36463	39.50	4	230 A.C., 25 Hp.; 575 A.C., 40 Hp.
200 Amperes			
36224	\$31.50	2	230 A.C., 25 Hp.; 250 D.C., 30 Hp.
36264	35.00	2	600 D.C., 50 Hp.
36364	43.00	3	230 A.C., 40 Hp.; 575 A.C., 50 Hp.
36464	59.00	4	230 A.C., 50 Hp.; 575 A.C., 50 Hp.

400 Amperes

No.	Each	No. of Poles	VOLTAGE AND MAXIMUM HP. RATING
36225	\$ 67.50	2	250 D.C., 50 Hp.
36265	101.50	2	575 A.C.
36365	112.50	3	230 A.C., 50 Hp.; 575 A.C.
36465	146.50	4	230 A.C., 50 Hp.; 575 A.C.
600 Amperes			
36226	\$112.50	2	250
36266	146.50	2	575 A.C.
36366	180.50	3	575 A.C.
36466	220.00	4	575 A.C.
*800 Amperes			
36227	\$220.00	2	250
36267	220.00	2	600
36367	293.00	3	575 A.C.
36467	378.00	4	575 A.C.
*1200 Amperes			
36228	\$299.00	2	250
36268	299.00	2	600
36368	394.00	3	575 A.C.
36468	518.00	4	575 A.C.

Type A Trumbull Heavy Duty Safety Switches

Single Throw Steel Boxes

**Quick Make and Break Interlocking Cover
General Purpose N.E.M.A. Type 1 Enclosure**



Style RBA

Solid Neutral Switches having a neutral strap between two poles can be supplied.

Switching Neutral Switches can be supplied at same prices as regular switches. Add SWN to regular number for this type of switch.

Flush mounting type available. Prices upon request.

Solderless lugs standard.

Machine grey finish.

Fusible

No.	Each	No. of Poles
66221	\$10.50	2
66261	20.50	2
66321	13.50	3
66361	25.00	3
66421	20.50	4
66461	30.50	4
66222	\$17.00	2
66262	21.50	2
66322	22.50	3
66362	26.00	3
66422	27.00	4
66462	32.50	4
66223	\$26.00	2
66263	34.00	2
66323	34.00	3
66363	39.50	3
66423	45.00	4
66463	52.00	4

30 Amperes

VOLTAGE AND MAX. HP. RATING

230 A.C., 2 Hp.; 250 D.C., 5 Hp.
600 D.C., 7½ Hp.
230 A.C., 3 Hp.
575 A.C., 7½ Hp.
230 A.C., 3 Hp.
575 A.C., 7½ Hp.

60 Amperes

230 A.C., 5 Hp.; 250 D.C., 10 Hp.
600 D.C., 15 Hp.
230 A.C., 7½ Hp.
575 A.C., 20 Hp.
230 A.C., 10 Hp.
575 A.C., 20 Hp.

100 Amperes

230 A.C., 10 Hp.; 250 D.C., 15 Hp.
600 D.C., 25 Hp.
230 A.C., 15 Hp.
575 A.C., 30 Hp.
230 A.C., 20 Hp.
575 A.C., 30 Hp.

Fusible

No.	Each
66224	\$45.00
66264	53.00
66324	50.50
66364	65.50
66424	67.50
66464	79.00
66225	\$101.50
66265	124.00
66325	112.50
66365	135.00
66425	146.50
66465	174.50
66226	\$146.50
66266	197.00
66326	175.00
66366	225.00
66426	231.00
66466	270.00

200 Amperes

No. of Poles	VOLTAGE AND MAX. HP. RATING
2	230 A.C., 15 Hp.; 250 D.C., 30 Hp.
2	600 D.C., 50 Hp.
3	230 A.C., 30 Hp.
3	575 A.C., 50 Hp.
4	230 A.C., 30 Hp.
4	575 A.C., 50 Hp.

400 Amperes

2	250 D.C., 50 Hp.
2	575 A.C.
3	230 A.C., 50 Hp.
3	575 A.C.
4	230 A.C., 50 Hp.
4	575 A.C.

600 Amperes

2	250
2	575 A.C.
3	230 A.C.
3	575 A.C.
4	230 A.C.
4	575 A.C.

No Fuse

No.	Each	No. of Poles
33221	\$9.00	2
33261	12.50	2
33321	11.00	3
33361	14.50	3
33421	20.50	4
33461	20.50	4
33222	\$12.50	2
33262	17.00	2
33362	20.50	3
33462	27.00	4
33223	\$25.00	2
33263	26.00	2
33363	30.50	3
33463	39.50	4

30 Amperes

VOLTAGE AND MAX. HP. RATING
230 A.C., 3 Hp.; 250 D.C., 5 Hp.
600 D.C., 7½ Hp.
230 A.C., 5 Hp.
575 A.C., 10 Hp.
230 A.C., 5 Hp.
575 A.C., 10 Hp.

60 Amperes

230 A.C., 7½ Hp.; 250 D.C., 10 Hp.
600 D.C., 15 Hp.
230 A.C., 10 Hp.; 575 A.C., 25 Hp.
230 A.C., 15 Hp.; 575 A.C., 25 Hp.

100 Amperes

230 A.C., 15 Hp.; 250 D.C., 15 Hp.
600 D.C., 25 Hp.
230 A.C., 20 Hp.; 575 A.C., 40 Hp.
230 A.C., 25 Hp.; 575 A.C., 40 Hp.

No.	Each
33224	\$31.50
33264	35.00
33364	43.00
33464	59.00
33225	\$67.50
33265	101.50
33365	112.50
33465	146.50
33226	\$112.50
33266	146.50
33366	180.50
33466	220.00
.....
.....

200 Amperes

No. of Poles	VOLTAGE AND MAX. HP. RATING
2	230 A.C., 25 Hp.; 250 D.C., 30 Hp.
2	600 D.C., 50 Hp.
3	230 A.C., 40 Hp.; 575 A.C., 50 Hp.
4	230 A.C., 50 Hp.; 575 A.C., 50 Hp.

400 Amperes

2	250 D.C., 50 Hp.
2	575 A.C.
3	230 A.C., 50 Hp.; 575 A.C.
4	230 A.C., 50 Hp.; 575 A.C.

600 Amperes

2	250
2	575 A.C.
3	575 A.C.
4	575 A.C.

Style RM

Solid Neutral Switches having a neutral strap between two poles can be supplied.

Switching Neutral Switches can be supplied at same prices as regular switches. Add SWN to regular number for this type of switch.

Solderless lugs standard.

Machine grey finish.



Fusible—250 Volts

No Fuse

30 Amperes

No.	Each	No. of Poles
46221	\$9.00	2
46321	11.00	3
46421	20.50	4
46262	\$17.00	2
46362	20.50	3
46462	27.00	4

VOLTAGE AND MAX. HP. RATING

230 A.C., 3 Hp.; 250 D.C., 5 Hp.
230 A.C., 5 Hp.
230 A.C., 5 Hp.

60 Amperes

250 D.C., 10 Hp.; 230 A.C., 7½ Hp.
600 D.C., 15 Hp.

230 A.C., 10 Hp.; 575 A.C., 25 Hp.
230 A.C., 15 Hp.; 575 A.C., 25 Hp.

No.	Each
92221	\$10.50
92261	20.50
92321	13.50
92361	25.00
92421	20.50
92461	30.50
92222	\$17.00
92262	21.50
92322	22.50
92362	26.00
92422	27.00
92462	32.50

Fusible

30 Amperes

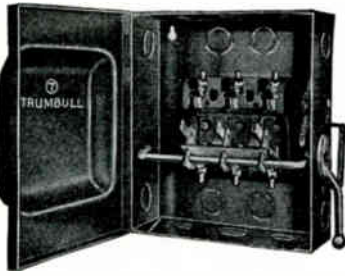
No. of Poles	VOLTAGE AND MAX. HP. RATING
2	230 A.C., 2 Hp.; 250 D.C., 5 Hp.
2	600 D.C., 7½ Hp.
3	230 A.C., 3 Hp.
3	575 A.C., 7½ Hp.
4	230 A.C., 3 Hp.
4	575 A.C., 7½ Hp.

60 Amperes

2	230 A.C., 5 Hp.; 250 D.C., 10 Hp.
2	600 D.C., 15 Hp.
3	230 A.C., 7½ Hp.
3	575 A.C., 20 Hp.
4	230 A.C., 10 Hp.
4	575 A.C., 20 Hp.

Type C Trumbull Safety Switches

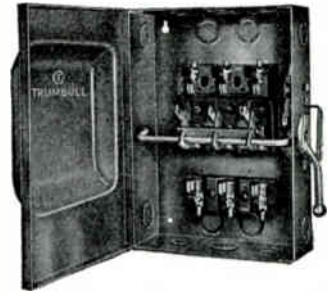
Single Throw Steel Boxes
Quick Make and Quick Break
General Purpose N.E.M.A. Type 1 Enclosure



No Fuse—60 Amp, 230 V.



Solid Neutral



Fusible—60 Amp, 230 V.

SN (Solid Neutral) Switches are furnished with insulated groundable neutral 30-100 amperes inclusive; 200 amperes and above insulated neutral only with lugs for grounding if desired. Lug on box for conduit ground wire.

SWN (Switching Neutral) Switches have the fuse terminals omitted from the neutral pole and lug for load connection is placed on the blade hinge post of neutral pole. Solderless lugs standard. Machine grey finish.

30 Amperes				Fusible				100 Amperes, cont.			
No.	Each	No. of Poles	VOLTAGE AND MAX. HP. RATING	No.	Each	No. of Poles	VOLTAGE AND MAX. HP. RATING	No.	Each	No. of Poles	VOLTAGE AND MAX. HP. RATING
13221	\$4.50	2	230 A.C., 2 Hp.; 250 D.C., 3 Hp.	40463	\$50.00	4	575 A.C., 30 Hp.	40224	\$27.50	2	230 A.C., 15 Hp.; 250 D.C., 30 Hp.
40221	7.00	2	230 A.C., 2 Hp.; 250 D.C., 5 Hp.	41423	29.00	4SN	230 A.C., 15 Hp.	40324	36.50	3	230 A.C., 30 Hp.
*13321	7.00	3	230 A.C., 3 Hp.	41523	50.00	5SN	115-230 A.C., 20 Hp.	40364	52.50	3	575 A.C., 50 Hp.
40321	8.50	3	230 A.C., 3 Hp.					41324	31.50	3SN	125-250 D.C., 30 Hp.; 230 A.C., 3Φ, 30 Hp.
40361	13.50	3	575 A.C., 7½ Hp.					42324	36.50	3SWN	125-250 D.C., 230 A.C., 30 Hp.
13321SN	6.00	3SN	125-250 D.C., 230 A.C., 3Φ, 3 Hp.	40224	\$27.50	2	230 A.C., 15 Hp.; 250 D.C., 30 Hp.	40424	60.00	4	230 A.C., 30 Hp.
41321	8.00	3SN	125-250 D.C., 5 Hp.; 230 A.C., 3Φ, 3 Hp.	40364	52.50	3	575 A.C., 50 Hp.	40464	71.50	4	575 A.C., 50 Hp.
				41324	31.50	3SN	125-250 D.C., 30 Hp.; 230 A.C., 3Φ, 30 Hp.	41424	44.00	4SN	230 A.C., 30 Hp.
42321	8.50	3SWN	125-250 D.C.; 230 A.C., 3 Hp.	41524	70.00	5SN	115-230 A.C., 30 Hp.	41524	70.00	5SN	115-230 A.C., 30 Hp.
40421	14.50	4	230 A.C., 3 Hp.								
40461	22.50	4	575 A.C., 7½ Hp.	40225	\$80.00	2	250 D.C., 50 Hp.	40225	\$80.00	2	250 D.C., 50 Hp.
41421	10.00	4SN	230 A.C., 3 Hp.	40325	92.50	3	230 A.C., 50 Hp.	40325	92.50	3	230 A.C., 50 Hp.
41521	16.00	5SN	115-230 A.C., 3 Hp.	41325	87.50	3SN	125-250 D.C., 50 Hp.; 230 A.C., 3Φ, 7½ Hp.	41325	87.50	3SN	125-250 D.C., 50 Hp.; 230 A.C., 3Φ, 50 Hp.
								42325	92.50	3SWN	125-250 D.C.; 230 A.C., 50 Hp.
40222	\$11.50	2	60 Amperes 230 A.C., 5 Hp.; 250 D.C., 10 Hp.	40225	\$80.00	2	250 D.C., 50 Hp.	40425	131.50	4	230 A.C., 50 Hp.
40322	12.50	3	230 A.C., 7½ Hp.	40325	92.50	3	230 A.C., 50 Hp.	41425	112.50	4SN	230 A.C., 50 Hp.
40362	17.00	3	575 A.C., 20 Hp.	41325	87.50	3SN	125-250 D.C., 50 Hp.; 230 A.C., 3Φ, 7½ Hp.	41525	163.50	5SN	115-230 A.C., 50 Hp.
41322	11.50	3SN	125-250 D.C., 10 Hp.; 230 A.C., 3Φ, 7½ Hp.								
42322	12.50	3SWN	125-250 D.C.; 230 A.C., 7½ Hp.	40226	\$124.00	2	600 Amperes 250 D.C.	40226	\$124.00	2	250 D.C.
40422	17.00	4	230 A.C., 10 Hp.	40326	144.00	3	230 A.C.	40326	144.00	3	230 A.C.
40462	25.00	4	575 A.C., 20 Hp.	41326	138.00	3SN	125-250 D.C.; 230 A.C.	41326	138.00	3SN	125-250 D.C.; 230 A.C.
41422	14.50	4SN	230 A.C., 7½ Hp.	42326	144.00	3SWN	125-250 D.C.; 230 A.C.	42326	144.00	3SWN	125-250 D.C.; 230 A.C.
41522	25.00	5SN	115-230 A.C., 10 Hp.	40426	207.00	4	230 A.C.	40426	207.00	4	230 A.C.
				41426	197.50	4SN	230 A.C.	41426	197.50	4SN	230 A.C.
40223	\$20.00	2	100 Amperes 230 A.C., 10 Hp.; 250 D.C., 15 Hp.	41526	253.50	5SN	115-230 A.C., 50 Hp.	41526	253.50	5SN	115-230 A.C.
40323	25.00	3	230 A.C., 15 Hp.								
40363	35.00	3	575 A.C., 30 Hp.	40226	\$124.00	2	250 D.C.	40226	\$124.00	2	250 D.C.
41323	20.00	3SN	125-250 D.C., 15 Hp.; 230 A.C., 3Φ, 15 Hp.	40326	144.00	3	230 A.C.	40326	144.00	3	230 A.C.
42323	25.00	3SWN	125-250 D.C.; 230 A.C., 15 Hp.	41326	138.00	3SN	125-250 D.C.; 230 A.C.	41326	138.00	3SN	125-250 D.C.; 230 A.C.
40423	37.50	4	230 A.C., 20 Hp.	42326	144.00	3SWN	125-250 D.C.; 230 A.C.	42326	144.00	3SWN	125-250 D.C.; 230 A.C.
				40426	207.00	4	230 A.C.	40426	207.00	4	230 A.C.
				41426	197.50	4SN	230 A.C.	41426	197.50	4SN	230 A.C.
				41526	253.50	5SN	115-230 A.C., 50 Hp.	41526	253.50	5SN	115-230 A.C.

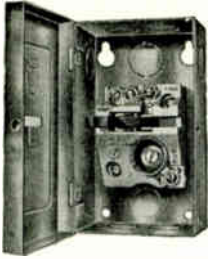
*Can be furnished with switching neutral at same price if desired. Add SWN to number for this type of switch.

Type D Trumbull Enclosed Switches

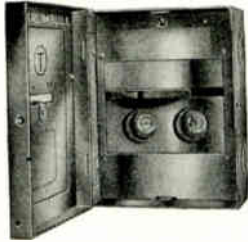
Single Throw Steel Boxes

Top Ends with Conduit K.O.

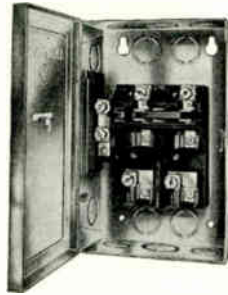
General Purpose N.E.M.A. Type 1 Enclosure



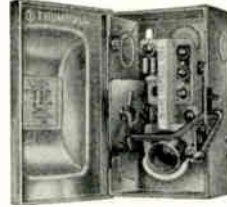
No. 22201



No. 22211-X



No. 22332



No. 24111



No. 23322

Solderless lugs standard. Aluminum finish.

Front Operated

Fusible—Plug Fuses

30 Amperes

No.	Each	No. of Poles	No. of Blades	No. of Fuses	Volts
22211	\$1.70	2	2	2	125-250
*22211X	2.50	2	2	2	125-250
22201	1.60	2SN	1	1	125
*22201X	2.40	2SN	1	1	125
22301	2.00	3SN	2	2	125-250
*22301X	2.80	3SN	2	2	125-250

Fusible—Cartridge Fuses

30 Amperes

22221	\$2.20	2	2	2	250
22321	4.10	3	3	3	230 A.C.
22331	3.40	3SN	2	2	125-250
60 Amperes					
22222	\$6.20	2	2	2	250
22332	6.20	3SN	2	2	125-250, 230 A.C.

Side Operated

No Fuse

30 Amperes

No.	Each	No. of Poles	No. of Blades	No. of Fuses	Volts
12221	\$2.00	2	2	0	250
12321	3.50	3	3	0	230 A.C.
12421	7.00	4	4	0	230 A.C.

60 Amperes

12222	\$5.50	2	2	0	250
12322	7.50	3	3	0	230 A.C.
12422	12.50	4	4	0	230 A.C.

100 Amperes

12223	\$14.00	2	2	0	250
12323	15.00	3	3	0	230 A.C.
12423	26.50	4	4	0	230 A.C.

200 Amperes

12224	\$21.50	2	2	0	250
12324	29.00	3	3	0	230 A.C.
12424	45.00	4	4	0	230 A.C.

400 Amperes

20225	\$56.50	2	2	0	250
20325	71.50	3	3	0	230 A.C.
20425	94.00	4	4	0	230 A.C.

600 Amperes

20226	\$95.00	2	2	0	250
20326	113.00	3	3	0	230 A.C.
20426	188.00	4	4	0	230 A.C.

*Has removable insulated shield over wiring and connections.

†Can be rated 125-250 volts, if required.

‡Base mounted on saddle, entire unit easily removed.

§Switching Neutral can be furnished at 3-pole price, if desired. Add SWN to number for this type of switch.

SN (Solid Neutral) switches are furnished with insulated groundable neutral 30-100 inclusive, 200 amperes and above; insulated neutral only with lug for grounding.

Side Operated

Fusible—Plug Fuses

30 Amperes

No.	Each	No. of Poles	No. of Blades	No. of Fuses	Volts
24211	\$1.70	2	2	2	125-250
23111	1.60	2SN	1	1	125
‡24111	1.60	2SN	1	1	125
24311	3.40	3	3	3	†115 A.C.
23311	2.00	3SN	2	2	125-250

Fusible—Cartridge Fuses

30 Amperes

24221	\$2.20	2	2	2	250
23221	2.20	2SN	1	1	125
§24321	4.10	3	3	3	230 A.C.
23321	3.40	3SN	2	2	125-250, 230 A.C.
24421	7.90	4	4	4	230 A.C.
23421	7.30	4SN	3	3	230 A.C.
23521	10.70	5SN	4	4	115-230 A.C.

60 Amperes

24222	\$6.20	2	2	2	250
§24322	7.90	3	3	3	230 A.C.
23322	6.20	3SN	2	2	125-250, 230 A.C.
24422	14.10	4	4	4	230 A.C.
23422	11.80	4SN	3	3	230 A.C.
23522	18.60	5SN	4	4	115-230 A.C.

100 Amperes

24223	\$15.00	2	2	2	250
§24323	16.50	3	3	3	230 A.C.
23323	15.50	3SN	2	2	125-250, 230 A.C.
24423	30.00	4	4	4	230 A.C.
23423	25.00	4SN	3	3	230 A.C.
23523	39.00	5SN	4	4	115-230 A.C.

200 Amperes

24224	\$25.00	2	2	2	250
§24324	31.50	3	3	3	230 A.C.
23324	27.50	3SN	2	2	125-250, 230 A.C.
24424	56.50	4	4	4	230 A.C.
23424	41.50	4SN	3	3	230 A.C.
23524	66.50	5SN	4	4	115-230 A.C.

400 Amperes

40225	\$80.00	2	2	2	250
40325	92.50	3	3	3	230 A.C.
41325	87.50	3SN	2	2	125-250, 230 A.C.
42325	92.50	3SWN	3	2	125-250, 230 A.C.
40425	131.50	4	4	4	230 A.C.
41425	112.50	4SN	3	3	230 A.C.
41525	163.50	5SN	4	4	115-230 A.C.

600 Amperes

40226	\$124.00	2	2	2	250
40326	144.00	3	3	3	230 A.C.
41326	138.00	3SN	2	2	125-250, 230 A.C.
42326	144.00	3SWN	3	2	125-250, 230 A.C.
40426	207.00	4	4	4	230 A.C.
41426	197.50	4SN	3	3	230 A.C.
41526	253.50	5SN	4	4	115-230 A.C.

Trumbull General Utility Enclosed Circuit Breakers

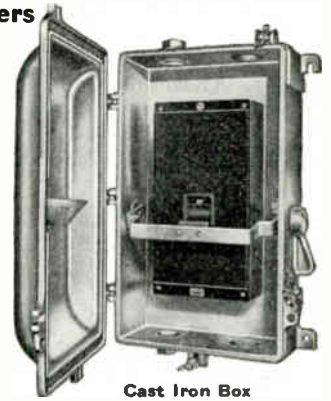
Sheet Steel or Cast Iron Boxes



Sheet Steel Box

Automatic Overload Protection
Surface Type

Steel boxes finished in machine grey; cast iron boxes finished in aluminum.



Cast Iron Box

Sheet Steel Enclosures—Solid Neutral—
With Lugs for Grounded Neutral

Frame Size Amps.	Cap. Amps.	Sheet Steel Dust Resisting Enclosures N.E.M.A. Type 1A 230 V. A.C.—125 V. D.C.				Water Tight Dust Tight Cast Iron Enclosures N.E.M.A. Type 4 230 V. A.C.—125 V. D.C.				Sheet Steel Enclosures—Solid Neutral— With Lugs for Grounded Neutral N.E.M.A. Type 1 230 V. A.C.—125-250 V. A.C., D.C.			
		2-Pole		3-Pole		2-Pole		3-Pole		2-Pole 3W.		3-Pole 4W.	
		No.	Each	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each
50	15	AT21015G	\$17.00	AT31015G	\$23.00	AT21015C	\$34.00	AT31015C	\$48.00	AT21015NS	\$20.00	AT31015NS	\$26.00
	20	AT21020G	17.00	AT31020G	23.00	AT21020C	34.00	AT31020C	48.00	AT21020NS	20.00	AT31020NS	26.00
	25	AT21025G	17.00	AT31025G	23.00	AT21025C	34.00	AT31025C	48.00	AT21025NS	20.00	AT31025NS	26.00
	35	AT21035G	19.00	AT31035G	27.00	AT21035C	36.00	AT31035C	52.00	AT21035NS	22.00	AT31035NS	30.00
	50	AT21050G	19.00	AT31050G	27.00	AT21050C	36.00	AT31050C	52.00	AT21050NS	22.00	AT31050NS	30.00
100	50	AT22050G	46.00	AT32050G	58.00	AT22050C	120.00	AT32050C	132.00	AT22050NS	51.00	AT32050NS	63.00
	70	AT22070G	46.00	AT32070G	58.00	AT22070C	120.00	AT32070C	132.00	AT22070NS	51.00	AT32070NS	63.00
	90	AT22090C	46.00	AT32090G	58.00	AT22090C	120.00	AT32090C	132.00	AT22090NS	51.00	AT32090NS	63.00
	100	AT22100G	46.00	AT32100G	58.00	AT22100C	120.00	AT32100C	132.00	AT22100NS	51.00	AT32100NS	63.00
225	70	AT23070G	121.00	AT33070G	145.00	AT23070C	209.00	AT33070C	233.00	AT23070NS	128.00	AT33070NS	152.00
	90	AT23090G	121.00	AT33090G	145.00	AT23090C	209.00	AT33090C	233.00	AT23090NS	128.00	AT33090NS	152.00
	100	AT23100G	121.00	AT33100G	145.00	AT23100C	209.00	AT33100C	233.00	AT23100NS	128.00	AT33100NS	152.00
	125	AT23125G	121.00	AT33125G	145.00	AT23125C	209.00	AT33125C	233.00	AT23125NS	128.00	AT33125NS	152.00
	150	AT23150G	121.00	AT33150G	145.00	AT23150C	209.00	AT33150C	233.00	AT23150NS	128.00	AT33150NS	152.00
	175	AT23175G	121.00	AT33175G	145.00	AT23175C	209.00	AT33175C	233.00	AT23175NS	128.00	AT33175NS	152.00
	200	AT23200G	121.00	AT33200G	145.00	AT23200C	209.00	AT33200C	233.00	AT23200NS	128.00	AT33200NS	152.00
600	225	AT23225G	121.00	AT33225G	145.00	AT23225C	209.00	AT33225C	233.00	AT23225NS	128.00	AT33225NS	152.00
	225	AT24225G	305.00	AT34225G	380.00	AT24225C	520.00	AT34225C	595.00	AT24225NS	314.00	AT34225NS	389.00
	250	AT24250G	305.00	AT34250G	380.00	AT24250C	520.00	AT34250C	595.00	AT24250NS	314.00	AT34250NS	389.00
	275	AT24275G	305.00	AT34275G	380.00	AT24275C	520.00	AT34275C	595.00	AT24275NS	314.00	AT34275NS	389.00
	300	AT24300G	305.00	AT34300G	380.00	AT24300C	520.00	AT34300C	595.00	AT24300NS	314.00	AT34300NS	389.00
	325	AT24325G	305.00	AT34325G	380.00	AT24325C	520.00	AT34325C	595.00	AT24325NS	314.00	AT34325NS	389.00
	350	AT24350G	305.00	AT34350G	380.00	AT24350C	520.00	AT34350C	595.00	AT24350NS	314.00	AT34350NS	389.00
	400	AT24400G	305.00	AT34400G	380.00	AT24400C	520.00	AT34400C	595.00	AT24400NS	314.00	AT34400NS	389.00
	450	AT24450G	348.00	AT34450G	437.00	AT24450C	563.00	AT34450C	652.00	AT24450NS	357.00	AT34450NS	446.00
	500	AT24500G	348.00	AT34500G	437.00	AT24500C	563.00	AT34500C	652.00	AT24500NS	357.00	AT34500NS	446.00
	550	AT24550G	348.00	AT34550G	437.00	AT24550C	563.00	AT34550C	652.00	AT24550NS	357.00	AT34550NS	446.00
600	AT24600G	348.00	AT34600G	437.00	AT24600C	563.00	AT34600C	652.00	AT24600NS	357.00	AT34600NS	446.00	
600 V. A.C.—250 V. D.C.						600 V. A.C.—250 V. D.C.							
50	15	AT25015G	34.00	AT35015G	41.00	AT25015C	65.00	AT35015C	72.00				
	20	AT25020G	34.00	AT35020G	41.00	AT25020C	65.00	AT35020C	72.00				
	25	AT25025G	34.00	AT35025G	41.00	AT25025C	65.00	AT35025C	72.00				
	35	AT25035G	36.00	AT35035G	45.00	AT25035C	67.00	AT35035C	76.00				
	50	AT25050G	36.00	AT35050G	45.00	AT25050C	67.00	AT35050C	76.00				
100	50	AT26050G	55.00	AT36050G	71.00	AT26050C	129.00	AT36050C	145.00				
	70	AT26070G	55.00	AT36070G	71.00	AT26070C	129.00	AT36070C	145.00				
	90	AT26090G	55.00	AT36090G	71.00	AT26090C	129.00	AT36090C	145.00				
	100	AT26100G	55.00	AT36100G	71.00	AT26100C	129.00	AT36100C	145.00				
225	70	AT27070G	142.00	AT37070G	174.00	AT27070C	230.00	AT37070C	262.00				
	90	AT27090G	142.00	AT37090G	174.00	AT27090C	230.00	AT37090C	262.00				
	100	AT27100G	142.00	AT37100G	174.00	AT27100C	230.00	AT37100C	262.00				
	125	AT27125G	142.00	AT37125G	174.00	AT27125C	230.00	AT37125C	262.00				
	150	AT27150G	142.00	AT37150G	174.00	AT27150C	230.00	AT37150C	262.00				
	175	AT27175G	142.00	AT37175G	174.00	AT27175C	230.00	AT37175C	262.00				
	200	AT27200G	142.00	AT37200G	174.00	AT27200C	230.00	AT37200C	262.00				
600	225	AT27225G	142.00	AT37225G	174.00	AT27225C	230.00	AT37225C	262.00				
	225	AT28225G	325.00	AT38225G	409.00	AT28225C	540.00	AT38225C	624.00				
	250	AT28250G	325.00	AT38250G	409.00	AT28250C	540.00	AT38250C	624.00				
	275	AT28275G	325.00	AT38275G	409.00	AT28275C	540.00	AT38275C	624.00				
	300	AT28300G	325.00	AT38300G	409.00	AT28300C	540.00	AT38300C	624.00				
	325	AT28325G	325.00	AT38325G	409.00	AT28325C	540.00	AT38325C	624.00				
	350	AT28350G	325.00	AT38350G	409.00	AT28350C	540.00	AT38350C	624.00				
	400	AT28400G	325.00	AT38400G	409.00	AT28400C	540.00	AT38400C	624.00				
	450	AT28450G	368.00	AT38450G	465.00	AT28450C	583.00	AT38450C	680.00				
	500	AT28500G	368.00	AT38500G	465.00	AT28500C	583.00	AT38500C	680.00				
	550	AT28550G	368.00	AT38550G	465.00	AT28550C	583.00	AT38550C	680.00				
600	AT28600G	368.00	AT38600G	465.00	AT28600C	583.00	AT38600C	680.00					

Frame Size Amps.	Additions for Solderless Lugs		
	Voltage	2-Pole per Breaker	3-Pole per Breaker
*50	250	.....	.....
*50	600	\$2.00	\$3.00
100	250 or 600	3.60	5.40
225	250 or 600	7.00	10.50
600	250 or 600	24.00	36.00

*Washer head screws furnished for 15, 20, 25 and 35 ampere breaker ratings.

Flush Mounting
Flush Mounting is available. Prices upon request.

Pilot Lights
Furnished on breakers with grounded neutral, if specified on order.

Cast Aluminum Enclosures
Cast Aluminum Enclosures available. Prices upon request.

Frame Size Amps.	Single Pole—Dust Resisting Enclosures N.E.M.A. Type 1A 125 V. D.C., 250 V. A.C.		
	Cap. Amps.	No.	Each
50	15	AT11015G	\$11.00
	20	AT11020G	11.00
	25	AT11025G	11.00
	35	AT11035G	12.00
	50	AT11050G	12.00

Type T. T. Trumbull Manual Starters

Steel Boxes

Thermostatic Overload Protection
Interchangeable Heaters
Across-the Line Type



Surface Type



Starter Unit Only

Baked aluminum finish.

KNOCKOUTS.—Surface type, one 1/2x3/4-inch in each end and two 1/2-inch in rear and sides.

Carton, 10. Weight of carton—surface type, 17 pounds; starter unit only, 8 pounds.

Hp. Ratings

Volts.....	A.C.		D.C.		
	115	230	32	125	250
Single Pole.....	1	1	1/4	3/4	1 1/8
Double Pole.....	1	1	1/4	1	1

Surface Type Complete		Starter Units Only				Heaters Only	
A.C. or D.C.		A.C. or D.C.		A.C. or D.C.		No.	
Amps.	No.	Single Pole	Double Pole	Single Pole	Double Pole	No.	Each
1800	\$1.75	1900	\$2.00	1800-S	\$1.35	1900-S	\$1.60

*With Heater										
.5	1800-5	\$2.25	1900-5	\$2.50	1800-5S	\$1.85	1900-5S	\$2.10	9700-5	\$5.50
.7	1800-7	2.25	1900-7	2.50	1800-7S	1.85	1900-7S	2.10	9700-7	.50
1.	1801	2.25	1901	2.50	1801-S	1.85	1901-S	2.10	9701	.50
1.5	1801-5	2.25	1901-5	2.50	1801-5S	1.85	1901-5S	2.10	9701-5	.50
2.	1802	2.25	1902	2.50	1802-S	1.85	1902-S	2.10	9702	.50
2.5	1802-5	2.25	1902-5	2.50	1802-5S	1.85	1902-5S	2.10	9702-5	.50
3.	1803	2.25	1903	2.50	1803-S	1.85	1903-S	2.10	9703	.50
3.5	1803-5	2.25	1903-5	2.50	1803-5S	1.85	1903-5S	2.10	9703-5	.50
4.	1804	2.25	1904	2.50	1804-S	1.85	1904-S	2.10	9704	.50
4.5	1804-5	2.25	1904-5	2.50	1804-5S	1.85	1904-5S	2.10	9704-5	.50
5.	1805	2.25	1905	2.50	1805-S	1.85	1905-S	2.10	9705	.50
6.	1806	2.25	1906	2.50	1806-S	1.85	1906-S	2.10	9706	.50
7.	1807	2.25	1907	2.50	1807-S	1.85	1907-S	2.10	9707	.50
8.	1808	2.25	1908	2.50	1808-S	1.85	1908-S	2.10	9708	.50
9.	1809	2.25	1909	2.50	1809-S	1.85	1909-S	2.10	9709	.50
10.	1810	2.25	1910	2.50	1810-S	1.85	1910-S	2.10	9710	.50
12.	1812	2.25	1912	2.50	1812-S	1.85	1912-S	2.10	9712	.50

*One heater required for each starter, either single or double-pole. In ordering heaters only, or starters with heaters, select the heater rated nearest to the ampere rating indicated on the motor nameplate.

Complete installation instructions furnished with each heater.

No. 1199 Trumbull Flush Covers

For starter unit only.

Fits standard wall box.

No. 1199.....each \$.25

Type RB Trumbull Tumbler Motor Control Manual Starters

Steel Box

Without Overload Protection
Across-the-Line Type



Particularly adapted for use with small motor-driven machines, and automatic apparatus, such as oil burners, refrigerators, etc., either as control or as a positive disconnect.

Also used on lighting circuits and Type C Lamps.

Nos. 3228 and 3328 fit into any standard deep wall box. Plate size, 3 1/8 inches wide x 4 1/16 inches high.

Plate size of No. 3361, 5 5/8 inches wide x 7 5/8 inches high.

Baked aluminum finish.

2-Pole

30 Amperes, 250 Volts; 5 Amperes, 600 Volts
2 Hp., 250 Volts; 1 Hp., 600 Volts, D.C. 2 Hp., 600 Volts A.C.

KNOCKOUTS.—one 1/2x3/4-inch in each end, and two 1/2-inch in rear and sides.

No.	Each	Type	DIMENSIONS, INCHES			Car- ton	Std. Pkg.
			Width	Height	Depth		
2228	\$2.70	Surface	2 1/16	4	3	10	50
3228	2.40	Flush	...	...	...	10	50
2228F	4.70	Float	2 1/16	4	3	10	50
2228S	1.90	Switch Unit	...	...	...	10	50
*2227S	1.90	Switch Unit	...	...	...	10	50

3-Pole

30 Amperes, 250 Volts; 5 Amperes, 600 Volts
2 Hp., 600 Volts A.C.

KNOCKOUTS.—one 1/2x3/4-inch in each end, and two 1/2x3/4-inch in each side and rear.

2361	\$6.80	Surface	4 5/16	6 5/16	3 1/4	1	10
3361	7.90	Flush	4 5/16	6 1/2	2 3/16	1	10
2361F	9.00	Float	...	...	...	1	10
†2361S	5.80	Switch Unit	...	...	...	1	10

3-Way

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

KNOCKOUTS.—one 1/2x3/4-inch in each end, and two 1/2-inch in rear and sides.

2328	\$2.70	Surface	2 1/16	4	3	10	50
3328	2.40	Flush	...	...	...	10	50
2328F	4.70	Float	2 1/16	4	3	10	50
2328S	1.90	Switch Unit	...	...	...	10	50

4-Pole

30 Amperes, 250 Volts; 5 Amperes, 600 Volts
2 Hp., 250 Volts; 1 Hp., 600 Volts, D.C.; 2 Hp., 600 Volts, A.C.

2428	\$10.10	Surface	6 5/16	4 5/16	2 3/16	10	10
2428F	12.40	Float	...	...	...	10	10

*For type FS shallow cast fittings. (Appleton, Crouse-Hinds, Pyle-National, V. V. Fittings).

†May be used with either flush or surface Trumbull Boxes.

**H & H Type NF Line Starting Switches
Surface Type—For Small Motors**

Quick Make and Quick Break
No. 6808: Double Pole, Single Phase, 2 Hp. 115-600 Volts
30 Amperes, 250 Volts; 20 Amperes, 600 Volts
No. 7808: Three Pole, Three Phase, 2 Hp. 230, 460, 575 Volts A.C.;
30 Amperes, 250 Volts; 20 Amperes, 600 Volts
Listed as Standard by Underwriters' Laboratories, Inc.

This tumbler switch gives positive control for motors and is especially suitable for oil burners, refrigerators, motor driven machinery and lighting loads.

No fuses or overload protection is provided for. Box is made of pressed metal. Standard finish, cadmium.

This switch passed the stalled rotor test which is six times the normal full motor load.



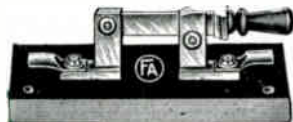
No. 6808

No.	6808	7808
Each	\$2.70	6.80
Box No.....	34	35
Weight.....	pounds 1 1/2	2

FA Type A Knife Switches

High Grade Milled-In Clip
Without Fuse Connections

Front Connection—Satin Finish
On Dead Black Finish Slate Bases



SINGLE-POLE

250 Volts D.C. or
500 Volts A.C.

Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3310	30	2½	\$3.30
A 3510	30	3	3.90
A 6310	60	3	4.30
A 10310	100	4½	5.50
A 20310	200	8	8.00
A 40310	400	15½	15.20
A 60310	600	23	22.50
A 80310	800	37	46.20
A100310	1000	40½	53.90
A120310	1200	45	81.80

Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3310T	30	3	\$4.50
A 3510T	30	4	5.50
A 6310T	60	5	6.10
A 10310T	100	7	7.60
A 20310T	200	10	11.70
A 40310T	400	20	23.50
A 60310T	600	30	37.20
A 80310T	800	47½	67.40
A100310T	1000	52	81.80
A120310T	1200	54½	97.10

DOUBLE POLE

250 Volts D.C. or
500 Volts A.C.



Single-Throw

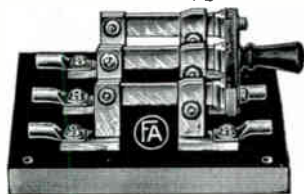
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3320	30	3¾	\$6.00
A 3520	30	4	7.00
A 6320	60	5	7.80
A 10320	100	8¾	9.70
A 20320	200	16	14.90
A 40320	400	29	28.20
A 60320	600	37	43.10
A 80320	800	63	89.60
A100320	1000	69	105.80
A120320	1200	76½	129.00

Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3320T	30	5	\$8.30
A 3520T	30	7	10.50
A 6320T	60	8	11.60
A 10320T	100	11½	14.60
A 20320T	200	17	22.30
A 40320T	400	33½	44.90
A 60320T	600	50	71.50
A 80320T	800	79	131.00
A100320T	1000	87	157.20
A120320T	1200	91	193.80

3-POLE

250 Volts D.C. or
500 Volts A.C.



Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3330	30	4½	\$8.40
A 3530	30	7½	10.10
A 6330	60	7½	11.10
A 10330	100	12½	14.20
A 20330	200	22½	21.60
A 40330	400	43½	42.20
A 60330	600	51	63.50
A 80330	800	84	133.20
A100330	1000	94	157.10
A120330	1200	109	192.30

Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3330T	30	7½	\$12.00
A 3530T	30	12	15.40
A 6330T	60	12	17.10
A 10330T	100	18	21.40
A 20330T	200	25	33.50
A 40330T	400	50	66.70
A 60330T	600	75	106.00
A 80330T	800	118	191.90
A100330T	1000	130	235.00
A120330T	1200	136	288.30

4-POLE

250 Volts D.C. or 500 Volts A.C.

Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3340	30	6	\$11.00
A 3540	30	13	13.60
A 6340	60	13	15.10
A 10340	100	20¼	18.60
A 20340	200	33	29.70
A 40340	400	56	57.00
A 60340	600	78	85.50
A 80340	800	124	176.90
A100340	1000	137	208.20
A120340	1200	157	256.20

Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3340T	30	10	\$15.80
A 3540T	30	16	20.60
A 6340T	60	16	22.80
A 10340T	100	23	28.70
A 20340T	200	34	44.60
A 40340T	400	67	89.40
A 60340T	600	100	143.50
A 80340T	800	158	261.10
A100340T	1000	174	312.50
A120340T	1200	182	383.80

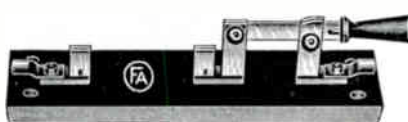
*For 250 volts, d.c. only.

FA Type A Knife Switches

High Grade Milled-In Clip

With Cartridge Fuse Connections at Hinge End

Front Connection—Satin Finish
On Dead Black Finish Bases



SINGLE-POLE

250 Volts D.C.
or A.C.

Single-Throw

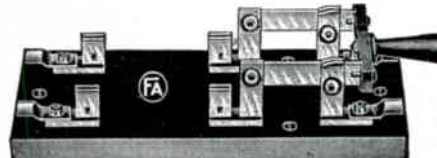
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3311	30	3	\$3.80
A 6311	60	6	5.20
A 10311	100	8½	7.60
A 20311	200	18	11.00
A 40311	400	25	19.90
A 60311	600	34½	30.60
A 80311	800	56	65.40
A100311	1000	62½	83.80
A120311	1200	70	98.60

Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3311T	30	5¼	\$5.60
A 6311T	60	8	8.30
A 10311T	100	13½	12.80
A 20311T	200	22½	19.40
A 40311T	400	43	33.00
A 60311T	600	59	54.20
A 80311T	800	66	107.40
A100311T	1000	70	136.90
A120311T	1200	73	159.40

DOUBLE-POLE

250 Volts D.C.
or A.C.



Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3322	30	5	\$7.00
A 6322	60	8¼	9.40
A 10322	100	14	14.10
A 20322	200	26	20.80
A 40322	400	44½	38.90
A 60322	600	67	58.60
A 80322	800	99	128.90
A100322	1000	110	164.00
A120322	1200	122	193.70

Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3322T	30	8¾	\$11.10
A 6322T	60	13½	16.60
A 10322T	100	22½	24.90
A 20322T	200	34	36.60
A 40322T	400	72	63.00
A 60322T	600	99	106.40
A 80322T	800	110	209.40
A100322T	1000	117	266.30
A120322T	1200	122	311.80

Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3333	30	7½	\$9.80
A 6333	60	12¾	13.90
A 10333	100	20	20.60
A 20333	200	35	30.40
A 40333	400	69½	57.10
A 60333	600	87	86.20
A 80333	800	145	192.70
A100333	1000	160	243.00
A120333	1200	177	287.80

Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3333T	30	13	\$16.60
A 6333T	60	20	25.10
A 10333T	100	33	36.90
A 20333T	200	51	53.80
A 40333T	400	108	94.40
A 60333T	600	148	156.80
A 80333T	800	165	311.60
A100333T	1000	175	395.40
A120333T	1200	183	471.00

4-POLE

250 Volts D.C. or A.C.

Single-Throw

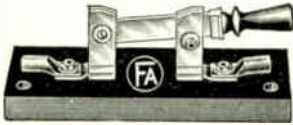
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3344	30	10	\$13.00
A 6344	60	18	18.60
A 10344	100	34	28.00
A 20344	200	60	41.70
A 40344	400	109	77.90
A 60344	600	144	117.40
A 80344	800	212	256.00
A100344	1000	235	323.70
A120344	1200	265	383.00

Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3344T	30	17½	\$21.80
A 6344T	60	27	33.60
A 10344T	100	45	48.40
A 20344T	200	68	72.90
A 40344T	400	144	125.40
A 60344T	600	198	206.40
A 80344T	800	220	413.60
A100344T	1000	234	531.20
A120344T	1200	244	625.60

NOTE.—Double-throw switches will be furnished with fuse connections at both ends.

FA Type F Knife Switches



Formed Clip
Single-Pole—Unfusible
 Front Connection—Plain Finish
 250 Volts D.C.
 or
 500 Volts A.C.

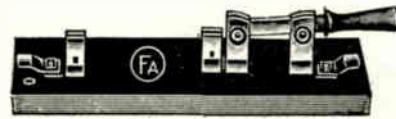
Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3310	30	1½	\$1.80
F 3510	30	2½	2.40
F 6310	60	2½	2.60
F10310	100	4	3.40
F20310	200	7	5.40

Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3310T	30	3	\$2.20
F 3510T	30	4½	3.10
F 6310T	60	4½	3.40
F10310T	100	6¼	4.40
F20310T	200	12½	7.80

FA Type F Knife Switches



Formed Clip
Single-Pole—Fusible at Bottom
 Front Connection Plain Finish
 250 Volts D.C.
 or A.C.

Single-Throw

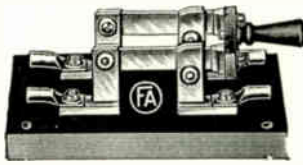
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3311	30	2¾	\$2.20
F 6311	60	4½	3.40
F10311	100	7¼	4.20
F20311	200	11¾	7.00

Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3311T	30	5¼	\$3.00
F 6311T	60	7¾	4.80
F10311T	100	12½	6.90
F20311T	200	20	12.40

FA Type F Knife Switches

Formed Clip
Double-Pole—Unfusible
 Front Connection—Plain Finish
 250 Volts D.C.
 or
 500 Volts A.C.



Single-Throw

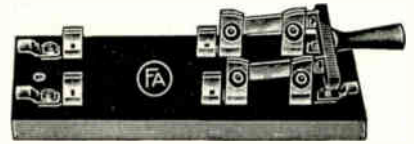
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3320	30	2½	\$2.50
F 3520	30	4¼	3.80
F 6320	60	4¼	4.20
F10320	100	8½	5.20
F20320	200	15½	9.50

Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3320T	30	4¾	\$3.50
F 3520T	30	7¾	5.40
F 6320T	60	7¾	6.00
F10320T	100	13	8.00
F20320T	200	25	14.20

FA Type F Knife Switches

Formed Clip
Double-Pole—Fusible at Bottom
 Front Connection Plain Finish
 250 Volts D.C.
 or A.C.



Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3322	30	4½	\$3.40
F 6322	60	7½	5.40
F10322	100	13½	7.20
F20322	200	25	12.50

Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3322T	30	8¾	\$5.50
F 6322T	60	12½	9.30
F10322T	100	26½	13.00
F20322T	200	37½	22.50

FA Type F Knife Switches



Formed Clip
3-Pole—Unfusible
 Front Connection—Plain Finish
 250 Volts D.C.
 or
 500 Volts A.C.

Single-Throw

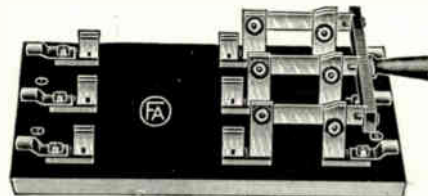
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3330	30	3¾	\$3.80
F 3530	30	6¼	5.40
F 6330	60	6¼	6.00
F10330	100	11½	7.70
F20330	200	22½	14.00

Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3330T	30	7	\$5.00
F 3530T	30	11½	8.00
F 6330T	60	11½	8.90
F10330T	100	17½	12.20
F20330T	200	32	21.90

FA Type F Knife Switches

Formed Clip
3-Pole—Fusible at Bottom
 Front Connection Plain Finish
 250 Volts D.C.
 or A.C.



Single-Throw

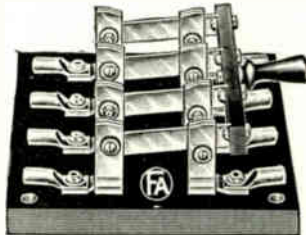
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3333	30	6½	\$4.60
F 6333	60	11	8.10
F10333	100	19½	10.60
F20333	200	35	19.20

Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3333T	30	13	\$8.40
F 6333T	60	18½	14.30
F10333T	100	37½	19.50
F20333T	200	59½	33.40

FA Type F Knife Switches

Formed Clip
4-Pole—Unfusible
 Front Connection—Plain Finish
 250 Volts D.C.
 or
 500 Volts A.C.



Single-Throw

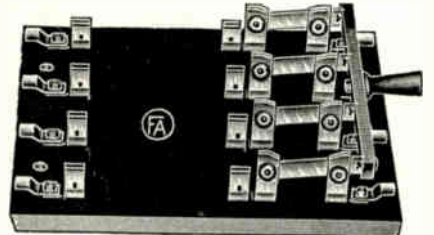
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3340	30	6½	\$4.60
F 3540	30	12	7.00
F 6340	60	12	7.80
F10340	100	19½	10.50
F20340	200	32½	18.30

Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3340T	30	11½	\$6.60
F 3540T	30	20	10.60
F 6340T	60	20	11.80
F10340T	100	29	16.20
F20340T	200	45½	29.00

FA Type F Knife Switches

Formed Clip
4-Pole Fusible at Bottom
 Front Connection Plain Finish
 250 Volts D.C.
 or A.C.



Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3344	30	9	\$5.90
F 6344	60	17	10.50
F10344	100	32½	14.70
F20344	200	57	25.70

Double-Throw

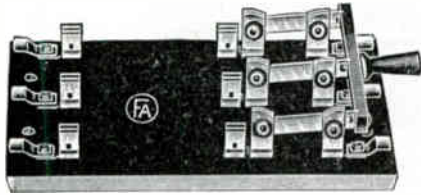
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3344T	30	18	\$11.00
F 6344T	60	30	19.20
F10344T	100	67½	25.40
F20344T	200	97	45.40

NOTE.—Double-throw switches will be furnished with fuse connections at both ends.

*For 250 volts d.c. only.

FA Type F Knife Switches

Formed Clip
With Cartridge Fuse Connections at Hinge End
Front Connection—Plain Finish
On Dead Black Finish Bases



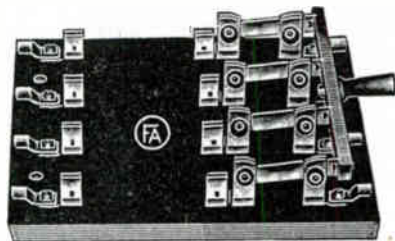
3-POLE

500 Volts A.C.
with 600-Volt
Fuse Connection

Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3533	30	11½	\$8.30	F 3533T	30	20	\$13.80
F 6533	60	15	9.90	F 6533T	60	20½	17.40
F10533	100	23	13.00	F10533T	100	38	20.80
F20533	200	35½	21.40	F20533T	200	61	36.10

4-POLE

500 Volts A.C.
with 600-Volt
Fuse Connection

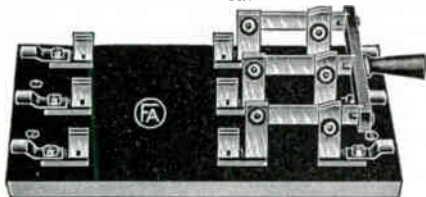


Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3544	30	20	\$11.60	F 3544T	30	34½	\$20.90
F 6544	60	29½	13.70	F 6544T	60	52	24.60
F10544	100	44	17.00	F10544T	100	94½	27.60
F20544	200	70	28.70	F20544T	200	117	47.40

Single and double-pole made to order at special prices.
Double-throw switches will be furnished with fuse connections at both ends.

FA Type A Knife Switches

High Grade Milled In Clip
With Cartridge Fuse Connections at Hinge End
Front Connection—Satin Finish
On Dead Black Finish Bases



500 Volts A.C.
with 600-Volt
Fuse Connection

Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3533	30	13¾	\$14.10	A 3533T	30	31	\$20.60
A 6533	60	15½	14.30	A 6533T	60	41	25.90
A 10533	100	25	22.20	A 10533T	100	43	37.80
A 20533	200	36	31.90	A 20533T	200	71	56.20
A 40533	400	72½	57.50	A 40533T	400	135	97.40
A 60533	600	94	89.00	A 60533T	600	184	159.20
A 80533	800	157	197.00	A 80533T	800	235	318.90
A100533	1000	174	247.40	A100533T	1000	255	409.60
A120533	1200	188	293.60	A120533T	1200	275	478.60

3-POLE

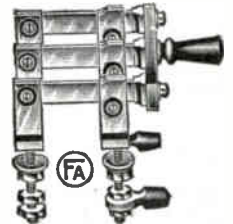
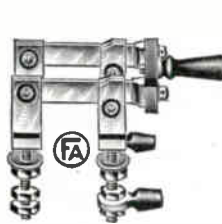
Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3544	30	17½	\$19.40	A 3544T	30	42	\$33.60
A 6544	60	27½	19.70	A 6544T	60	55	34.80
A 10544	100	39	29.50	A 10544T	100	87	49.60
A 20544	200	61	43.00	A 20544T	200	107	74.50
A 40544	400	105	79.00	A 40544T	400	184	125.10
A 60544	600	132	119.30	A 60544T	600	214	212.20
A 80544	800	203	262.60	A 80544T	800	304	431.70
A100544	1000	225	335.00	A100544T	1000	348	546.00
A120544	1200	247	394.40	A120544T	1200	392	637.90

Single and double-pole made to order at special prices.

Double-throw switches will be furnished with fuse connections at both ends.

FA Type B Knife Switches

High Grade Milled In Clip
Without Fuse Connections
Back Connection—Satin Finish—Unmounted
250 Volts D.C. or 500 Volts A.C.



SINGLE-POLE

Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*B 3310	30	1	\$3.00	*B 3310T	30	1¼	\$4.30
B 3510	30	1¼	3.40	B 3510T	30	1½	4.70
B 6310	60	1¼	3.80	B 6310T	60	1½	5.30
B 10310	100	2½	5.00	B 10310T	100	3	6.80
B 20310	200	4½	7.80	B 20310T	200	5½	11.00
B 40310	400	9½	14.70	B 40310T	400	11½	20.40
B 60310	600	15	22.40	B 60310T	600	19	31.20
B 80310	800	18	47.10	B 80310T	800	23	69.70
B100310	1000	20	58.70	B100310T	1000	26	88.40
B120310	1200	26½	70.20	B120310T	1200	41	104.60
†B150310	1500	31	88.40	†B150310T	1500	61	133.90
†B200310	2000	47	111.50	†B200310T	2000	80½	170.20

DOUBLE-POLE

Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*B 3320	30	1½	\$6.20	*B 3320T	30	1¾	\$7.80
B 3520	30	2	6.60	B 3520T	30	2½	9.30
B 6320	60	2	7.40	B 6320T	60	2½	10.30
B 10320	100	4	9.50	B 10320T	100	5	13.30
B 20320	200	7½	15.40	B 20320T	200	9	21.40
B 40320	400	16	28.70	B 40320T	400	19	40.10
B 60320	600	25	43.70	B 60320T	600	32	61.30
B 80320	800	30	92.70	B 80320T	800	38	137.90
B100320	1000	33	116.70	B100320T	1000	43	174.60
B120320	1200	44	139.10	B120320T	1200	68	209.00
†B150320	1500	52	174.80	†B150320T	1500	102	265.80
†B200320	2000	78	221.00	†B200320T	2000	134	338.60

3-POLE

Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*B 3330	30	2¼	\$8.90	*B 3330T	30	2½	\$12.20
B 3530	30	3	9.80	B 3530T	30	3¼	13.90
B 6330	60	3	10.90	B 6330T	60	3¼	15.40
B 10330	100	6	13.80	B 10330T	100	7½	19.50
B 20330	200	11	22.60	B 20330T	200	13½	31.70
B 40330	400	24	42.40	B 40330T	400	28½	59.40
B 60330	600	37	64.00	B 60330T	600	48	90.50
B 80330	800	45	138.20	B 80330T	800	57	206.00
B100330	1000	50	173.50	B100330T	1000	65	260.20
B120330	1200	66	206.60	B120330T	1200	102	311.00
†B150330	1500	79	260.40	†B150330T	1500	153	397.00
†B200330	2000	116	329.50	†B200330T	2000	200	505.90

4-POLE

Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*B 3340	30	3	\$11.80	*B 3340T	30	4½	\$16.40
B 3540	30	4	13.20	B 3540T	30	5	18.60
B 6340	60	4	14.60	B 6340T	60	5	20.70
B 10340	100	8	18.50	B 10340T	100	10	26.00
B 20340	200	15	30.20	B 20340T	200	18	42.50
B 40340	400	32	57.10	B 40340T	400	38	79.80
B 60340	600	50	86.20	B 60340T	600	64	121.30
B 80340	800	60	184.00	B 80340T	800	76	255.90
B100340	1000	66	230.60	B100340T	1000	86	346.60
B120340	1200	88	275.00	B120340T	1200	136	415.00
†B150340	1500	104	345.90	†B150340T	1500	204	528.20
†B200340	2000	156	438.00	†B200340T	2000	268	673.30

*For 250 volts d.c. only.

†Give size wire used so proper size lugs can be sent.

For switches mounted on slate or wood templates, add 50% up to 200 amperes, and 25% for everything over.

For polished finish, add 25%

Unless otherwise specified, all switches will be furnished for 1½-inch panel mounting.

FA Type B Knife Switches

High Grade Milled In Clip
With Cartridge Fuse Connections at Hinge End
Back Connection—Satin Finish—Unmounted



SINGLE POLE

250 Volts D.C.
or A.C.

Single-Throw

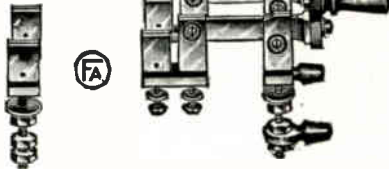
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3311	30	1	\$3.40
B 6311	60	1½	4.20
B 10311	100	3	6.70
B 20311	200	5½	10.10
B 40311	400	11½	18.90
B 60311	600	18	28.80
B 80311	800	27½	62.70
B100311	1000	30½	78.20
B120311	1200	44½	91.70

Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3311T	30	1¼	\$4.90
B 6311T	60	1¾	6.20
B 10311T	100	3¾	10.30
B 20311T	200	8	15.70
B 40311T	400	15	28.70
B 60311T	600	23	44.90
B 80311T	800	33	106.30
B100311T	1000	36	133.40
B120311T	1200	65	159.90

DOUBLE POLE

250 Volts D.C.
or A.C.

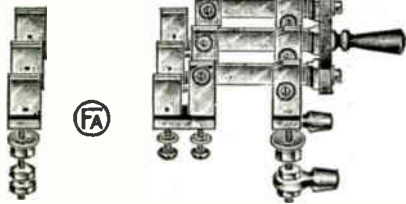


Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3322	30	1¾	\$6.70
B 6322	60	2½	8.50
B 10322	100	5¼	13.20
B 20322	200	9	19.80
B 40322	400	19	37.00
B 60322	600	30	56.50
B 80322	800	46	123.10
B100322	1000	51	153.80
B120322	1200	74	181.20

Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3322T	30	2	\$9.70
B 6322T	60	3	12.80
B 10322T	100	6¼	20.30
B 20322T	200	13	31.00
B 40322T	400	25	56.70
B 60322T	600	39	88.60
B 80322T	800	55	209.50
B100322T	1000	61	263.90
B120322T	1200	109	317.50



3-POLE

250 Volts D.C.
or A.C.

Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3333	30	2¾	\$9.80
B 6333	60	3½	12.40
B 10333	100	8	19.40
B 20333	200	13½	29.10
B 40333	400	28½	54.80
B 60333	600	45	83.30
B 80333	800	69	183.80
B100333	1000	76	229.00
B120333	1200	111	270.20

Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3333T	30	3	\$14.20
B 6333T	60	4½	18.40
B 10333T	100	9½	30.00
B 20333T	200	19½	45.90
B 40333T	400	37	84.00
B 60333T	600	59	135.40
B 80333T	800	82	313.40
B100333T	1000	91	393.80
B120333T	1200	163	474.70

4-POLE

250 Volts D.C. or A.C.

Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3344	30	2½	\$13.00
B 6344	60	5	16.80
B 10344	100	10½	25.80
B 20344	200	18	38.70
B 40344	400	38	73.70
B 60344	600	60	111.80
B 80344	800	92	243.90
B100344	1000	102	304.60
B120344	1200	148	359.30

Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3344T	30	4	\$19.00
B 6344T	60	6	24.80
B 10344T	100	12½	40.00
B 20344T	200	26	61.10
B 40344T	400	50	121.00
B 60344T	600	78	183.90
B 80344T	800	110	416.40
B100344T	1000	122	516.30
B120344T	1200	218	632.00

For switches on slate or wood template, add 25%. For polished finish, add 25%. Unless otherwise specified, all switches will be furnished for 1½-inch panel mounting.

Double-throw switches will be furnished with fuse connections at both ends.

Type A Trumbull Open Knife Switches

Single Throw—Front Connected
No Fuse
250 Volts D.C.,—250 and 500 Volts A.C.
Brush Finish



2-Pole

Cap. Amps.	1-Pole		2-Pole		3-Pole	
	No.	Each	No.	Each	No.	Each
*30	3721	\$1.70	3801	\$2.50	3881	\$3.80
30	3721½	2.30	3801½	3.40	3881½	5.10
60	3722	2.50	3802	3.70	3882	5.60
100	3724	4.70	3804	7.10	3884	10.70
200	3726	7.30	3806	10.90	3886	16.40
400	3729	17.00	3809	25.50	3889	38.50
600	3731	24.30	3811	36.50	3891	55.00
800	3732	42.00	3812	63.00	3892	94.50
1200	3734	57.50	3814	86.00	3894	129.00
1600	3735½	109.00	3815½	163.00	3895½	245.00
2000	3736	121.00	3816	181.00	3896	272.00

*For 250 volts only.

Type A Trumbull Open Knife Switches

Single Throw—Front Connected
Fusible
250 Volts D.C. and A.C.
High Posts—Brush Finish



2-Pole

Cap. Amps.	1-Pole		2-Pole		3-Pole	
	No.	Each	No.	Each	No.	Each
30	4361	\$2.50	4381	\$3.70	4401	\$5.60
60	4362	3.70	4382	5.50	4402	8.30
100	4364	7.00	4384	10.50	4404	15.80
200	4366	10.80	4386	16.20	4406	24.30
400	4368	24.30	4388	36.50	4408	55.00
600	4370	34.50	4390	51.50	4410	77.50
800	4371	55.50	4391	83.00	4411	125.00
1200	4373	74.50	4393	112.00	4413	168.00

Type C Trumbull Open Knife Switches

Single Throw—Front Connected
Plain Finish
No Fuse
250 Volts, D.C.; 500 Volts, A.C.—Low Posts



2-Pole

Cap. Amps.	1-Pole		2-Pole		3-Pole	
	No.	Each	No.	Each	No.	Each
*30	3001	\$0.70	3041	\$1.10	3081	\$1.70
30	3002	1.10	3042	1.70	3082	2.60
60	3003	1.30	3043	2.00	3083	3.00
100	3005	2.70	3045	4.00	3085	6.00
200	3006	4.90	3046	7.30	3086	11.00

Fusible
250 Volts, D.C. and A.C.—High Posts



2-Pole

Cap. Amps.	No.	Each	No.	Each	No.	Each
30	1120	\$1.10	1130	\$1.70	1140	\$2.60
60	1121	1.90	1131	2.90	1141	4.40
100	1123	3.90	1133	5.90	1143	8.90
200	1124	7.30	1134	10.90	1144	16.40

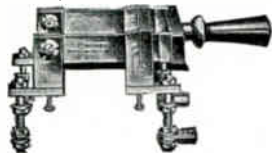
*For 250 volts only.

Type A Trumbull Open Knife Switches

Single Throw—Back Connected
Polished Finish

No Fuse

250 Volts, A.C. or D.C.; 500 Volts A.C.



2-Pole

Cap. Amps.	1-Pole		2-Pole		3-Pole	
	No.	Each	No.	Each	No.	Each
*30	3761	\$2.00	3841	\$3.70	3921	\$5.60
30	3761½	3.00	3841½	5.40	3921½	8.10
60	3762	3.10	3842	5.70	3922	8.60
100	3764	5.30	3844	9.70	3924	14.60
200	3766	8.20	3846	14.90	3926	22.40
400	3769	17.90	3849	32.50	3929	49.00
600	3771	25.50	3851	46.50	3931	70.00
800	3772	45.00	3852	82.00	3932	123.00
1200	3774	61.00	3854	111.00	3934	167.00

Fusible

250 Volts, A.C. or D.C.—Low Posts



2-Pole

No.	Each	No.	Each	No.	Each	
30	4081	\$2.40	4161	\$4.30	4241	\$6.50
60	4082	3.80	4162	6.90	4242	10.40
100	4084	7.00	4164	12.80	4244	19.20
200	4086	10.60	4166	19.30	4246	29.00
400	4088	22.80	4168	41.50	4248	62.50
600	4090	32.50	4170	59.50	4250	89.50

*For 250 volts only.

Circle T Radio Switches



Mounted on
Composition
Bases



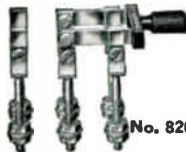
No. 919

No. 922

All current carrying parts are of copper, nickel plated.

No.	Each	Style	Size, In.— Lgth.—Width	Std. Pkg.	Std. Pkg. Wt. Lb.
917	\$.30	S. P. S. T.	2 x 1	20	3
918	.40	S. P. D. T.	2 7/8 x 1	10	2 1/2
919	.50	D. P. S. T.	2 x 1 5/8	10	2 1/2
920	.70	D. P. D. T.	2 7/8 x 1 5/8	10	3
921	1.00	3 P. S. T.	2 x 2 1/2	10	4
922	1.50	3 P. D. T.	2 7/8 x 2 1/2	10	5
923	1.75	4 P. S. T.	2 x 3 1/4	1	1 1/2
924	2.10	4 P. D. T.	2 7/8 x 3 1/4	1	1 1/2

Circle T Radio Switches For Panel Mounting



No. 820



No. 821

All current carrying parts are of copper, nickel plated.
Studs 1 1/2-inch threaded 1-inch 8x32.

No.	Each	Style	Std. Pkg.	Std. Pkg. Wt. Lb.
817	\$.40	S. P. S. T.	50	3
818	.55	S. P. D. T.	50	4
819	.80	D. P. S. T.	50	4
820	1.15	D. P. D. T.	25	2 1/2
821	1.20	3 P. S. T.	25	5
822	1.70	3 P. D. T.	10	3
823	2.35	4 P. S. T.	10	3
824	3.10	4 P. D. T.	10	4

Trumbull Telephone or Battery Knife Switches

Front Connections—Mounted
25 Amperes



No. 707

No. 711

No. 9

Porcelain Base

Nos. 710-R and 712-R are wired for reversing.

No.	Each	Style	Size, In.— Length Width	Std. Pkg.	Std. Pkg. Wt. Lb.
707	\$.20	S. P. S. T.	2 1/8 x 1 1/4	10	2 1/2
708	.32	S. P. D. T.	3 3/8 x 1 3/16	5	1 1/2
709	.35	D. P. S. T.	2 1/8 x 2	10	3 1/2
*710	.50	D. P. D. T.	3 3/8 x 2	5	2 1/2
710R	.65	D. P. D. T.	3 3/8 x 2	5	3
711	.56	3 P. S. T.	2 1/8 x 3 1/4	5	3
712	.90	3 P. D. T.	3 3/8 x 3 1/4	5	5
712R	1.10	3 P. D. T.	3 3/8 x 3 1/4	5	5

Slate Base

No.	Each	Style	Size, In.— Length Width	Std. Pkg.	Std. Pkg. Wt. Lb.
14	\$.45	D. P. S. T.	2 1/2 x 2	10	4
15	.75	D. P. D. T.	4 x 2	5	3
16	.66	3 P. S. T.	2 1/2 x 3 1/4	5	3
17	1.10	3 P. D. T.	4 x 3 1/4	5	4
18	1.00	4 P. S. T.	2 1/2 x 4 1/2	5	4 1/2
19	1.70	4 P. D. T.	4 x 4 1/2	1	1

Fibre Base

No.	Each	Style	Size, In.— Length Width	Std. Pkg.	Std. Pkg. Wt. Lb.
7	\$.22	S. P. S. T.	2 1/8 x 1 1/8	20	3
8	.34	S. P. D. T.	3 3/4 x 1 1/8	10	2
9	.42	D. P. S. T.	2 1/2 x 2	10	2 1/2
10	.80	D. P. D. T.	3 3/4 x 2	10	4
40	.75	3 P. S. T.	2 1/2 x 3 1/4	10	5
41	1.25	3 P. D. T.	3 3/4 x 3 1/4	10	6
42	1.10	4 P. S. T.	2 1/2 x 4 3/8	10	6
43	1.75	4 P. D. T.	3 3/4 x 4 3/8	10	10

Fibre Base—With Black Enamel Handle

No.	Each	Style	Size, In.— Length Width	Std. Pkg.	Std. Pkg. Wt. Lb.
11	\$.20	S. P. S. T.	2 1/2 x 1 1/8	20	3
13	.32	S. P. D. T.	3 3/4 x 1 1/8	10	2

*Without base price is \$.40.

Trumbull Telephone or Battery Knife Switches

Back Connections—Unmounted



No. 783

No. 885

Length of studs, 1 1/2 inches, threaded 1 inch from the ends with 10x24 threads.

Polished finish is standard. For nickel plate add 25%.

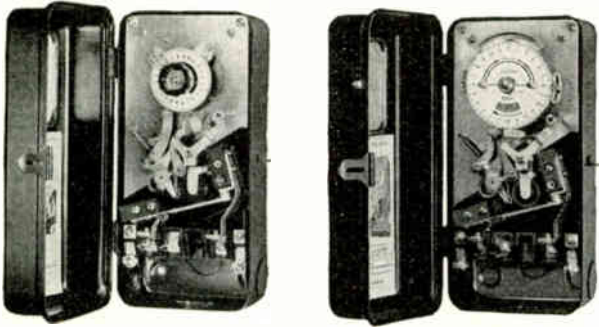
No Fuse

No.	Polished Each	Plain Each	Style	Std. Pkg.	Std. Pkg. Wt. Lb.
783	\$.40	\$.30	S. P. S. T.	50	10
784	.56	.42	S. P. D. T.	50	13
785	.80	.62	D. P. S. T.	50	18
786	1.16	.80	D. P. D. T.	25	10
787	1.20	.96	3 P. S. T.	25	10
788	1.74	1.25	3 P. D. T.	10	5
789	2.35	1.75	4 P. S. T.	10	5 1/2
790	3.10	2.30	4 P. D. T.	10	8

Fusible

No.	Polished Each	Plain Each	Style	Std. Pkg.	Std. Pkg. Wt. Lb.
883	\$.50	\$.38	S. P. S. T.	50	13
885	1.00	.78	D. P. S. T.	25	15
887	1.50	1.20	3 P. S. T.	25	20
889	2.15	1.56	4 P. S. T.	10	12

Forms KA and KAZ Sangamo Time-Switches
Synchronous Motor—Silver Contacts



Form KA

Form KAZ

Form KA. Six levers are provided for a maximum of three daily on and off operations. Accurate timing is obtained by turning the minute hand reset staff on the 24-hour dial. If desired, the time-switch can be manually operated without affecting subsequent operations.

Form KAZ. This Astronomic Dial Time-Switch functions to close the circuit at sunset and open it at sunrise. Off operation may be set at any time between 9:30 P.M. and 2:15 A.M.

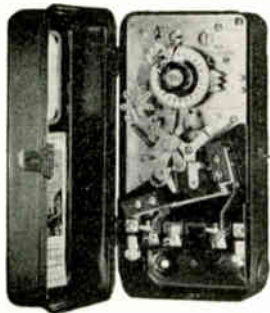
Width, 4½ inches; height, 9¼ inches; depth, 3¾ inches. Four ¼-inch pryouts in back, bottom and both sides.

Underwriters' Laboratories E-10220. Ship. weight, 6½ lb.

Form	Poles	Throw	115 Volts A.C.		230 Volts A.C.	
			Amp.	Each	Amp.	Each
KA-11	Single	Single	35	\$20.00	35	\$20.00
KA-21	Double	Single	35	22.50	35	22.50
KA-31	Triple	Single	6	25.00	3	25.00
KA-12	Single	Double	35	22.50	35	22.50
KA-22	Double	Double	6	25.00	3	25.00
KA-32	Triple	Double	6	27.50	3	27.50

- External Knobs for Manual Operation, Off or On. add 1.00
- Double Knobs for Both Off and On. add 1.50
- Form KAG, for reverse time limits between off and on, no extra charge.
- Form KAZ, Astronomic Dial. add 12.50
- Form KAY, Two Circuit. add 6.00
- Form KAH, Omitting Device. add 3.00
- Form KAEH, Advance Time Cutoff with Omitting Device. add 8.00
- Form KAO, Outdoor Case with Window. add 11.00
- Form KAO, Outdoor Case without Window. add 10.00

Form VSW Sangamo Time-Switches
Synchronous Motor—With Carryover



Synchronous timing is combined with reserve spring clock operation, providing continuous operation during current interruptions up to ten hours. This entirely automatic carryover eliminates the necessity of resetting the dial after current interruptions; insures accurate timing under all conditions.

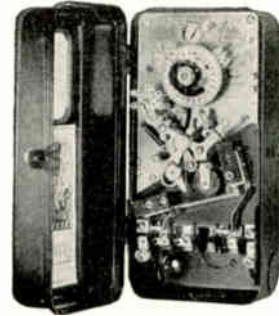
Width, 4½ inches; height, 9¼ inches; depth, 3¾ inches. Four ¼-inch pryouts in back, bottom and both sides. Underwriters' Laboratories E-10220.

Ship. weight, 6½ pounds.

Form	Poles	Throw	115 Volts A.C.		230 Volts A.C.	
			Amp.	Each	Amp.	Each
VSW-11	Single	Single	35	\$30.00	35	\$30.00
VSW-21	Double	Single	35	32.50	35	32.50
VSW-31	Triple	Single	6	35.00	3	35.00
VSW-12	Single	Double	35	32.50	35	32.50
VSW-22	Double	Double	6	35.00	3	35.00
VSW-32	Triple	Double	6	37.50	3	37.50

- External Knobs for Manual Operation, Off or On. add 1.00
- Double Knobs for Both Off and On. add 1.50
- Form VSWG, for reverse time limits between off and on, no extra charge.
- Form VSWZ, Astronomic Dial. add 12.50
- Form VSWY, Two Circuit. add 6.00
- Form VSWH, Omitting Device. add 3.00
- Form VSWEH, Advance Time Cutoff with Omitting Device. add 8.00
- Form VSWO, Outdoor Case with Window. add 11.00
- Form VSWO, Outdoor Case without Window. add 10.00

Form VW Sangamo Time-Switches
A.C. Electrically Wound—Silver Contacts



This time-switch is electrically wound with 10-hour reserve for a.c. operation. Jeweled balance, non-magnetic, non-rusting, hairspring. Omitting device omits on operation for any days desired. Heavy silver contacts insure long life. Can be operated manually without affecting subsequent operations.

Width, 4½ inches; height, 9¼ inches; depth, 3¾ inches. Four ¼-inch pryouts in back, bottom and both sides.

Underwriters' Laboratories E-10220.

Specify voltage and frequency.

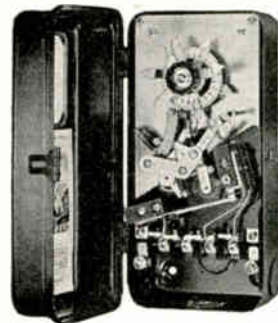
Shipping weight, 6½ pounds.

Form	Poles	Throw	115 Volts A.C.		230 Volts A.C.	
			Amp.	Each	Amp.	Each
VW-11	Single	Single	35	\$27.50	35	\$27.50
VW-21	Double	Single	35	30.00	35	30.00
VW-31	Triple	Single	6	32.50	3	32.50
VW-12	Single	Double	35	30.00	35	30.00
VW-22	Double	Double	6	32.50	3	32.50
VW-32	Triple	Double	6	35.00	3	35.00

- External Knobs for Manual Operation, Off or On. add 1.00
- Double Knobs for Both Off and On. add 1.50
- Form VWG, for reverse time limits between off and on, no extra charge.
- Form VWY, Two Circuit. add 6.00
- Form VWH, Omitting Device. add 3.00
- Form VWEH, Advance Time Cutoff with Omitting Device. add 8.00
- Form VWO, Outdoor Case with Window. add 11.00
- Form VWO, Outdoor Case without Window. add 10.00

Forms KAY, VSWYA and VWYA Sangamo Time-Switches

Two Circuit—35 Amperes



Form KAY

Either the self-starting synchronous motor Form KAY, or the electrically wound Form VWYA Time-Switches can be supplied in the two-circuit construction. In the Form KAY, the on and off operations of each circuit are independent. Can be operated manually if desired.

Width, 4½ inches; height, 9¼ inches; depth, 3¾ inches. Four ¼-inch pryouts in back, bottom and both sides.

Underwriters' Laboratories E-10220.

Specify voltage and frequency.

Shipping weight, 6½ pounds.

Form	KAY	VSWYA	VWYA
115 V. less Omitting Device. ea.	\$26.00	\$37.00	\$34.50
230 V. less Omitting Device. ea.	26.00	37.00	34.50
Form KAYZ, Astronomic Dial. add			12.50
Form KAYH, Omitting Device. add			3.00
Form VWY, Omitting Device. add			3.00

Sangamo Duplex Time-Switches

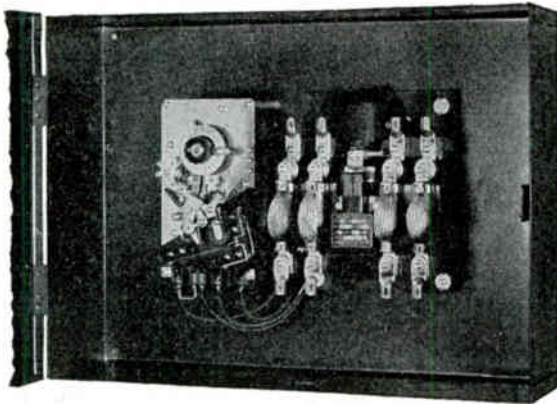
Silver Contacts

Width, 9½ inches; length, 10¼ inches; depth, 3¾ inches.
Underwriters' Laboratories E-10220.
Specify voltage and frequency.
Shipping weight, 14 pounds.

Form	Poles	Throw	115 Volts A.C.		230 Volts A.C.	
			Amp. Each	Each	Amp. Each	Each
KADH-11	Single	Single	35	\$42.50	35	\$42.50
KADH-21	Double	Single	35	47.50	35	47.50
KADH-12	Single	Double	35	47.50	35	47.50
KADH-22	Double	Double	6	52.50	3	52.50
VWD-11	Single	Single	35	50.00	35	50.00
VWD-21	Double	Single	35	55.00	35	55.00
VWD-12	Single	Double	35	55.00	35	55.00
VWD-22	Double	Double	6	60.00	3	60.00

Sangamo 60 and 100-Ampere Time-Switches

Silver Contacts



Form KA-6114L

Time-switches, Forms KA, KAZ, VSW, VSWZ and VW combined with contactor for a.c. double-pole triple-pole and four-pole, single-throw operation.

Cabinet size: two-pole, 17x14x5 inches; three and four-pole, 19½x14x5 inches. Ample knockouts in sides, top and bottom.

Underwriters' Laboratories E-10220.

Shipping weight, 40 pounds.

Poles	Volts	50 AMPERES		100 AMPERES	
		Form	Each	Form	Each
2	115	KA-6162L	\$57.00	KA-6112L	\$62.00
3	115	KA-6163L	60.50	KA-6113L	67.00
4	115	KA-6164L	64.00	KA-6114L	72.00
2	230	KA-6262L	58.25	KA-6212L	63.25
3	230	KA-6263L	61.75	KA-6213L	68.25
4	230	KA-6264L	65.25	KA-6214L	73.25

Form KAZ, Astronomic Dial..... add \$12.50

Form VSW..... add 10.00

Form VSWZ, Astronomic Dial..... add 22.50

Sangamo Astronomic Dials

Efficient control of window lights, bill-boards, and street lighting can be best accomplished by use of a Sangamo Time-Switch equipped with an astronomic dial. This allows on and off operations to accurately follow sunset and sunrise time.

Add..... \$12.50

Sangamo Outdoor Cases

For outdoor installations, a heavy cast iron, cadmium plated, weatherproof case finished with aluminum paint can be furnished. Ideal for outdoor sign boards. For Forms KA, KAZ, VSW, VSWZ and VW.

With Window..... add \$11.00

Without Window..... add 10.00

G-E Automatic Time Switches and Timing Devices

Telechron Motor Driven

G-E automatic time switches are operated by the well-known telechron synchronous motor, and do not require winding, regulating, or other attention.

While the types listed include a wide range of ratings and meet many requirements, switches of other ratings and types can be furnished, usually from stock.

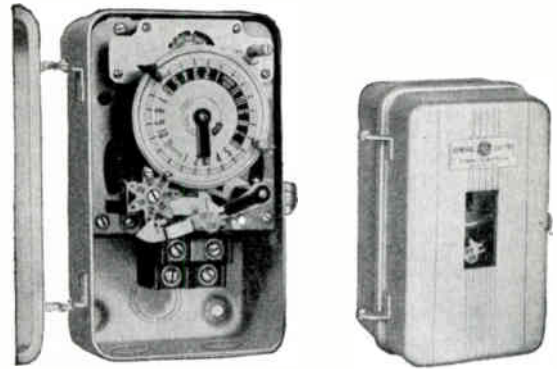
The following table may be of assistance in selecting the proper type of switch for the desired operation.

Operation Related to Hour of Day (Outdoor and Indoor Installation).....	Use Type
Repeating Operation Cycle, Not Related to Hour of Day (Indoor Installation).....	T-44
Process Timing and Control, Readily Adjusted Switch (Indoor Installation).....	TSA-14
Counting Units of Time (Machine Operation Time)	TSA-10 KT

Type T-44 for Indoor or Outdoor Installation

For Use in Temperature Ranges of 0°F. to 110°F.

60 Cycles—Contacts 35 Amperes—230 Volts, A.C.



The Type T-44 time switch employs the well-known telechron synchronous motor, and is equipped with removable and adjustable riders to provide for convenience of adjustment. Can be furnished with the skip-a-day device, omitting device at \$3.00 extra.

Switches are equipped with Type B-8, 2-watt motor. Can be furnished equipped with 6-watt motors for operation in temperature ranges of -20°F. to +110°F, when specified at no increase in price.

Dimensions, 7½x5½x4¼ inches.

Approximate shipping weight, 6 pounds.

Motor Volts	Pole	SWITCH Pole Throw	*Plain Dial		†Astronomic Dial	
			No.	Each	No.	Each
115	1	1	93x932	\$20.00	93x968	\$32.50
230	1	1	93x933	20.00	93x969	32.50
115	1	‡2	93x938	22.50	93x974	35.00
230	1	‡2	93x939	22.50	93x975	35.00
115	2	1	93x944	22.50	93x980	35.00
230	2	1	93x945	22.50	93x981	35.00
115	2	‡2	93x950	25.00	93x986	37.50
230	2	‡2	93x951	25.00	93x987	37.50

Same prices for 50 or 25-cycle ratings.

*One set of riders mounted dial; one additional set supplied in sealed envelope inside switch case. All over two sets per switch, 20 cents extra per set.

†When ordering, specify city or town in which to be used. Above prices are for standard astronomic schedules (civil twilight) within latitudes of 30 to 50° in Northern Hemisphere.

‡In double-throw forms, circuit No. 2 may close before the arc in No. 1 is wholly out, and vice versa.

G-E Automatic Time Switches and Timing Devices

Telechron Motor Driven
Continued

Type TSA-14 for Control of Repeating Schedules
60 Cycles—Contacts Rated 10 Amperes, A.C.



Type TSA-14 is designed to control repeating cycles of operation of electric circuits without respect to the time of day. The "on" time may be varied between 1 and 99 per cent of the total time cycle.

Die-cast base is equipped with a pipe nipple that is suitable for mounting in a knockout of any convenient junction box or switch box.

Timing is obtained by a telechron synchronous motor, therefore no winding or regulating is required.

Dimensions, 5-inch diameter by 3½-inch depth.
Approximate shipping weight, 4 pounds.

Total Cycle: 10 or 15 Seconds			Total Cycle: 5, 7, 10, or 15 Minutes		
Conduit Mounting Nipple	Volts	Each	Conduit Mounting Nipple	Volts	Each
Top	115	\$19.50	Top	115	\$15.50
Bottom	115	19.50	Bottom	115	15.50
Top	230	19.50	Top	230	15.50
Bottom	230	19.50	Bottom	230	15.50

Total Cycle 20, 30, or 40 Seconds; 1 or 3 Minutes			Total Cycle 30, 45, or 60 Minutes		
Conduit Mounting Nipple	Volts	Each	Conduit Mounting Nipple	Volts	Each
Top	115	\$17.50	Top	115	\$14.50
Bottom	115	17.50	Bottom	115	14.50
Top	230	17.50	Top	230	14.50
Bottom	230	17.50	Bottom	230	14.50

When ordering specify total ("on" plus "off") time cycle.
Same prices for 50 or 25-cycle ratings.

Type TSA-10 for Process Timing
60 Cycles



Type TSA-10 process timer is suitable for the control of electrically operated machines, devices, etc., and is readily adjusted over a wide range of operating cycles. Can be supplied with normally open or normally closed contacts. Resetting is automatic when the clutch coil is de-energized.

Because of its flexibility of adjustment and connection, and since its operations can be controlled electrically, this timer is adaptable to many control applications.

Relays for use with the Type TSA-10 timer, enabling completely automatic control, can also be furnished.

Dimensions, 9x6x4 inches.

Approximate shipping weight, 8 pounds.

Double-Time Scale—5/15, 10/30, 20/60, 30/90, 40/120, 100/300 Seconds;
1/3, 2/6, 5/15, 10/30, 15/45, 20/60, 40/120, 80/240 Minutes; 1/3 or 2/6 Hours

Volts	Clutch Coil Contacts	Time-Set Knob	Each
115	With	Internal	\$37.50
230	With	Internal	38.00
115	Without	Internal	37.25
230	Without	Internal	37.75
115	With	External	40.00
230	With	External	40.50
115	Without	External	39.75
230	Without	External	40.25

Single-Time Scale—5, 10, 15, 20, 30, 40 Seconds;
1, 2, 3, 5, 6, 10, 15, 20, 30, 40 Minutes;
1, 2, 3, 4, or 6 Hours

Volts	Clutch Coil Contacts	Time-Set Knob	Each
115	With	Internal	\$32.50
230	With	Internal	33.00
115	Without	Internal	32.25
230	Without	Internal	32.75
115	With	External	35.00
230	With	External	35.50
115	Without	External	34.75
230	Without	External	35.25

When ordering specify scale rating and normally open or normally closed main contacts.

Same prices for 50 or 25-cycle ratings.

G-E Automatic Time Switches and Timing Devices

Telechron Motor Driven
Continued

Type KT Automatic Time Meters
60 Cycles



Round for Flush Mounting



Square for Flush Mounting



Conduit



Portable

Whenever knowledge of elapsed time is of value, the Type KT time meter is a profitable investment. Machine-operating time, often very difficult and expensive to measure, is easily and inexpensively measured with this device.

This time meter consists of a cyclometer, driven by a telechron synchronous motor. Connected to an electric circuit, it will measure and indicate the number of hours, tenths of hours, or minutes that the circuit is in use.

Approximate shipping weight, 6 pounds.

Round

Approximate dimensions, 3½ inches in diameter.

Volts	REGISTERS			Each
	Hours No.	1/10 Hours No.	Minutes No.	
11	94X917	94X921	94X925	\$18.00
115	94X918	94X922	94X926	17.00
230	94X919	94X923	94X927	18.00
460	94X920	94X924	94X928	19.00

Square

Approximate dimensions, 3x3½ inches.

11	94X929	94X933	94X937	\$18.00
115	94X930	94X934	94X938	17.00
230	94X931	94X935	94X939	18.00
460	94X932	94X936	94X940	19.00

Conduit

Approximate dimensions: 4¼ inches in diameter; 3 inches deep.

11	94X893	94X897	94X901	\$18.00
115	94X894	94X898	94X902	17.00
230	94X895	94X899	94X903	18.00
460	94X896	94X900	94X904	19.00

Portable

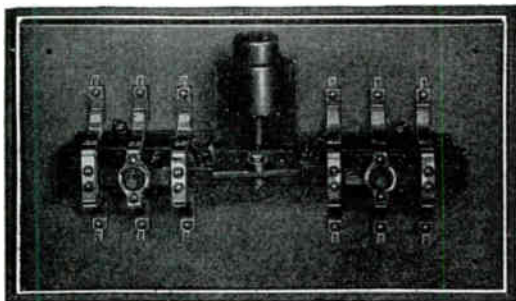
Approximate dimensions: 6¾ inches high; 3 inches deep.

11	94X905	94X909	94X913	\$19.00
115	94X906	94X910	94X914	18.00
230	94X907	94X911	94X915	19.00
460	94X908	94X912	94X916	20.00

Same prices for 50 or 25-cycle ratings.

Diamond H Remote Control Equipment

Type G Throw Over Switches Automatic Double Throw



Type G consists of two Type F Remote Control Switches with a mechanical interlocking arm and relay mounted on a bronze metal sub base. The Type F Switch consists of two closing and one opening coils in a dust-proof cast iron frame, together with an operating coil circuit breaker and mechanical ball locking device. The coils are energized momentarily only during the opening and closing operations. Type F mechanism operates the brush carrier in a straight line motion, making and breaking the circuit with the contacts which are mounted on a slate base or panel.

The purpose of the Type G Switch is to furnish automatic control of lighting circuits when two sources of current supply are used (main line and emergency circuit). Used in theatres, auditoriums of public buildings, operating rooms of hospitals, schools, or wherever it is essential to maintain a continuous supply of current.

Control is always connected to emergency service, operation being fully automatic. Armature of relay drops by gravity upon failure of normal service and closes a set of contacts which transfers the load from normal to emergency service. Upon resumption of normal service, armature of relay is pulled upwards, connecting a set of contacts; this restores the switches to normal position and the load is again connected to normal service. Consumption of continuous current solenoid is about 15 watts.

Type G Switch can also be controlled manually by the use of momentary contact switches or other suitable controlling device.

Standard double throw switches are wired with normal service on right-hand side. May be furnished with normal on left or right of emergency as desired. May also be furnished for vertical mounting.

Amperes	Double Pole			Triple Pole		
	No.	Each	Ship. Wt. Lb.	No.	Each	Ship. Wt. Lb.
30	73025	\$106.00	35	79025	\$118.00	37
60	74025	122.00	35	80025	134.00	37
75	75025	150.00	40	81025	166.00	42
100	76025	170.00	50	82025	186.00	55
150	77025	230.00	55	83025	250.00	60
200	78025	280.00	60	84025	320.00	65
300	78125	385.00	70	78135	440.00	75

Type G Switch can be furnished with relays for phase protection. Prices on application.

Switch can be made in four poles if desired. Quotations on request.

Momentary Contact Toggle Switches

For Manual Control of Remote Control Switches

This is a special switch for use in connection with remote control switches. The mechanism is similar to the regular Diamond H Switch, and is so arranged that a snap contact is made and a quick break is obtained. The contacts are made of pure silver. This switch fits all standard conduit boxes and uses a regular switch plate.

No. 15009 Single Pole Double Throw Toggle Switch Normally Open.....	each	\$3.00
No. 15010 Lock Type Switch.....	each	3.50
No. 15010-2 Key.....	each	.20

Mercury Tube Relays

20 Amperes, 250 Volts—30 Amperes, 125 Volts
Non-Inductive Rating



No. 40011X, with Box

These relays are positive in action, silent, fool-proof and will stand up under constant use for a long time. They are used for controlling automatic machines, signal systems, temperature control on all kinds of industrial equipment, for motor starting and stopping and control of lighting circuits. In places where inflammable gases and dust are prevalent, this type of switch is essential, such as in chemical, rubber, oil, flour, cement, and similar plants.

Relays have been designed for controlling loads up to 30 amperes at 125 volts by means of a low amperage secondary circuit. The coils are of the continuous current type, and are wound for 110 or 220 volts a.c. or d.c. Special low voltage coils as low as 6 volts d.c. may be supplied. The relay coils consume only a few watts and can be left in the circuit with no possibility of burning out.

No open arc is made because the current is broken by a mercury tube.

Made in single, double, triple and four pole; also single pole double throw, and double pole double throw. May be furnished in double throw combination.

Solenoid windings are designed for continuous operation and can be controlled by any suitable single pole switch.

Standard Type A or flush metal boxes furnished to take relays. May be supplied with two or more in single box or in vaporproof box.

No.	With Box Each	No. of Poles	Box Size Inches	Coil
*4001	\$10.00	1	9x6x3	125 Volts A.C. 50-60 Cycles
*4005	10.00	1	9x6x3	250 Volts A.C. 50-60 Cycles
4009	10.00	1	9x6x3	125 Volts D.C.
40010	10.00	1	9x6x3	250 Volts D.C.
*40011	14.00	2	9x6x3	125 Volts A.C. 50-60 Cycles
*40015	14.00	2	9x6x3	250 Volts A.C. 50-60 Cycles
40019	14.00	2	9x6x3	125 Volts D.C.
40020	14.00	2	9x6x3	250 Volts D.C.
*40021	18.00	3	9x6x3	125 Volts A.C. 50-60 Cycles
*40025	18.00	3	9x6x3	250 Volts A.C. 50-60 Cycles
40029	18.00	3	9x6x3	125 Volts D.C.
40030	18.00	3	9x6x3	250 Volts D.C.
*40031	22.00	4	9x9x4	125 Volts A.C. 50-60 Cycles
*40035	22.00	4	9x9x4	250 Volts A.C. 50-60 Cycles
40039	22.00	4	9x9x4	125 Volts D.C.
40040	22.00	4	9x9x4	250 Volts D.C.

*Can be furnished for 40, or 25-30 cycles at no extra charge if specified on order.

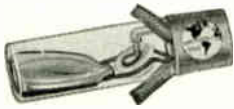
Deduct \$1.00 for relay without box. When ordering without box, specify number only (minus X) as "4001".



No. 15009

Mercoïd Mercury Switches

No. 855 Mercoïd Thermostats



Type 9-51R



Type 9-61R



Type 9-81

Mercoïd Hermetically Sealed Mercury Switch is used for making and breaking an electrical circuit. Not subject to open arcing, pitting or sticking of contacts. Cannot be affected by dust, dirt or corrosion. Long lived dependable service. Positive operation is assured under various operating conditions.

Many types available to meet different requirements.

- Types 9-51R or 9-51S, 10 Amp. 115 V., 5 Amp. 230 V. each \$2.10
- Types 9-61R or 9-61S, 4 Amp. 115 V., 2 Amp. 230 V...ea. 1.15
- Type 9-81, 9/10 Amp. 24 V. each 3.00
- Type PP-93-11 Magnet for Type 9-81 Switch.... each .60

Mercoïd Sensatherms

9/10 Ampere, 24 Volts or Less



Extremely sensitive and accurate in performance. Follows room temperature changes so quickly that uniform control is assured.

Operates on temperature variation of 1/2° above or below point set (total differential 1°F.) No internal heater coils or other means of artificial acceleration are used.

Champagne tone finish.

- Type H, for Heating Applications 55-85°F. each \$6.00
- Type R, for Air Conditioning and Cooling, 55-85°F. and 65-95°F. each 6.50

Mercoïd Dual Sensatherms

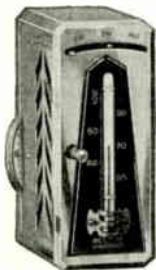
9/10 Ampere, 24 Volts or Less

Provides fully automatic day-night temperature when employed in connection with Type T-41 Timercoïd. This instrument combines in one unit, two single circuit sensatherms with individual adjustments.

Type HR used for both heating and cooling equipment and also for air conditioning.

- Type HH, 55-85°F. each \$11.00
 - Type HR, 55-85°F. each 11.50
- Other ranges available.

Mercoïd Day-Night Sensatherms



Type DNH is a compact hand wound time controlled high and low day and night temperature regulating thermostat. Maintains lowered temperature up to nine hours.

Electric capacity, range and differential same as Type H sensatherm.

- Type DNH. each \$17.00
- Type DNHA, Line Voltage Type, Single Pole Capacity, 20 W. at 115 V. or 230 V., A.C. or D.C. each 17.50

Mercoïd Two-Stage Sensatherms



For control of high-low gas or oil burners. Provides regulation of two-speed fans on air conditioning. Eliminates overshooting temperature on stoker fired forced circulating warm air systems. Two mercury magnetic switches used.

Differential and electrical capacity same as Type H.

- Type HBH, for Heating, 55-85°F. each \$11.00
- Type HBR, for Heating and Cooling each 11.00

4-9135
Scott
Mahin



For high voltage applications, to handle motor load directly, without the use of a relay.

- Standard ranges: 56-80°, 38-70°, 65-90° and 25-60°.
 - No. 855, without Thermometer. each \$9.00
 - No. 855T, With Thermometer. each 10.00
- Special ranges available at additional cost.

Type T-41 Mercoïd Timercoïds

Lik?
Kane



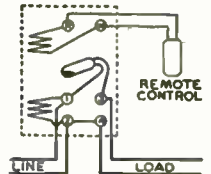
A self-starting Telechron clock in combination with Type HH Sensatherm and a 24-volt transformer. With fully automatic day and night time switch.

Clock automatically controls the day and night temperature in accordance with the desired temperature setting.

- Type T-41, Std. 24 V. 60 Cy. each \$20.00
 - Transformer, 110-24 V. 60 Cy. each 1.50
- Other capacities available.

Mercoïd Transformer-Relays

For A.C. Current



For use with stokers, oil burners, air conditioning and industrial applications.

Transformer is self-contained in the relay, as the primary coil induces 24 volts in the secondary coil by transformer action. Quiet and dependable mercury contact instrument with low voltage thermostat or pilot circuit. No metal contacting faces to hum or chatter.

Single pole circuit, normally open (load circuit common with supply circuit). Electrical capacity, 10 amperes, 115 volts; 5 amperes, 230 volts. Motor rating, 1 hp. repulsion-induction; 1/2 hp. split-phase. Remote control circuit, 24-volt, self induced.

Type....	V2-3A	V2-3B	V2-3D	V2-3F	V2-3G	V2-3J
Each....	\$8.50	10.00	10.00	9.00	10.00	10.00
Volts....	115	115	115	230	230	230
Cycles...	60	50	25	60	50	25

For Heater Loads

Types V2-26A and V2-26F especially designed to handle heavy non-inductive heater loads. Non-inductive a.c. heater load rating: Type V2-26A, 20 amperes, 115 volts, maximum 2000 watt; Type V2-26F, 20 amperes, 230 volts, maximum 4000 watt.

Type.....	V2-26A	V2-26F
Each.....	\$9.50	9.50
Volts.....	115	230
Cycles.....	60	60

Other types also available.

Type DA-31 Mercoid Pressure Controls



Has independent outside adjustments for setting both cut-in and cut-out pressures. Indicators show exact pressures for which instrument is set to operate.

Furnished with adjustment locking device and iron pig-tail siphon.

Electrical capacity, 10 amperes, 115 volts; 5 amperes, 230 volts and on order 3 amperes, 440 volts, a.c. or d.c. Motor rating 1-h.p. repulsion-induction, 1/2-hp. split phase or d.c.

Range No.	Each	Adjustable Operating Range Pounds	DIFFERENTIALS, POUNDS		Maximum Pressure Pounds
			Min.	Max.	
1	\$6.00	0 to 14	1	14	30
2	12.00	0 to 30-In. Vac.	2-In. Vac.	30-In. Vac.	..
3	8.00	10-In. Vac. to 12	1	Entire Range	30
4	8.50	0 to 35	1 1/4	35	50
5	8.50	0 to 60	2	60	80
6	9.00	0 to 100	3	100	125
7	9.50	0 to 150	4	150	200
8	11.50	0 to 200	6	200	240
9	12.00	0 to 300	8	300	400

Mounting bracket with 12 feet copper tubing, \$3.50 extra.

Type DA-21 Mercoid Pressure Controls

Similar to Type DA-31 except that it has a heavier gage bourdon tube with a check valve to dampen out pulsations. Adjustments, electrical capacity same as Type DA-31.

Range No.	Each	Adjustable Operating Range Pounds	Bourdon Tubing	DIFFERENTIALS, POUNDS		Maximum Pressure Pounds
				Min.	Max.	
1	\$8.50	0 to 14	Brass	1	14	30
4	11.00	0 to 35	Brass	2 1/2	35	80
5	11.00	0 to 60	Brass	3	60	125
5S	16.00	0 to 60	Steel	4	60	150
6	16.50	0 to 100	Brass	5	100	200

Type DA-231 Mercoid Pressure Controls



For steam or other applications where close operating differential and wide range adjustments are required and where pressure medium is not injurious to brass. Has same outside adjustments as Type DA-31. Furnished with 12 feet remote copper tubing with 1/4-inch I.P.S. connection.

Electric capacity, 20 watts, 115 or 230 volts a.c. or d.c., 9/10 amperes at 24 volts or less. Motor rating, 1/60 hp.

Range No.	Each	Adjustable Operating Range Pounds	Bourdon Tubing	DIFFERENTIALS, POUNDS		Maximum Pressure Pounds
				Min.	Max.	
1	\$16.50	0 to 14	Brass	1/8	14	30
2	25.50	0 to 30-In. Vac.	Brass	2/10-In. Vac.	30-In. Vac.	..
3	16.50	10-In. Vac. to 12	Brass	1/8	Full Scale	30
4	22.00	0 to 35	Brass	1/4	35	50

Other ranges available.

Type DA-221 Mercoid Pressure Controls

For industrial applications (other than steam) for close operating differentials at high pressures and where pressure medium is not injurious to steel. It is similar in construction to Type DA-231, except that it has a heavier gage chrome molybdenum steel bourdon tube. Furnished with 12 feet remote copper tubing.

Electric capacity, 20 watts, 115 or 230 volts a.c. or d.c. Motor rating, maximum 1/60 hp.

Range No.	Each	Adjustable Operating Range Pounds	Bourdon Tubing	DIFFERENTIALS, POUNDS		Maximum Pressure Pounds
				Min.	Max.	
5S	\$29.50	0 to 60	Steel	7/16	60	150
6S	30.00	0 to 100	Steel	3/4	100	300
7S	30.50	0 to 150	Steel	3/4	150	300
8S	32.50	0 to 200	Steel	3/4	200	300

Type DA-36 Mercoid Immersion Hot Water Controls



Used as hot water storage tank or boiler water temperature control; also as a limit control.

Has double outside adjustments, accurately calibrated visible dial and close operating differential.

Differential 2° minimum, 100° maximum. Rating, 10 amperes 115 volts, 5 amperes 230 volts. Motor rating, 1-hp., R.I. 1/2-hp. s.p. or d.c. Bulb, 3 inches long with 1/2-inch I.P.T. connection.

Type DA-36 has straight stem.

If back angle stem is desired, specify Type DA-37.

Range No.	Each	Adjustable Operating Range	MIN. DIFFERENTIALS		Max. Temp. Must Not Exceed
			High	Low	
5	\$10.50	100-200°	2°	9°	220°
6	10.50	135-235°	3°	10°	260°

Type DA-35 Mercoid Temperature Controls



For control of liquids or gases not injurious to copper or brass, such as air, oil, water, paraffin, glue or distillate vapors.

Has double outside adjustment, accurately calibrated visible dial.

Furnished standard with 6 feet flexible tubing.

Electric capacity, 10 amperes 115 volts, 5 amperes 230 volts. Motor rating, 1-hp., R.I. 1/2-hp. s.p. or d.c.

Range No.	Each	Adjustable Operating Range	MIN. DIFFERENTIALS	
			High	Low
3	\$17.50	25-100°	1°	5°
4	17.50	50-150°	2°	12°
5	15.00	100-200°	2°	9°

Other ranges available.

Type 115-W Mercoid Immersatherms



A summer-winter hot water supply control.

Has many industrial applications for controlling temperatures of liquids or gases not injurious to copper.

Low voltage, 9/10 amperes, 24 volts.

Type 115-W, Range 50-250°F.....	each	\$6.50
Type 115-W, Range 170-430°F.....	each	12.00

Mercoid Clamp-On Type Risertherms



A temperature limiting control designed to be clamped on risers of hot water heating systems or the surfaces of hot water tanks.

Electrical capacity either a.c. or d.c., 10 amperes, 115 volts, 5 amperes, 230 volts, and on special order at extra charge of \$3.00, 3 amperes, 440 volts. Motor is 1-hp. repulsion-induction, 1/2-hp. split phase, or d.c.

No. 34

For use in connection with thermostat for dual control of unit heaters. Standard range 140 to 230°F., differential 6 to 25°F.

No. 34, 10-Ampere, Single Pole.....	each	\$6.50
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No. 35

A limit control for hot water systems. Standard range 110 to 200°F., differential 6 to 25°F.

No. 35, 10-Ampere, Single Pole.....	each	\$6.00
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Mercoïd Warm Air Fan and Limit Controls



Type M-51 prevents furnace from overheating.

Type M-53 fan control prevents cold air from blowing into rooms until correct temperature is reached.

Type M-80 combines in one unit each of the above controls and is known as a combination fan and limit control.

Two-wire system is employed. Controls are equipped with dials calibrated in degrees F. and a pointer indicates the temperature in furnace hood or duct. Simple adjustment provided for setting operation.

Furnished standard with mounting flange.

Electric capacity, 10 amperes 115 volts, 5 amperes 230 volts, a.c. or d.c.

Type M-51, Range 25-300° or 50-500°F..... each \$7.00

Type M-53SW, Range 25-300° or 50-500°F..... each 7.50

Type M-80, Range 50-300°F..... each 11.00

Type 116 Mercoïd Ductatherms



For regulating temperatures of air conditioning ducts and in higher range for bakery or drying ovens.

Uses low voltage only, 9/10 ampere at 24 volts or less.

Type 116, Range 50-300°F..... each \$7.00

Type 116, Range 50-500°F..... each 10.00

Type 116, Range 250-500°F..... each 10.00

Type B-11 Mercoïd Motor Damper Controls



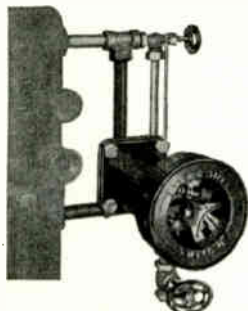
Designed for automatic regulation of draft and check dampers of domestic coal fired heating plants; also industrial applications such as controlling large lever valves for steam, water or gas.

Special motor bearings and quiet bakelite gears. Operates on 16 volts through a transformer. Lifting capacity, 10 pounds at end of 2 1/2-in. crankarm.

Standard voltage, 16 volts, 50 or 60 cycles.

Type B-11..... each \$15.00

Type DA-131Q Mercoïd Combination Pressure and Low Water Controls



Protects low pressure automatically fired steam boilers from firing into dry boilers or building up excess pressure. No packing gland is employed; seal is by means of a flexible diaphragm.

With quick hook-up fittings designed in accordance with the A.S.M.E. code.

Range, 0-10 pounds. Maximum pressure not to exceed 15 pounds.

Electric capacity, 10 amperes 115 volts, 5 amperes 230 volts. Motor rating, 1-hp. repulsion-induction, 1/2-hp. split phase or d.c.

Type DA-131Q, with Quick Hook-Up Attachments. ea. \$23.00

Type DA71 Mercoïd Combination Pressure and Low Water Controls



For high pressure steam systems. I.P.S. connection, one inch. With Mercoïd sealed mercury contact switch, double outside adjustment, and accurately calibrated visible dial.

Electric capacity, 10 amperes 115 volts, 5 amperes 230 volts a.c. or d.c. Furnished 3 amperes 440 volts a.c. or d.c. on special order. Extra charge of \$3.00 for 440-volt

single-pole. Motor rating 1-hp. repulsion-induction, or 1/2-hp. split phase or d.c. motor. Available 2-pole and 2-circuit also.

Range No.	Each	Adjustable Operating Range, Lb.	Max. Press. Must Not Exceed, Lb.	Ship. Wt. Lb.
8	\$42.00	0-200	240	35
9	44.00	0-300	300	35

Type DA-121 Mercoïd Combination Pressure and Low Water Controls



For low pressure steam.

Dial has two adjustable pointers which show pressures at which instrument is set to operate. Range is set by turning outside adjustments.

Electrical capacity, 10 amperes 115 volts, 5 amperes 230 volts; and on special order 3 amperes 440 volts, a.c. or d.c. Motor rating, 1-hp. repulsion-induction, 1/2-hp. split phase, or d.c.

Range No.	Each	Adjustable Operating Range, Lb.	DIFFERENTIALS POUNDS		Max. Press. Lb.
			Min.	Max.	
1	\$20.00	0 to 14-Lb.	1	14	30
3	23.00	10-In. Vac. to 12-Lb.	1	Entire Range	30

Type 75 Mercoïd Boiler Feed Water Pump Controls

300 Pounds Maximum Pressure Rating



Especially designed for the regulation of motor driven feed water pumps in connection with boilers operating between 150 and 300 pounds pressure. Operates feed water pump on approximately 1/4-inch variation in water level.

Boilers used for the generation of steam for industrial applications require constant replacement of water to make up for evaporation losses. As such boilers generally operate on high pressures, motor driven feed water pumps are required. Very close regulation of water level is desirable to prevent lowering of steam pressure due to admission of too great a quantity of water.

Equipped with sealed mercury contact switch. No. 2120 feed water pump control only. Single pole, 10 ampere.

No. 2122 has alarm circuit; as water level drops, 10-ampere pump circuit closes first. If water level continues to drop, 4-ampere alarm circuit closes.

No. 2123 has low water cut-out; as water level drops, 10-ampere pump circuit closes first. If water level continues to drop, 10-ampere circuit controlling heating equipment opens.

Pipe connections, 1 inch I.P.S. Electrical capacity: 10 amperes 115 volts, 5 amperes 230 volts a.c. or d.c. Alarm circuit, 4 amperes 115 volts, 2 amperes 230 volts.

Motor rating: 1-hp. repulsion-induction, 1/2-hp. split phase or d.c.

Approximate shipping weight, 35 pounds.

No. 2120, Single Pole, 10 Amperes..... each \$32.00

No. 2122, with Alarm Circuit..... each 35.00

No. 2123, with Low Water Cut-Out..... each 36.00

Available on special order for 3 amperes 440 volts at \$3.00 additional.

For 150 pounds maximum pressures, deduct \$5.00 from list.

Type THV Mercoïd Stok-A-Timers



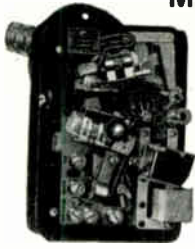
A stoker fire maintaining control that maintains stoker fire during periods when thermostat does not call for heat.

It is equipped with a unique heat operated motor which is quiet in operation. No gears are employed. Requires no lubrication. Only one rotating member is used which turns at the rate of one revolution per hour. No high speed operating parts.

Electric capacity, 10 amperes 115 volts 60 cycles, 5 amperes 230 volts. Motor rating, 1-hp. repulsion-induction, 1/2-hp. split phase.

Type THV..... each \$16.00

Mercoïd Pyratherms



Type JMI is a Safety and ignition control for oil burners employing intermittent spark or gas ignition. Provides full protection against flame or ignition failure and includes positive ignition control which insures having ignition circuit closed before every starting operation of burner.

Type JM is used for constant ignition burners.

Electric capacity, 10 amperes 115 volts, 5 amperes 230 volts, a.c. only, 60 cycles.

- Type JMI..... each \$21.00
- Type JM..... each 19.00

Mercoïd Controls Lever Arm Type

To open and close circuits.
No. 46 Snap Action ea. \$6.00
No. 47 Direct Action ea. 5.00
No. 48 3-Position ..ea. 8.00

Float Type

To maintain fluid levels in tanks or control sump pumps or cellar drainers.

No. 40 Counter-Balance.....ea. \$16.50
No. 41 Plunger.....ea. 16.50

If rod or floats are not desired, deduct \$5.50.



Type 855 EHT Mercoïd Thermostats

Used for room air temperature control in hazardous locations. Explosion-proof housing is cast aluminum. Proper provisions are made for making connections with circuit wires and access to Mercoïd switch.

Furnished with explosion-proof case.

For heating, 56-80° and 38-70°F. Differential, 3°F. For air conditioning, 65-90°F; for refrigeration, 25-60°F.

Electric cap., 10 amps. 115 volts, 5 amps-230 volts. Motor rating, 115 volts, 1/2-hp.

- R.I., s.p. or d.c.; 230 volts, 1-hp. R.I., 1/2-hp. s.p. or d.c. No. 855EHT, with Thermometer..... each \$30.00
- No. 855EH, without Thermometer..... each 29.00



Type 970 Mercoïd Explosion-Proof Cases

For use with Mercoïd temperature and pressure controls on applications such as oil refineries, gasoline service stations, dry cleaning plants, flour mills, etc. Explosion hazards are eliminated as the complete control unit is housed in the explosion-proof chamber.

Used with Types DA-31, DA-21, DA-231, DA-221, DA-51, and DA-61 pressure type controls. For Types DA-35, DA-235, DA-55, and DA-255 temperature controls.

Has shatter-proof glass cover, external reset button and external adjustments for setting operating range.

- Type 970..... each \$65.00

Type 76EH Mercoïd Explosion-Proof Cases

For liquid level control. For use in oil refineries, gasoline service stations, dry cleaning plants, flour mills, etc., where dust or vapors form an explosive mixture with air. Eliminates explosion hazards as all current carrying parts are housed in explosion-proof chamber. For water or other high specific gravity liquids not corrosive to copper or brass. Maximum pressure rating, 300 pounds.

- No. 7600 single-pole circuit opens as liquid level rises.
- No. 7601 same as No. 7600 excepting that circuit opens as liquid level lowers.

Electric capacity, 10 amperes 115 volts, 5 amperes 230 volts. Motor rating, 115 volts, 1/2-hp. R.I., s.p. or d.c.; 230 volts, 1-hp. R.I., 1/2-hp. s.p. or d.c.

- Special No. 7600..... each \$60.00
- Special No. 7601..... each 60.00



Type DA-55 Mercoïd Temperature Controls Remote Stem Type



Type DA-55 with Mounting Bracket

For refrigeration and air conditioning applications. For the control of brine, water, or low air temperatures in freezing rooms.

Has calibrated visible dial and double adjustments. Two pointers are adjustable over a calibrated dial and show at a glance the temperature at which the instrument is set to operate.

Furnished standard with a locking bar, which can be placed on instrument after installation, to prevent tampering with range adjustment. Equipped with the Mercoïd Sealed Mercury Contact Switch. Available with or without 3/4-inch I.P.S. connection at bulb. Standard with plain case, complete with mounting bracket. Furnished with 6 feet of flexible tubing. Available on special order with tubing up to 25 feet in length.

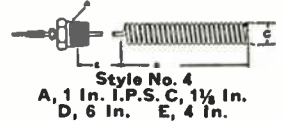
Electrical capacity, either a.c. or d.c.; 10 amperes, 115 volts; 5 amperes, 230 volts; and on special order, 3 amperes, 440 volts at extra charge of \$3.00.

Approximate shipping weight, 7 pounds.

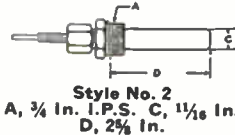
Available Style Bulbs



Style No. 1
B, 3 3/8 in. C, 1 1/8 in.



Style No. 4
A, 1 in. I.P.S. C, 1 1/8 in.
D, 6 in. E, 4 in.



Style No. 2
A, 3/4 in. I.P.S. C, 1 1/8 in.
D, 2 3/4 in.

Style No. 1 is for open tanks on applications where tight connection is not required. Style No. 2 has a 3/4-inch union connection for pressure applications. Where very close regulation is desired on air or gases, bulb style No. 4 can be furnished on special order at extra charge of \$2.50.

Adjustable Operating Range	*Type DA55-3 Each	†Type DA-55 Each	MINIMUM DIFFERENTIAL WHEN OPERATING POINT SET AT			Max. Differential	Temp. Must Not Exceed
			High	Med.	Low		
-30° to +60°	\$15.00	\$15.00	3°	5°	12°	90°	120°
0 to 75°	15.00	15.00	1 1/2°	4°	8°	75°	120°

*Type DA-55-3 controls close circuit as temperature rises.
†Type DA-55 controls open circuit as temperature rises.

Mercoïd Low and High Pressure Controls For Freon, Methyl Chloride or Sulphur Dioxide



Type DA-61

Provides accurate and reliable regulation of refrigeration equipment using any refrigerants not injurious to bronze. Employs bourdon tube.

Equipped with convenient double outside adjustments, and accurately calibrated visible dial. The pointers indicate the exact pressures at which the switch operates. Locking means is provided as standard, to prevent tampering. The Mercoïd mercury contact switch cannot burn or stick and is not affected by moisture, dirt or corrosion.

Electrical capacity, either a.c. or d.c.; 10 amperes 115 volts; 5 amperes 230 volts; and on special order, 3 amperes 440 volts at extra charge of \$3.00.

Type DA51-3 (STANDARD).—Range adjustable from 25 inches vacuum to 50 pounds. Minimum differential, 3 1/2 pounds (or equivalent vacuum). Maximum operating pressure, 125 pounds. Furnished in plain case bottom connection, fully automatic, with switch arranged to close circuit as pressure increases.

Type DA51 (STANDARD).—Range adjustable from 0 to 200 pounds. Minimum differential, 6 pounds. Maximum operating pressure, 240 pounds. Plain case bottom connection; fully automatic, with switch arranged to open circuit as pressure increases.

Type DR51.—Same as Type DA51 except semi-automatic with hand-reset. Prices covers single pole-10 ampere instruments.

- Approximate shipping weight, 4 pounds.
- Type..... DA51-3 DA51 DR51
- Each..... \$10.50 12.50 12.50

Type DA-61 Mercoid Low Pressure Ammonia Controls



Type DA-61 with Plain Case Bottom Connection

Provides close regulation of ammonia refrigeration equipment, from changes in suction pressure. By means of this control, the regulation of individual box temperatures on a multiple system is simplified. This instrument is actuated by a heavy chrome-molybdenum steel Bourdon tube which is Udylyte-plated to prevent corrosion. All mechanism parts are of nickel silver or are nickel plated. The sealed Mercoid mercury contact switch eliminates possibilities of open arcing, oxidation or corrosion. The case of pressed steel is 5 3/4 inches in diameter, with black heat resisting finish. The 1/4-inch I.P.S. connection has tapered thread which insures tight fit.

Has accurately calibrated visible dial and external double adjustments. Two pointers are adjustable over a calibrated dial, and show at a glance the pressure at which the instrument is set to operate. When setting the range, it is necessary merely to turn the outside adjustments until the pointers indicate, on the accurately calibrated dial, the operating pressures desired.

Standard range, 10 inches vacuum to 75 pounds. Will withstand a maximum pressure of 150 pounds without injury. Differential, can be set as close as 6 pounds or widened as much as desired.

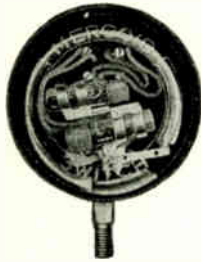
Electrical capacity, either a.c. or d.c.; 10 amperes, 115 volts; 5 amperes, 230 volts; and on special order, 3 amperes, 440 volts at extra charge of \$3.00.

Prices cover standard instruments with plain case, bottom connection, single pole, fully automatic, and will be so shipped unless otherwise specified.

Approximate shipping weight, 4 pounds.
 Type DA61, Circuit Opens as Pressure Rises... each \$18.00
 Type DA61-3, Circuit Closes as Pressure Rises... each 18.00

No. 61 Mercoid High Pressure Safety Cut-Out Controls

For Use on Ammonia and CO²



Designed for control of refrigerants. Specially treated, heavy steel Bourdon tubing is of correct size and construction for accurate and enduring performance. Udylyte-plated to prevent corrosion.

Snap-action movement locks switch in position at both cut-in and cut-out points. All mechanism parts of nickel silver or nickel-plated.

Furnished in 5 3/4-inch plain steel case with 1/4-inch drop forged male bottom connection and approved electrical outlet box.

Where used with ammonia, usually furnished semi-automatic to cut out at 225 pounds pressure, requiring hand reset to restart the compressor as many states require this feature. An adjustment is provided on back of case so that cut-out point can easily be changed for any operating pressure between 100 and 300 pounds.

For fully automatic service the differential is 75 pounds. When furnished for CO², this control is set to cut out at 1250 pounds. When fully automatic a differential of 500 pounds or more is required. Shipping weight 4 pounds.

Orders should specify circuit, range, operation (fully or semi-automatic), style of case (plain or flanged) and style of connection (bottom or back).

Ammonia Cut-Outs

Single Circuit..... each \$18.00
 2 Circuit (1 Pole, 10 Amp. Alarm, 4 Amp.).... each 20.50
 2 Circuit or Double Pole..... each 21.00

CO² Cut-Outs

Single Circuit..... each \$40.00
 2 Circuit (1 Pole, 10 Amp. Alarm, 4 Amp.).... each 42.50
 2 Circuit or Double Pole..... each 43.00

Type K-3B Mercoid Magnetic Valves



This straight magnetic two-wire valve opens and closes the gas line at the demand of a room thermostat or other control unit. It is adapted to a variety of uses, such as fuel supply control for gas fired furnaces and boilers, water heaters, industrial furnaces, bake ovens, etc.

Will not stick, and closes in case of current failure. On all valves larger than 3/8 inch, a manual bi-pass feature is provided to open valve in case of prolonged current failure.

Low voltage valve is 24 volts, 50-60 cycle.

Line voltage valve is 115 volts, 60-cycle, unless otherwise specified.

Size In.	*Low Voltage Each	Line Voltage Each	†GAS CAPACITY (Cu. Ft. P.S. Hr.)			Max. Operating Press. Lb.	Lgth. over Body In.	Ctr. Line of Pipe to Top In.	†App. prox. Ship. Wt. Lb.	
			5-In.	1-In.	4-In.					
3/8	\$6.40	\$6.40	8	90	127	250	2	2 1/4	3 1/4	2
1/2	6.40	6.40	8	165	230	470	1	2 7/8	3 5/8	2 1/2
3/4	7.00	7.00	8	320	450	910	2/3	3 3/8	4	3
1	8.80	8.80	8	520	730	1470	1/3	4 1/8	4 1/8	4

*Price includes valve only (without transformer). If transformer is desired, order must so specify.

†-0.6 specific gravity.

‡Weights do not include transformers.

Line voltage valve available for 230 volts, 60-cycle, add 60 cents. On sizes up to 1 1/2-inch, for 115 volts, 50-cycle, no extra charge. Available on special order for d.c. or odd a.c. voltages and frequencies (4-week delivery), add \$2.00.

Available on special order (4 weeks delivery) for Butane or Propane, add \$2.00.

Valves from 3/8 to 1-inch inclusive, available for high pressure gas on order.

Larger sizes available.

Type K10-1 Mercoid Lever Valves



Designed for controlling light and heavy oils, water, air, steam, gas, and ammonia.

The lever-action develops six times the power of usual solenoid, making possible operation at very high pressures for corresponding port sizes.

Quiet in operation, two-wire, of packless construction and closes upon current failure.

Normally closed type; opens when energized.

Pipe size, 3/8 and 1/2 inch; 3/8-inch is standard.

Standard port sizes, 3/16, 1/8, and 1/4 inch.

Type K10-1, 3/8-Inch Pipe Size..... each \$11.00

Type K10-1, 1/2-Inch Pipe Size..... each 12.00

Other types available.

Type K-15 Mercoid Pilot Piston Operated Valves

Recommended for water, low viscosity oils (not heavier than No. 3) and gases where the maximum temperature does not exceed 240°F. Suitable for controlling low pressure steam not in excess of ten pounds pressure.

Full-ported in all sizes up to and including one inch and capable of handling large capacities with a minimum pressure drop.

Pipe Size, In.	Solenoid Size	Each
3/8	180	\$13.60
1/2	225	16.00
1/2	300	22.00
3/4	225	17.80
3/4	300	24.80
1	300	32.00
1	400	44.00
1 1/4	400	48.00
1 1/2	400	56.00
2	400	68.00



Dunco General Control Relays

Used for control of heaters, signals, small motors, etc.

Wiping contacts are of fine silver; the design of the shading coil insures quiet a.c. operation. Each relay is tested by two different inspection departments before shipment.

Available with any desired number of poles. Various types of housings can be furnished.

Midget Relays

Base size, 2 3/4 x 1 7/8 inches.

Coils furnished as specified: 6 to 220 volts, a.c.; or 2 to 230 volts, d.c.

Contacts: 110 volts a.c. 6 amperes; 220 volts a.c. 3 amperes; 115 volts d.c. 1 ampere. Non-inductive loads.



Type CDBX1

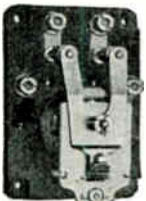
Type	Description	Each
ABTX1	S.P., D.B., Front Contact	\$3.75
ADBX1	D.P., S.B., Front Contact	4.75
BBTX1	S.P., D.B., Back Contact	3.75
BDBX1	D.P., S.B., Back Contact	4.75
CBTX1	S.P., D.B., D.T.	4.25
CDBX1	D.P., S.B., D.T.	5.25

Power Relays

Coils furnished as specified: 6 to 550 volts, a.c.; or 2 to 230 volts, d.c.

Contacts: 110 volts, a.c., 30 amperes; 220 volts, a.c., 25 amperes; 115 volts, d.c., 4 amperes. Double break types are rated 220 volts, a.c., 20 amperes, 115 volts d.c., 6 amperes. Non-inductive loads.

Types ABYT8 and ADBT8 approved for I-hp.



Type ABYT8

Type	Each	Description	Base Size Inches
ABYT8	\$6.50	S.P., D.B., Front Contact	4 1/4 x 3
ADBT8	8.50	D.P., S.B., Front Contact	4 1/4 x 3
ATBD8	9.75	T.P., S.B., Front Contact	4 1/4 x 3
BBUK8	8.25	S.P., D.B., Back Contact	5 x 3
BDBK8	9.50	D.P., S.B., Back Contact	5 x 3
BTBK8	10.75	T.P., S.B., Back Contact	5 x 3
CDBP8	11.00	D.P., S.B., D.T.	6 1/4 x 3
DSBT8	8.50	S.P., S.B., D.T., Separate Circuit	4 1/4 x 3
DDBP8	12.00	D.P., S.B., D.T., Separate Circuit	6 1/4 x 3

Dunco Mechanical Latch-In Electrical Release Relays

Used for push button control or similar applications.

Two coils: one coil closes contacts which latch closed; the other coil when energized trips the latch and opens the contacts.

Base size, 4 1/2 x 3 1/4 inches.

Available with any desired number of poles. Midget types are also available.



Type ABUY5N

Type	Each	Description	CONTACT RATING, AMPS.			
			110 V. A.C.	220 V. A.C.	115 V. D.C.	230 V. D.C.
ABUY5N	\$8.75	S.P., S.T., D.B.	30	20	6	1
ADBY5N	10.00	D.P., S.T., S.B.	30	25	4	.5
DSBY5N	10.00	S.P., D.T., S.B.	8	6	2	.5

Dunco Thermostatic Control Relays

Used for the control of heaters, refrigerator units, pressure, etc. Protective resistor is a part of the relay. Instrument contacts make but never break current.

For use with 3-wire H-L-C instrument or push button.

Used Where Control Circuit and Load are Fed by Same Line

Type	Each	RATING, AMPERES		Base Size Inches
		110 Volts A.C.	110 Volts D.C.	
ABYT8PO	\$8.25	30	6	4 1/4 x 3
ABTX1PO	5.00	6	1	2 3/4 x 1 7/8

Used Where Control Circuit and Load are Fed by Different Lines

Type	Each	110 Volts A.C.	110 Volts D.C.	Base Size Inches
ADBT8O	9.50	15	2	4 1/4 x 3
ADBX1O	5.75	6	1	2 3/4 x 1 7/8

Dunco Relay Sets for Low-Voltage Thermostat Control



Type RS239

Complete with relay and transformer mounted in sheet metal housing with external binding posts for thermostat connections.

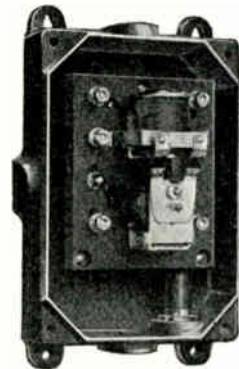
Used with 2-Wire Snap Action Thermostat

Type	Each	110 Volt A.C. RATING	
		Hp.	Amps.
RS239	\$7.00	1/4	6
RS71	10.75	1	30

Used with 3-Wire H-L-C Thermostat

Type	Each	110 Volt A.C. RATING
RS240	\$8.00	1/4
RS73	12.75	1

Dunco Telephone Auxiliary Signalling Relays



Type RS3A

Type RS2.—Relay and condenser in H3 sheet metal, hinged cover housing. Signal remains on as long as circuit is closed.

Type RS2..... each \$11.00

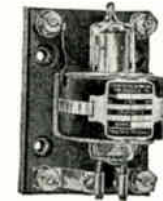
Type RSA2.—Same as Type RS2 except in W6 cast aluminum housing.

Type RSA2..... each \$15.00

Type RS3A.—Relay, condenser and push button in W6 cast aluminum weatherproof housing. After telephone circuit once energizes relay the signal remains on until relay is released.

Type RS3A..... each \$24.00

Dunco Mercury Plunger Relays



Type MR-1

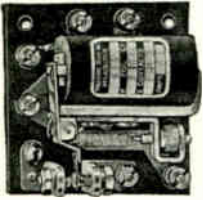
Contacts enclosed from corrosion, dust and dirt. Only one moving part.

Contacts single pole, either normally open or normally closed.

Add \$1.00 for coil voltages other than 110 or 220 volts, 60 cycles.

Type	Each	Normally	Contacts Amperes	Base Size Inches
MR-1	\$6.00	Open	{ 110 V., A.C.-30 } { 220 V., A.C.-20 }	3 1/2 x 2 1/2
MR-2	7.00	Closed		4 x 2 1/2
MR-6	6.00	Open	{ 115 V., D.C.-5 } { 230 V., D.C.-2 }	3 1/2 x 2 1/2
MR-7	7.00	Closed		4 x 2 1/2

Type S Dunco Sensitive Relays



The moving parts are balanced making the relay suitable for many applications where vibration is encountered.

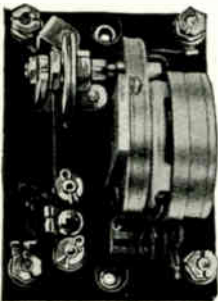
Two types are available—the contacts separate from the coil circuit and the contact interconnected with the coil circuit for use with contact making galvanometers or sensitive mercurial thermostats. Sensitivity 0.008 watts, d.c., 0.10 volt amperes at 60 cycles.

S.P., D.T. contacts rated 2 amperes at 110 volts, a.c., ¼ ampere at 115 volts d.c. Non-inductive loads.

Base size, 2½x2⅝ inches front connected. Relays with coils wound with wire up to and including 40-gage.

Type S For D.C. on Coil.....each \$6.00
Type S For A.C. on Coil.....each 6.50

Type TD-130 Dunco Time Delay Relays



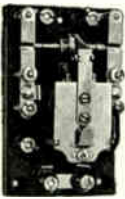
Many types of time delay relays are available including motor driven, both repeating and recycling, thermal, and inertia types.

This motor driven timer consists of a small synchronous motor driving a single cam at one rpm. The contacts close once per minute and the closure time is adjustable from 0 to 30 seconds. Contacts rated 10 amperes at 110 volts, a.c.

Motor for operation on 110 volts, 60 cycles, but may be furnished for other ratings at an increased price. Base size, 4¼x3 inches front connected.

Type TD-130.....each \$16.00

Type CX464 Dunco Ratchet Type Sequence Relays



Ratchet type sequence relays move their contacts when the coil is energized and then remain in this position until the coil is de-energized and again energized.

Has two poles and by factory adjustment of the cams may be made single pole, single throw, double break; double pole, single throw, single break; or single pole, double throw, single break.

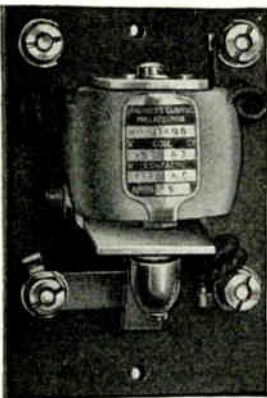
Contacts rated 110 volts, a.c., 20 amperes; 115 volts, d.c., 2 amperes.

Coils approximate 8 watts, a.c.; 4 watts, d.c. Base size, 5x3 inches.

Type CX464.....each \$14.00

Similar relays, except using midjet construction are available at \$8.00 and \$9.00.

Dunco Emergency Lamp Relays



Type CX1498

Designed to automatically cut in a standby or emergency lamp should the main lamp burn out.

If an auxiliary source of power (such as a storage battery) is available the relays may be connected to switch the emergency lamp into the auxiliary circuit should the main line voltage fail or the main lamp burn out.

The relay is equipped with coils of minimum voltage drop to operate in series with the main lamp, upon the failure of which the relay armature opens, closing a set of contacts and completing the circuit to the standby lamp. Contacts are fine silver with low resistance which practically eliminates voltage drop at the contacts.

Contacts: 110-220 volts, a.c., 800 watts; 115-230 volts, d.c., 100 watts.

Base size, 4x2¾ inches front connected.
Type CX1498, S.P., S.T., S.B.....each \$5.50
Type CX1500, S.P., S.T., D.B.....each 5.50

Buss One-Time Fuses

Non-Renewable—250 to 600 Volts

Buss One-Time Fuses are guaranteed, with good contact, to operate perfectly at any overload without charring or burning the fuse case.

Buss One-Time Cartridge Fuses are listed as standard by the Underwriters' Laboratories in all sizes up to and including 600 amperes.

Ferrule Contact—1 to 60 Amperes



Cap. Amp.	No. in Carton	250 Volts			600 Volts				
		No.	Each	Lgth. In. per 100	Wt. Lb. per 100	No.	Each	Lgth. In. per 100	Wt. Lb. per 100
*1	10	25001	\$.15	2	3.8	60001	\$.50	5	14.5
*3	10	25003	.15	2	3.8	60003	.50	5	14.5
*6	10	25006	.15	2	3.8	60006	.50	5	14.5
*10	10	25010	.15	2	3.8	60010	.50	5	14.5
15	10	25015	.15	2	3.8	60015	.50	5	14.5
20	10	25020	.15	2	3.8	60020	.50	5	14.5
25	10	25025	.15	2	3.8	60025	.50	5	14.5
30	10	25030	.15	2	3.8	60030	.50	5	14.5
35	10	25035	.30	3	10.0	60035	.80	5½	26.0
40	10	25040	.30	3	10.0	60040	.80	5½	26.0
45	10	25045	.30	3	10.0	60045	.80	5½	26.0
50	10	25050	.30	3	10.0	60050	.80	5½	26.0
60	10	25060	.30	3	10.0	60060	.80	5½	26.0

Knife Blade Contact—70 to 600 Amperes



Cap. Amp.	No. in Carton	250 Volts			600 Volts				
		No.	Each	Lgth. In. per 100	Wt. Lb. per 100	No.	Each	Lgth. In. per 100	Wt. Lb. per 100
70	5	25070	\$.90	5⅞	32.0	60070	\$1.80	7⅞	56
80	5	25080	.90	5⅞	32.0	60080	1.80	7⅞	56
90	5	25090	.90	5⅞	32.0	60090	1.80	7⅞	56
100	5	25100	.90	5⅞	32.0	60100	1.80	7⅞	56
110	1	25110	2.00	7⅞	79.0	60110	3.50	9⅞	124
125	1	25125	2.00	7⅞	79.0	60125	3.50	9⅞	124
150	1	25150	2.00	7⅞	79.0	60150	3.50	9⅞	124
175	1	25175	2.00	7⅞	79.0	60175	3.50	9⅞	124
200	1	25200	2.00	7⅞	79.0	60200	3.50	9⅞	124
225	1	25225	3.60	8⅞	165.0	60225	7.00	11⅞	303
250	1	25250	3.60	8⅞	165.0	60250	7.00	11⅞	303
300	1	25300	3.60	8⅞	165.0	60300	7.00	11⅞	303
350	1	25350	3.60	8⅞	165.0	60350	7.00	11⅞	303
400	1	25400	3.60	8⅞	165.0	60400	7.00	11⅞	303
450	1	25450	5.50	10⅞	276.0	60450	10.00	13⅞	463
500	1	25500	5.50	10⅞	276.0	60500	10.00	13⅞	463
600	1	25600	5.50	10⅞	276.0	60600	10.00	13⅞	463

*Except for instrument protection, Fusetrons should be used instead of small size fuses, as they give true and complete protection while their remarkable time-lag prevents useless blows from starting currents, etc.

Sizes not listed, in any quantity, take price of next larger amperage, plus a set-up charge of \$2.50 on each size or type on each shipment.

Buss Super-Lag Renewable Fuses and Renewal Links



3 to 60 Amperes



70 to 600 Amperes



8 to 60 Amperes



70 to 200 Amperes

Fuses. Buss Super-Lag Renewable Fuses prevent money-wasting shutdowns, keep circuits in operation, and keep machines running and workers on the job. Patent fuse-case design and Super-Lag development prevent them from blowing needlessly.

Costs are often cut in half on new motor installations because Code (Paragraph 4347) permits smaller size fused safety switches, fuse panels or fuse blocks if Buss Super-Lag Fuses are used.

Every Buss Fuse carries inspection label of Underwriters' Laboratories.

Renewal Links. The Super-Lag construction of Buss Renewal Links keeps them from blowing on harmless overloads that would blow ordinary fuses.

Links are made in one piece in all sizes. This makes renewal handy and prevents poor contact developing while fuse is in use.

Packed a small quantity in sealed boxes for convenience, and to prevent dust, moisture or oxidation from affecting them.

Interchangeable with all makes of standard fuse links.

250 Volts										600 Volts									
Complete Fuses					Renewal Links					Complete Fuses					Renewal Links				
Amp.	No.	Each	Length Overall Inches	Ctn. Qty.	Weight Pounds per 100	No.	Each	Ctn. Qty.	Weight Pounds per 100	Amp.	No.	Each	Length Overall Inches	Ctn. Qty.	Weight Pounds per 100	No.	Each	Ctn. Qty.	Weight Pounds per 100
3	1003	\$.40	2	10	5.5	1103	\$.02	100	.25	3	1303	\$1.00	5	10	18	1403	\$.05	100	1
6	1006	.40	2	10	5.5	1106	.02	100	.25	6	1306	1.00	5	10	18	1406	.05	100	1
10	1010	.40	2	10	5.5	1110	.02	100	.25	10	1310	1.00	5	10	18	1410	.05	100	1
15	1012	.40	2	10	5.5	1112	.02	100	.25	15	1312	1.00	5	10	18	1412	.05	100	1
20	1013	.40	2	10	5.5	1113	.02	100	.25	20	1313	1.00	5	10	18	1413	.05	100	1
25	1014	.40	2	10	5.5	1114	.02	100	.25	25	1314	1.00	5	10	18	1414	.05	100	1
30	1015	.40	2	10	5.5	1115	.02	100	.25	30	1315	1.00	5	10	18	1415	.05	100	1
35	1016	.80	3	10	14	1116	.04	100	1	35	1316	1.60	5 1/2	10	36	1416	.08	100	3
40	1017	.80	3	10	14	1117	.04	100	1	40	1317	1.60	5 1/2	10	36	1417	.08	100	3
45	1018	.80	3	10	14	1118	.04	100	1	45	1318	1.60	5 1/2	10	36	1418	.08	100	3
50	1019	.80	3	10	14	1119	.04	100	1	50	1319	1.60	5 1/2	10	36	1419	.08	100	3
60	1021	.80	3	10	14	1121	.04	100	1	60	1321	1.60	5 1/2	10	36	1421	.08	100	3
70	1023	1.80	5 7/8	5	46	1123	.09	50	2	70	1323	3.60	7 7/8	5	83	1423	.18	50	5
80	1025	1.80	5 7/8	5	46	1125	.09	50	2	80	1325	3.60	7 7/8	5	83	1425	.18	50	5
90	1027	1.80	5 7/8	5	46	1127	.09	50	2	90	1327	3.60	7 7/8	5	83	1427	.18	50	5
100	1029	1.80	5 7/8	5	46	1129	.09	50	2	100	1329	3.60	7 7/8	5	83	1429	.18	50	5
110	1030	4.00	7 1/8	1	109	1130	.20	25	5	110	1330	7.00	9 5/8	1	183	1430	.35	25	14
125	1031	4.00	7 1/8	1	109	1131	.20	25	5	125	1331	7.00	9 5/8	1	183	1431	.35	25	14
150	1032	4.00	7 1/8	1	109	1132	.20	25	5	150	1332	7.00	9 5/8	1	183	1432	.35	25	14
175	1033	4.00	7 1/8	1	109	1133	.20	25	5	175	1333	7.00	9 5/8	1	183	1433	.35	25	14
200	1034	4.00	7 1/8	1	109	1134	.20	25	5	200	1334	7.00	9 5/8	1	183	1434	.35	25	14
225	1035	7.20	8 5/8	1	266	1135	.36	25	11	225	1335	14.00	11 5/8	1	373	1435	.70	25	29
250	1036	7.20	8 5/8	1	266	1136	.36	25	11	250	1336	14.00	11 5/8	1	373	1436	.70	25	29
300	1038	7.20	8 5/8	1	266	1138	.36	25	11	300	1338	14.00	11 5/8	1	373	1438	.70	25	29
350	1040	7.20	8 5/8	1	266	1140	.36	25	11	350	1340	14.00	11 5/8	1	373	1440	.70	25	29
400	1042	7.20	8 5/8	1	266	1142	.36	25	11	400	1342	14.00	11 5/8	1	373	1442	.70	25	29
450	1043	11.00	10 3/8	1	389	1143	.55	10	16	450	1343	20.00	13 3/8	1	573	1443	1.00	10	37
500	1044	11.00	10 3/8	1	389	1144	.55	10	16	500	1344	20.00	13 3/8	1	573	1444	1.00	10	37
600	1046	11.00	10 3/8	1	389	1146	.55	10	16	600	1346	20.00	13 3/8	1	573	1446	1.00	10	37

Sizes not listed take price of next larger size, on any quantity, plus a set-up charge of \$2.50 on each size or type on each shipment. Fuses and links of the same size and type in the same shipment take only one set-up charge for such size.

Dimensions of Fuses

250 Volts							600 Volts						
Amperes	Length Overall Inches	Diameter of Tube Inches	Diameter over Ferrules Inches	CONTACT BLADE INCHES			Amperes	Length Overall Inches	Diameter of Tube Inches	Diameter over Ferrules Inches	CONTACT BLADE INCHES		
				Thick-ness	Width	Length					Thick-ness	Width	Length
1 to 30	2	1/2	3/16	...	...	...	1 to 30	5	3/4	1 1/16	...	...	...
35 to 60	3	3/4	1 1/16	...	...	...	35 to 60	5 1/2	1	1 1/16	...	...	...
70 to 100	5 7/8	1	...	1/8	3/4	1	70 to 100	7 7/8	1 1/4	...	1/8	3/4	1
110 to 200	7 1/8	1 1/2	...	3/16	1 1/8	1 3/8	110 to 200	9 5/8	1 3/4	...	3/16	1 1/8	1 3/8
225 to 400	8 5/8	2	...	1/4	1 5/8	1 7/8	225 to 400	11 5/8	2 1/2	...	1/4	1 5/8	1 7/8
450 to 600	10 3/8	2 1/2	...	1/4	2	2 1/4	450 to 600	13 3/8	3	...	1/4	2	2 1/4

Economy Renewable Cartridge Fuses

250 and 600 Volts

Economy Fuses always operate at rated capacities. The drop out renewal link is quickly and easily replaced and the restoration of a blown Economy Fuse to its original efficiency is the work of a few moments only.

These fuses operate successfully under all conditions of service without filling material of any description. Fuses bear the "Und. Inspected" label in all capacities from 0 to 600 amperes in both 250 and 600 volts.

Complete Fuses—Ferrule Type—3 to 60 Amperes



Amperes	Car-ton	250 Volts			600 Volts		
		Cat. No.	Wt., Lbs. per Carton	Each	Cat. No.	Wt., Lbs. per Carton	Each
3	10	F- 325	5/8	\$.40	F- 305	1 5/8	\$1.00
6	10	F- 625	5/8	.40	F- 605	1 5/8	1.00
10	10	F-1025	5/8	.40	F-1005	1 5/8	1.00
15	10	F-1525	5/8	.40	F-1505	1 5/8	1.00
20	10	F-2025	5/8	.40	F-2005	1 5/8	1.00
25	10	F-2525	5/8	.40	F-2505	1 5/8	1.00
30	10	F-3025	5/8	.40	F-3005	1 5/8	1.00
35	10	F-3525	1 3/8	.80	F-3505	3 3/8	1.60
40	10	F-4025	1 3/8	.80	F-4005	3 3/8	1.60
45	10	F-4525	1 3/8	.80	F-4505	3 3/8	1.60
50	10	F-5025	1 3/8	.80	F-5005	3 3/8	1.60
60	10	F-6025	1 3/8	.80	F-6005	3 3/8	1.60

Dimensions

Amperes	250 Volts		600 Volts	
	Length Inches	Diameter Inches	Length Inches	Diameter Inches
1-30	2	9/16	5	1 1/16
35-60	3	1 3/16	5 1/2	1 1/16

Complete Fuses—Knife Blade Type—61 to 600 Amperes



Amperes	Car-ton	250 Volts			600 Volts		
		Cat. No.	Wt., Lbs. per Carton	Each	Cat. No.	Wt., Lbs. per Carton	Each
70	5	F- 7025	2	\$1.80	F- 7005	3 3/8	\$3.60
80	5	F- 8025	2	1.80	F- 8005	3 3/8	3.60
90	5	F- 9025	2	1.80	F- 9005	3 3/8	3.60
100	5	F-10025	2	1.80	F-10005	3 3/8	3.60
110	1	F-11025	1 1/16	4.00	F-11005	1 3/4	7.00
125	1	F-12525	1 1/16	4.00	F-12505	1 3/4	7.00
150	1	F-15025	1 1/16	4.00	F-15005	1 3/4	7.00
175	1	F-17525	1 1/16	4.00	F-17505	1 3/4	7.00
200	1	F-20025	1 1/16	4.00	F-20005	1 3/4	7.00
225	1	F-22525	2 1/8	7.20	F-22505	3 3/8	14.00
250	1	F-25025	2 1/8	7.20	F-25005	3 3/8	14.00
300	1	F-30025	2 1/8	7.20	F-30005	3 3/8	14.00
350	1	F-35025	2 1/8	7.20	F-35005	3 3/8	14.00
400	1	F-40025	2 1/8	7.20	F-40005	3 3/8	14.00
450	1	F-45025	3 1/2	11.00	F-45005	5 1/2	20.00
500	1	F-50025	3 1/2	11.00	F-50005	5 1/2	20.00
600	1	F-60025	3 1/2	11.00	F-60005	5 1/2	20.00

Dimensions

Amperes	250 Volts		600 Volts	
	Length Inches	Blade Width Inches	Length Inches	Blade Width Inches
61-100	5 7/8	3/4	7 7/8	3/4
110-200	7 1/8	1 1/8	9 5/8	1 1/8
225-400	8 5/8	1 5/8	11 5/8	1 5/8
450-600	10 3/8	2	13 3/8	2

Economy Renewal Links

Ferrule Type—3 to 60 Amperes



250 Volts				600 Volts					
Cat. No.	Each	Am-peres	Car-ton	Wt. Lbs. per Carton	Cat. No.	Each	Am-peres	Car-ton	Wt. Lbs. per Carton
R-203	\$.02	3	100	3/16	R-603	\$.05	3	100	9/16
R-206	.02	6	100	3/16	R-606	.05	6	100	9/16
R-210	.02	10	100	3/16	R-610	.05	10	100	9/16
R-215	.02	15	100	3/16	R-615	.05	15	100	9/16
R-220	.02	20	100	3/16	R-620	.05	20	100	9/16
R-225	.02	25	100	3/16	R-625	.05	25	100	9/16
R-230	.02	30	100	3/16	R-630	.05	30	100	9/16
R-235	.04	35	100	5/8	R-635	.08	35	100	1 1/16
R-240	.04	40	100	5/8	R-640	.08	40	100	1 1/16
R-245	.04	45	100	5/8	R-645	.08	45	100	1 1/16
R-250	.04	50	100	5/8	R-650	.08	50	100	1 1/16
R-260	.04	60	100	5/8	R-660	.08	60	100	1 1/16

Knife Blade Type—70 to 1000 Amperes



250 Volts				600 Volts					
Cat. No.	Each	Am-peres	Car-ton	Wt. Lbs. per Carton	Cat. No.	Each	Am-peres	Car-ton	Wt. Lbs. per Carton
R-270	\$.09	70	50	3/8	R-670	\$.18	70	50	1
R-280	.09	80	50	3/8	R-680	.18	80	50	1
R-290	.09	90	50	3/8	R-690	.18	90	50	1
R-2100	.09	100	50	3/8	R-6100	.18	100	50	1
R-2110	.20	110	25	1/16	R-6110	.35	110	25	1 1/16
R-2125	.20	125	25	1/16	R-6125	.35	125	25	1 1/16
R-2150	.20	150	25	1/16	R-6150	.35	150	25	1 1/16
R-2175	.20	175	25	1/16	R-6175	.35	175	25	1 1/16
R-2200	.20	200	25	1/16	R-6200	.35	200	25	1 1/16
R-2225	.36	225	25	1 5/16	R-6225	.70	225	25	2 15/16
R-2250	.36	250	25	1 5/16	R-6250	.70	250	25	2 15/16
R-2300	.36	300	25	1 5/16	R-6300	.70	300	25	2 15/16
R-2350	.36	350	25	1 5/16	R-6350	.70	350	25	2 15/16
R-2400	.36	400	25	1 5/16	R-6400	.70	400	25	2 15/16
R-2450	.55	450	10	1 1/16	R-6450	1.00	450	10	1 7/8
R-2500	.55	500	10	1 1/16	R-6500	1.00	500	10	1 7/8
R-2600	.55	600	10	1 1/16	R-6600	1.00	600	10	1 7/8
R-2800	1.20	800	5	1 1/16	R-6800	1.50	800	5	1
R-21000	1.50	1000	5	1	R-61000	1.80	1000	5	1

Ideal Fuse Pullers



Designed to eliminate danger of pulling and replacing cartridge fuses by hand and bending of fuse clips through improper removal. Also adapted for adjusting loose cutout clips, handling laboratory test tubes, live electrical parts, etc.

Approved as standard by safety departments of thousands of industrial plants. Made in four handy sizes.

Midget Size

For handling small fuses, grid leaks, etc., 1/4 to 1/2 inch in diameter. Has 3 laminations, 5 inches long.

Each..... \$.45

Pocket Size

A popular size for general use. For fuses 0 to 200 amperes, 250 volts and 1 to 100 amperes, 600 volts. Has 5 laminations, 7 1/2 inches long.

Each..... \$ 1.25

Giant Size

For fuses 100 to 600 amperes, 250 volts and 60 to 400 amperes, 600 volts. Has 7 laminations, 12 inches long.

Each..... \$ 3.75

Jumbo Size

A large powerful tool for handling fuses 200 to 800 amperes, 250 volts and 200 to 600 amperes, 600 volts. Has 9 laminations, 20 inches long.

Each..... \$ 11.25

Eco Non-Indicating Non-Renewable Enclosed Fuses

Sold under the label service of Underwriters' Laboratories. Made of heavy fiber tubing. Caps are permanently rolled on the fiber tube, not merely crimped. Caps on ferrule type ECO fuses are pierced without distorting out-of-round, and the piercing not only permanently prevents relative movement, but it also provides full clip contact and a means for venting.

Heavy copper lead-in terminals are used throughout and thereby provide accurate and dependable rating and performance. Unexcelled for uniformity of current-time operation.

Ferrule Type



Cap. Amps.	Carton Quan.	250 Volts		600 Volts	
		No.	Each	No.	Each
1	10	1101	\$.15	1601	\$.50
3	10	1103	.15	1603	.50
6	10	1106	.15	1606	.50
10	10	1110	.15	1610	.50
15	10	1115	.15	1615	.50
20	10	1120	.15	1620	.50
25	10	1125	.15	1625	.50
30	10	1130	.15	1630	.50
35	10	1135	.30	1635	.80
40	10	1140	.30	1640	.80
45	10	1145	.30	1645	.80
50	10	1150	.30	1650	.80
60	10	1160	.30	1660	.80

Knife Blade Type



Cap. Amps.	Carton Quan.	250 Volts		600 Volts	
		No.	Each	No.	Each
70	5	11070	\$.90	16070	\$1.80
80	5	11080	.90	16080	1.80
90	5	11090	.90	16090	1.80
100	5	11100	.90	16100	1.80
110	1	11110	2.00	16110	3.50
125	1	11125	2.00	16125	3.50
150	1	11150	2.00	16150	3.50
175	1	11175	2.00	16175	3.50
200	1	11200	2.00	16200	3.50
225	1	11225	3.60	16225	7.00
250	1	11250	3.60	16250	7.00
300	1	11300	3.60	16300	7.00
350	1	11350	3.60	16350	7.00
400	1	11400	3.60	16400	7.00
450	1	11450	5.50	16450	10.00
500	1	11500	5.50	16500	10.00
600	1	11600	5.50	16600	10.00

No. 10 Ideal Combination Test-Lite and Fuse Puller



For testing, removing, or inserting fuses from 30 to 100 amperes capacity, testing circuits of from 110 to 550 volts, handling all types of live electrical parts, adjusting loose cut-out clips, etc.

Made of reinforced bakelite. Similar in design to a pair of pliers. Test pins are mounted in handle ends and are adjusted to various spans by opening or closing the handles. Test lite is enclosed in handle to safeguard against breakage.

Length overall, 7 inches.

No. 10.....each \$2.50
18-Inch Flexible Leads.....each .44

Jefferson Super-Lag Renewable Enclosed Fuses

Care should be taken to insure clean contact surfaces between the copper blades, renewals and washers. The nut should always be drawn up tight.

Ferrule Type



Cap. Amp.	Carton	250 Volts			800 Volts		
		Cat. No.	Per 100	Wt., Lbs. Per 100	Cat. No.	Per 100	Wt., Lbs. Per 100
3	10	391-003	\$40.00	5 ³ / ₄	393-003	\$100.00	19
6	10	391-006	40.00	5 ³ / ₄	393-006	100.00	19
10	10	391-010	40.00	5 ³ / ₄	393-010	100.00	19
15	10	391-015	40.00	5 ³ / ₄	393-015	100.00	19
20	10	391-020	40.00	5 ³ / ₄	393-020	100.00	19
25	10	391-025	40.00	5 ³ / ₄	393-025	100.00	19
30	10	391-030	40.00	5 ³ / ₄	393-030	100.00	19
35	10	391-035	80.00	14 ³ / ₄	393-035	160.00	37
40	10	391-040	80.00	14 ³ / ₄	393-040	160.00	37
45	10	391-045	80.00	14 ³ / ₄	393-045	160.00	37
50	10	391-050	80.00	14 ³ / ₄	393-050	160.00	37
60	10	391-060	80.00	14 ³ / ₄	393-060	160.00	37

Dimensions

Cap. Amp.	Lgth. Over All In.	250 Volts		Lgth. Over All In.	800 Volts	
		Diam. Tube In.	Diam. Ferrule In.		Diam. Tube In.	Diam. Ferrule In.
3-30	2	1/2	9/16	5	3/4	1 1/8
35-60	3	3/4	1 1/16	5 1/2	1	1 1/16

Knife Blade Type



Cap. Amp.	Carton	250 Volts			800 Volts		
		Cat. No.	Per 100	Wt., Lbs. Per 100	Cat. No.	Per 100	Wt., Lbs. Per 100
70	5	391-070	\$180.00	46	393-070	\$360.00	83
80	5	391-080	180.00	46	393-080	360.00	83
90	5	391-090	180.00	46	393-090	360.00	83
100	5	391-100	180.00	46	393-100	360.00	83
110	1	391-110	400.00	109	393-110	700.00	183
125	1	391-125	400.00	109	393-125	700.00	183
150	1	391-150	400.00	109	393-150	700.00	183
175	1	391-175	400.00	109	393-175	700.00	183
200	1	391-200	400.00	109	393-200	700.00	183
225	1	391-225	720.00	266	393-225	1400.00	373
250	1	391-250	720.00	266	393-250	1400.00	373
300	1	391-300	720.00	266	393-300	1400.00	373
350	1	391-350	720.00	266	393-350	1400.00	373
400	1	391-400	720.00	266	393-400	1400.00	373
450	1	391-450	1100.00	389	393-450	2000.00	573
500	1	391-500	1100.00	389	393-500	2000.00	573
600	1	391-600	1100.00	389	393-600	2000.00	573

Dimensions

Cap. Amp.	Lgth. Over All In.	250 Volts				Lgth. Over All In.	800 Volts			
		Diam. Tube In.	Width Blade In.	Thick. Blade In.	Diam. Tube In.		Width Blade In.	Thick. Blade In.		
70-100	5 7/8	1	3/4	1/8	7 7/8	1 1/4	3/4	1/8		
110-200	7 7/8	1 1/2	1 1/8	3/16	9 7/8	1 3/4	1 1/8	3/16		
225-400	8 5/8	2	1 5/8	1/4	11 5/8	2 1/2	1 5/8	1/4		
450-600	10 5/8	2 1/2	2	1/4	13 5/8	3	2	1/4		

Jefferson Union Renewable Enclosed Fuses

250 and 600 Volts

Listed As Standard by Underwriters' Laboratories

Ferrule Type
3 to 60 Amperes



The ferrule type fuse is quick and easy to renew. No loose washers, both ends open for inspection and cleaning, and the link bent at one end which automatically adjusts it to the proper length.

Only three simple parts.

Amperes Carton	250 Volts			600 Volts		
	Cat. No.	Per 100	Wt. Lbs. per 100	Cat. No.	Per 100	Wt. Lbs. per 100
3 10	380-003	\$40.00	5 1/2	382-003	\$100.00	18 1/2
6 10	380-006	40.00	5 1/2	382-006	100.00	18 1/2
10 10	380-010	40.00	5 1/2	382-010	100.00	18 1/2
15 10	380-015	40.00	5 1/2	382-015	100.00	18 1/2
20 10	380-020	40.00	5 1/2	382-020	100.00	18 1/2
25 10	380-025	40.00	5 1/2	382-025	100.00	18 1/2
30 10	380-030	40.00	5 1/2	382-030	100.00	18 1/2
35 10	380-035	80.00	14 1/4	382-035	160.00	35
40 10	380-040	80.00	14 1/4	382-040	160.00	35
45 10	380-045	80.00	14 1/4	382-045	160.00	35
50 10	380-050	80.00	14 1/4	382-050	160.00	35
60 10	380-060	80.00	14 1/4	382-060	160.00	35

Dimensions

Amperes	250 Volts			600 Volts		
	Size Overall Inches	Diam. Ferrule Inches	Size Tube Inches	Size Overall Inches	Diam. Ferrule Inches	Size Tube Inches
1-30	2	9/16	1 1/2	5	1 1/16	3/4
35-60	3	1 3/16	3/4	5 1/2	1 1/16	1

Knife Blade Type

70 to 600 Amperes



Jefferson Union Renewable Fuses are assembled in casings of extreme durability, from which all trace of volatilized link metal can be quickly removed and in which all threads are protected from molten metal. The renewability of such a fuse will continue after any number of blows.

In addition to these important advantages Jefferson Union Renewable Fuses can be renewed with exceptional speed. They are made in all standard ratings.

Amperes Carton	250 Volts			600 Volts		
	Cat. No.	Per 100	Wt. Lbs. per 100	Cat. No.	Per 100	Wt. Lbs. per 100
70 5	380-070	\$180.00	45	382-070	\$360.00	67 1/2
80 5	380-080	180.00	45	382-080	360.00	67 1/2
90 5	380-090	180.00	45	382-090	360.00	67 1/2
100 5	380-100	180.00	45	382-100	360.00	67 1/2
110 1	380-110	400.00	110	382-110	700.00	135
125 1	380-125	400.00	110	382-125	700.00	135
150 1	380-150	400.00	110	382-150	700.00	135
175 1	380-175	400.00	110	382-175	700.00	135
200 1	380-200	400.00	110	382-200	700.00	135
225 1	380-225	720.00	212 1/2	382-225	1400.00	350
250 1	380-250	720.00	212 1/2	382-250	1400.00	350
300 1	380-300	720.00	212 1/2	382-300	1400.00	350
350 1	380-350	720.00	212 1/2	382-350	1400.00	350
400 1	380-400	720.00	212 1/2	382-400	1400.00	350
450 1	380-450	1100.00	337 1/2	382-450	2000.00	545
500 1	380-500	1100.00	337 1/2	382-500	2000.00	545
600 1	380-600	1100.00	337 1/2	382-600	2000.00	545

Dimensions

Amperes	250 Volts			600 Volts		
	Length Overall Inches	Width Blade Inches	Thickness Blade Inches	Length Overall Inches	Width Blade Inches	Thickness Blade Inches
70-100	5 7/8	3/4	1/8	7 7/8	3/4	1/8
110-200	7 1/8	1 1/8	3/16	9 5/8	1 1/8	3/16
225-400	8 5/8	1 5/8	1/4	11 5/8	1 5/8	1/4
450-600	10 3/8	2	1/4	13 3/8	2	1/4

Jefferson Super-Lag Renewable Links



Cap. Amp.	Carton	250 Volts			600 Volts		
		No.	Per 100	Wt., Lb. per 100	No.	Per 100	Wt., Lb. per 100
3	100	392-003	\$2.00	1/4	394-003	\$5.00	1
6	100	392-006	2.00	1/4	394-006	5.00	1
10	100	392-010	2.00	1/4	394-010	5.00	1
15	100	392-015	2.00	1/4	394-015	5.00	1
20	100	392-020	2.00	1/4	394-020	5.00	1
25	100	392-025	2.00	1/4	394-025	5.00	1
30	100	392-030	2.00	1/4	394-030	5.00	1
35	100	392-035	4.00	1	394-035	8.00	3
40	100	392-040	4.00	1	394-040	8.00	3
45	100	392-045	4.00	1	394-045	8.00	3
50	100	392-050	4.00	1	394-050	8.00	3
60	100	392-060	4.00	1	394-060	8.00	3

Knife Blade Type

70	50	392-070	\$9.00	2	394-070	\$18.00	5.3
80	50	392-080	9.00	2	394-080	18.00	5.3
90	50	392-090	9.00	2	394-090	18.00	5.3
100	50	392-100	9.00	2	394-100	18.00	5.3
110	25	392-110	20.00	5	394-110	35.00	14.6
125	25	392-125	20.00	5	394-125	35.00	14.6
150	25	392-150	20.00	5	394-150	35.00	14.6
175	25	392-175	20.00	5	394-175	35.00	14.6
200	25	392-200	20.00	5	394-200	35.00	14.6
225	25	392-225	36.00	11	394-225	70.00	29
250	25	392-250	36.00	11	394-250	70.00	29
300	25	392-300	36.00	11	394-300	70.00	29
350	25	392-350	36.00	11	394-350	70.00	29
400	25	392-400	36.00	11	394-400	70.00	29
450	10	392-450	55.00	16	394-450	100.00	37
500	10	392-500	55.00	16	394-500	100.00	37
600	10	392-600	55.00	16	394-600	100.00	37

Jefferson Union Renewable Fuse Links

Ferrule Type



Amperes Carton	250 Volts			600 Volts			
	Cat. No.	Per 100	Wt. Lbs. per 100	Cat. No.	Per 100	Wt. Lbs. per 100	
3	100	381-003	\$2.00	1/4	383-003	\$5.00	5/8
6	100	381-006	2.00	1/4	383-006	5.00	5/8
10	100	381-010	2.00	1/4	383-010	5.00	5/8
15	100	381-015	2.00	1/4	383-015	5.00	5/8
20	100	381-020	2.00	1/4	383-020	5.00	5/8
25	100	381-025	2.00	1/4	383-025	5.00	5/8
30	100	381-030	2.00	1/4	383-030	5.00	5/8
35	100	381-035	4.00	1/2	383-035	8.00	2 3/8
40	100	381-040	4.00	1/2	383-040	8.00	2 3/8
45	100	381-045	4.00	1/2	383-045	8.00	2 3/8
50	100	381-050	4.00	1/2	383-050	8.00	2 3/8
60	100	381-060	4.00	1/2	383-060	8.00	2 3/8

Knife Blade Type

70	50	381-070	9.00	1 3/8	383-070	18.00	2 5/8
80	50	381-080	9.00	1 3/8	383-080	18.00	2 5/8
90	50	381-090	9.00	1 3/8	383-090	18.00	2 5/8
100	50	381-100	9.00	1 3/8	383-100	18.00	2 5/8
110	25	381-110	20.00	2 3/8	383-110	35.00	7 3/8
125	25	381-125	20.00	2 3/8	383-125	35.00	7 3/8
150	25	381-150	20.00	2 3/8	383-150	35.00	7 3/8
175	25	381-175	20.00	2 3/8	383-175	35.00	7 3/8
200	25	381-200	20.00	2 3/8	383-200	35.00	7 3/8
225	25	381-225	36.00	7	383-225	70.00	18
250	25	381-250	36.00	7	383-250	70.00	18
300	25	381-300	36.00	7	383-300	70.00	18
350	25	381-350	36.00	7	383-350	70.00	18
400	25	381-400	36.00	7	383-400	70.00	18
450	10	381-450	55.00	10	383-450	100.00	26
500	10	381-500	55.00	10	383-500	100.00	26
600	10	381-600	55.00	10	383-600	100.00	26

Union Indicating Non-Renewable Enclosed Fuses Ferrule Contact Style



Amp.	Car-ton	250 Volts			600 Volts		
		No.	Each	Wt. Lbs. 10 Full Cartons	No.	Each	Wt. Lbs. 10 Full Cartons
3	10	386-003	\$.15	4	387-003	\$.50	14 ³ / ₄
6	10	386-006	.15	4	387-006	.50	14 ³ / ₄
10	10	386-010	.15	4	387-010	.50	14 ³ / ₄
15	10	386-015	.15	4	387-015	.50	14 ³ / ₄
20	10	386-020	.15	4	387-020	.50	14 ³ / ₄
25	10	386-025	.15	4	387-025	.50	14 ³ / ₄
30	10	386-030	.15	4	387-030	.50	14 ³ / ₄
35	10	386-035	.30	10 ¹ / ₂	387-035	.80	24 ³ / ₄
40	10	386-040	.30	10 ¹ / ₂	387-040	.80	24 ³ / ₄
45	10	386-045	.30	10 ¹ / ₂	387-045	.80	24 ³ / ₄
50	10	386-050	.30	10 ¹ / ₂	387-050	.80	24 ³ / ₄
60	10	386-060	.30	10 ¹ / ₂	387-060	.80	24 ³ / ₄

Dimensions

Amperes	250 Volts		600 Volts	
	Length Over All Inches	Diameter Tube Inches	Length Over All Inches	Diameter Tube Inches
1-30	2	1 ¹ / ₂	5	3 ³ / ₄
35-60	3	3 ³ / ₄	5 ¹ / ₂	1

Gem Non-Indicating Enclosed Fuses Ferrule Style



Amp.	Car-ton	250 Volts			600 Volts		
		No.	Each	Wt., Lb. per 100	No.	Each	Wt., Lb. per 100
1	10	384-001	\$.15	4	385-001	\$.50	14 ³ / ₄
3	10	384-003	.15	4	385-003	.50	14 ³ / ₄
6	10	384-006	.15	4	385-006	.50	14 ³ / ₄
10	10	384-010	.15	4	385-010	.50	14 ³ / ₄
15	10	384-015	.15	4	385-015	.50	14 ³ / ₄
20	10	384-020	.15	4	385-020	.50	14 ³ / ₄
25	10	384-025	.15	4	385-025	.50	14 ³ / ₄
30	10	384-030	.15	4	385-030	.50	14 ³ / ₄
35	10	384-035	.30	10 ¹ / ₂	385-035	.80	24 ³ / ₄
40	10	384-040	.30	10 ¹ / ₂	385-040	.80	24 ³ / ₄
45	10	384-045	.30	10 ¹ / ₂	385-045	.80	24 ³ / ₄
50	10	384-050	.30	10 ¹ / ₂	385-050	.80	24 ³ / ₄
60	10	384-060	.30	10 ¹ / ₂	385-060	.80	24 ³ / ₄

Dimensions

Amperes	250 Volts		600 Volts	
	Length Over All Inches	Diameter Tube Inches	Length Over All Inches	Diameter Tube Inches
1-30	2	1 ¹ / ₂	5	3 ³ / ₄
35-60	3	3 ³ / ₄	5 ¹ / ₂	1

Knife-Blade Contact Style



Amp.	Car-ton	250 Volts			600 Volts		
		No.	Each	Wt. Lbs. 10 Full Cartons	No.	Each	Wt. Lbs. 10 Full Cartons
70	5	386-070	\$.90	15	387-070	\$1.80	27
80	5	386-080	.90	15	387-080	1.80	27
90	5	386-090	.90	15	387-090	1.80	27
100	5	386-100	.90	15	387-100	1.80	27
110	1	386-110	2.00	7 ³ / ₄	387-110	3.50	12 ¹ / ₂
125	1	386-125	2.00	7 ³ / ₄	387-125	3.50	12 ¹ / ₂
150	1	386-150	2.00	7 ³ / ₄	387-150	3.50	12 ¹ / ₂
175	1	386-175	2.00	7 ³ / ₄	387-175	3.50	12 ¹ / ₂
200	1	386-200	2.00	7 ³ / ₄	387-200	3.50	12 ¹ / ₂
225	1	386-225	3.60	17 ¹ / ₄	387-225	7.00	29
250	1	386-250	3.60	17 ¹ / ₄	387-250	7.00	29
300	1	386-300	3.60	17 ¹ / ₄	387-300	7.00	29
350	1	386-350	3.60	17 ¹ / ₄	387-350	7.00	29
400	1	386-400	3.60	17 ¹ / ₄	387-400	7.00	29
450	1	386-450	5.50	28	387-450	10.00	43
500	1	386-500	5.50	28	387-500	10.00	43
600	1	386-600	5.50	28	387-600	10.00	43
* 700	1	386-700	12.00	50 ¹ / ₂	387-700	15.00	77 ¹ / ₂
* 800	1	386-800	12.00	50 ¹ / ₂	387-800	15.00	77 ¹ / ₂
* 900	1	386-900	15.00	72 ¹ / ₂	387-900	18.00	92 ¹ / ₂
*1000	1	386-999	15.00	72 ¹ / ₂	387-999	18.00	92 ¹ / ₂

Dimensions

Amperes	250 Volts		600 Volts	
	Length Over All Inches	Diameter Tube Inches	Length Over All Inches	Diameter Tube Inches
61-100	5 ⁷ / ₈	1	7 ⁷ / ₈	1 ¹ / ₄
101-200	7 ⁷ / ₈	1 ¹ / ₂	9 ⁵ / ₈	1 ³ / ₄
201-400	8 ⁵ / ₈	2	11 ⁵ / ₈	2 ¹ / ₂
401-600	10 ³ / ₈	2 ¹ / ₂	13 ³ / ₈	3
601-800	11 ¹ / ₂	3	14 ¹ / ₂	3 ¹ / ₂
801-1000	12 ⁵ / ₈	3 ¹ / ₂	15 ³ / ₈	4

*The National Electrical Code does not cover any type of 250-volt enclosed fuse above 600 amperes. Fuses of higher capacity are not listed as Standard by the Underwriters' Laboratories but are built to the same strict standards as those so listed.

Knife-Blade Style



Amp.	Car-ton	250 Volts			600 Volts		
		No.	Each	Wt., Lb. per 100	No.	Each	Wt., Lb. per 100
70	5	384-070	\$.90	30	385-070	\$1.80	54
80	5	384-080	.90	30	385-080	1.80	54
90	5	384-090	.90	30	385-090	1.80	54
100	5	384-100	.90	30	385-100	1.80	54
110	1	384-110	2.00	78	385-110	3.50	125
125	1	384-125	2.00	78	385-125	3.50	125
150	1	384-150	2.00	78	385-150	3.50	125
175	1	384-175	2.00	78	385-175	3.50	125
200	1	384-200	2.00	78	385-200	3.50	125
225	1	384-225	3.60	175	385-225	7.00	290
250	1	384-250	3.60	175	385-250	7.00	290
300	1	384-300	3.60	175	385-300	7.00	290
350	1	384-350	3.60	175	385-350	7.00	290
400	1	384-400	3.60	175	385-400	7.00	290
450	1	384-450	5.50	280	385-450	10.00	430
500	1	384-500	5.50	280	385-500	10.00	430
600	1	384-600	5.50	280	385-600	10.00	430
* 700	1	384-700	12.00	505	385-700	15.00	775
* 800	1	384-800	12.00	505	385-800	15.00	775
* 900	1	384-900	15.00	725	385-900	18.00	925
*1000	1	384-999	15.00	725	385-999	18.00	925

Dimensions

Amperes	250 Volts		600 Volts	
	Length Over All Inches	Diameter Tube Inches	Length Over All Inches	Diameter Tube Inches
61-100	5 ⁷ / ₈	1	7 ⁷ / ₈	1 ¹ / ₄
101-200	7 ⁷ / ₈	1 ¹ / ₂	9 ⁵ / ₈	1 ³ / ₄
201-400	8 ⁵ / ₈	2	11 ⁵ / ₈	2 ¹ / ₂
401-600	10 ³ / ₈	2 ¹ / ₂	13 ³ / ₈	3
601-800	11 ¹ / ₂	3	14 ¹ / ₂	3 ¹ / ₂
801-1000	12 ⁵ / ₈	3 ¹ / ₂	15 ³ / ₈	4

*The National Electrical Code does not cover any type of 250-volt enclosed fuse above 600 amperes. Fuses of higher capacity are not listed as Standard by the Underwriters' Laboratories but are built to the same strict standards as those so listed.

15 to 30-Ampere Buss Fusetrons

For Circuit Protection on Voltages up to 125



Stops needless blowing of plug fuses. Will not blow when motors start on washing machines, refrigerators and such appliances. Has a long time-lag, because it is a fuse to which a thermal cutout has been added.

Abolishes unsafe practice of using over-size fuse to prevent needless blowing. Gives all the protection a fuse does, holds like a large fuse when safety permits, yet opens like a small fuse when safety demands.

Large clear window facilitates locating of blown Fusetron. No installation cost; fits regular fuse receptacle. Packed 4 in a box; 100 in a shelf package.

No.	715	720	725	730
Each	\$.07½	.07½	.07½	.07½
Amperes	15	20	25	30

15 to 30-Ampere Buss Fustats

For Circuit Protection on Voltages up to 125



Permits addition of more appliances to present circuits. Will not blow out when motors start on washing machines, refrigerators, or other appliances. Fits all Edison base fuse holders by use of adapter which locks in place.



Adapter

Has a thermal cutout combined with a fuse. Operates like a Fusetron, but has a non-tamperable base. Resists over-fusing. A 20, 25, or 30-ampere size will not fit in a 15-ampere receptacle or adapter. Similar limitations apply to all other sizes.

Adapters not included with Fustats; order separately and specify size.

Packed 4 in a box; 100 in a shelf package.

Amperes	Fustats		Adapters	
	No.	Each	No.	Each
15	915	\$.07½	A15	\$.07½
20	920	.07½	A20	.07½
25	925	.07½	A25	.07½
30	930	.07½	A30	.07½

0 to 14-Ampere Buss Fustats

For Motor Apparatus, or Circuit Protection on Voltages up to 125



Has Underwriters' approval for motor-running protection. Fits all standard Edison base fuse holders by use of adapter which locks in place.



Adapter

Holds starting current and harmless overloads, yet protects motor against burnout from any excessive current, even light overloads if continued. Opens like a fuse on short-circuit.

It is a fuse to which a thermal cutout is added. Non-tamperable device for safe protection. Instead of fuse, install in the same block or switch, a Fustat having the same, or slightly higher, ampere rating as the motor.

Adapters not included with Fustat; order separately, and specify size Fustat for which they are intended.

Packed 4 in a box; 100 in a shelf package.

Amperes	Fustats		Adapter	
	No.	Each	No.	Each
1.	901	\$.15	A01	\$.07½
1.25	9012	.15	A012	.07½
1.6	9016	.15	A016	.07½
2.	902	.15	A02	.07½
2.5	9025	.15	A025	.07½
3.2	9032	.15	A032	.07½
4.	904	.15	A04	.07½
5.	905	.15	A05	.07½
6.25	9062	.15	A062	.07½
8.	908	.15	A08	.07½
10.	910	.15	A10	.07½
12.	912	.15	A15	.07½
14.	914	.15	A15	.07½

Many other sizes from 3/10 to 9 amperes can be obtained.

Buss Fusetrons

250 and 600 Volts



0 to 60 Amps.



70 to 600 Amps.

Contains a thermal cutout as well as a fuse link.

For all types of circuits or feeders as thermal cutout will open to protect panelboards and switches from excessive heating before it can oxidize contact surfaces or damage insulation—yet it will not open needlessly.

Protects motor against burnout from overloading, single phasing, dry bearings, etc. On normal installations size about 100 to 125 per cent of ampere rating of motor can be used. Will not blow on starting currents—yet gives same short circuit protection as fuses.

Because Fusetrons can be used in smaller sizes than ordinary fuses, savings on original installations can be made through use of smaller size switches and panelboards.

Carries Underwriters' Laboratories label and is approved for both motor-running and circuit protection.

Ask for bulletin Fis for further information, or bulletin Spd for motor tables and size to use.

Ferrule Contact—1 to 60 Amperes

Amp.	No. in. Carton	250 Volts			600 Volts				
		No.	Each	Lgth. In. Wt. Lb. per 100	No.	Each	Lgth. In. Wt. Lb. per 100		
1	10	401	\$.20	2	3½	601	\$.50	5	14
1.25	10	4012	.20	2	3½	6012	.50	5	14
1.6	10	4016	.20	2	3½	6016	.50	5	14
2	10	402	.20	2	3½	602	.50	5	14
2.5	10	4025	.20	2	3½	6025	.50	5	14
3.2	10	4032	.20	2	3½	6032	.50	5	14
4	10	404	.20	2	3½	604	.50	5	14
5	10	405	.20	2	3½	605	.50	5	14
6.25	10	4062	.20	2	3½	6062	.50	5	14
8	10	408	.20	2	3½	608	.50	5	14
10	10	410	.20	2	3½	610	.50	5	14
12	10	412	.20	2	5	612	.50	5	16
15	10	415	.20	2	5	615	.50	5	16
20	10	420	.20	2	5	620	.50	5	16
25	10	425	.25	2	5	625	.60	5	16
30	10	430	.25	2	5	630	.60	5	16
35	10	435	.50	3	12	635	1.10	5½	26
40	10	440	.50	3	12	640	1.10	5½	26
45	10	445	.50	3	12	645	1.10	5½	26
50	10	450	.50	3	12	650	1.10	5½	26
60	10	460	.50	3	12	660	1.10	5½	26

Knife Blade Contact—70 to 600 Amperes

Amp.	No. in. Carton	250 Volts			600 Volts				
		No.	Each	Lgth. In. Wt. Lb. per 100	No.	Each	Lgth. In. Wt. Lb. per 100		
70	5	470	\$.15	5½	35	670	\$2.25	7½	56
80	5	480	1.15	5½	35	680	2.25	7½	56
90	5	490	1.15	5½	35	690	2.25	7½	56
100	5	4100	1.15	5½	35	6100	2.25	7½	56
110	1	4110	2.50	7½	88	6110	4.40	9½	125
125	1	4125	2.50	7½	88	6125	4.40	9½	125
150	1	4150	2.50	7½	88	6150	4.40	9½	125
175	1	4175	2.50	7½	88	6175	4.40	9½	125
200	1	4200	2.50	7½	88	6200	4.40	9½	125
225	1	4225	4.50	8½	182	6225	8.75	11½	305
250	1	4250	4.50	8½	182	6250	8.75	11½	305
300	1	4300	4.50	8½	182	6300	8.75	11½	305
350	1	4350	4.50	8½	182	6350	8.75	11½	305
400	1	4400	4.50	8½	182	6400	8.75	11½	305
450	1	4450	7.00	10½	304	6450	12.50	13½	480
500	1	4500	7.00	10½	304	6500	12.50	13½	480
600	1	4600	7.00	10½	304	6600	12.50	13½	480

Many other sizes from 3/10 to 9 amperes can be obtained.

Return Allowance

Blown Fusetron (if in good condition otherwise) can be returned for credit of one half. Such credit to apply only against purchase of an equal list value of 35 to 600 ampere Fusetrons.

Bryant Pyrotite Enclosed Plug Fuses

125 Volts



No. POR-15

With Clear Hexagonal Mica Window in Cap

Cat. No.	Per 100	Amperes	Car-ton	Std. Pkg.	Wt., Lbs. Pkg.
POR- 3	\$5.28	3	50	500	35
POR- 6	5.28	6	50	500	35
POR-10	4.80	10	50	500	35
POR-15	4.80	15	50	500	35



No. POR-20

With Clear Round Mica Window in Cap

POR-20	\$4.80	20	50	500	35
POR-25	4.80	25	50	500	35
POR-30	4.80	30	50	500	35

Hemco Pyrex Glass Plug Fuses

Branch Circuit, 125 Volts



No. PYX30

Cat. No.	Per 100	Amps.	Car-ton	Std. Pkg.	Wt., Lbs.
PYX10	\$4.80	10	50	500	35
PYX15	4.80	15	50	500	35

Main Circuit, 125 Volts

PYX20	\$4.80	20	50	500	35
PYX25	4.80	25	50	500	35
PYX30	4.80	30	50	500	35

Glass plug fuses will be packed in display cartons of 5 when so specified.

Jefferson Plug Fuses



Jefferson Gem Plug Fuses are equipped with clear mica windows making it possible to see at a glance whether or not fuse is blown.

These fuses are listed as standard and bear the Underwriters' label. Packed in display cartons of 5 each and shelf packages of 100 fuses (20 cartons of 5 each).



Carton of 5 Fuses

No.	Each	Cap. Amp.	Carton Quantity	Wt. Lb. per 100
388-103	\$.07	3	100	6 1/4
388-105	.07	5	100	6 1/4
388-106	.07	6	100	6 1/4
388-108	.07	8	100	6 1/4
388-110	.05	10	100	6 1/4
388-115	.05	15	100	6 1/4
388-120	.05	20	100	6 1/4
388-125	.05	25	100	6 1/4
388-130	.05	30	100	6 1/4

Buss Clear Window Plug Fuses



Carries Underwriters' Laboratories inspected label.

Buss fuses have an extra large, clear window and an all white background which makes it easy to see if fuse is blown. Brass cap protects fuse against any chipping of the top. Insulated with porcelain and mica.



Packed 5 in a box. Information printed on box tells what to do when a fuse blows.

Standard package, 100. Weight per 1000, 65 pounds.

Amperes.....	1	3	5	6	8	10	15	20	25	30
No.....	801	803	805	806	808	810	815	820	825	830
Each.....	\$.05	.05	.05	.05	.05	.05	.05	.05	.05	.05

Clearsite Non-Renewable Plug Fuses



Clearsite Plug Fuses mount the fuse link under the fuse window thereby giving clear vision of the link. The drop-out type of link is used which lessens the internal operating pressure.

The fuse body is made of heat-resisting molded insulation, black in color.

Standard Sizes

Regular Packages

Cat. No.	Each	Cap. Amps.	Car-ton	Cat. No.	Each	Cap. Amps.	Ret. Pkg.	*Car-ton
4310	\$.07	10	50	5710	\$.07	10	5	100
4315	.07	15	50	5715	.07	15	5	100
4320	.07	20	50	5720	.07	20	5	100
4325	.07	25	50	5725	.07	25	5	100
4330	.07	30	50	5730	.07	30	5	100

Retail Packages

Sub-Standard Sizes

4303	\$.07	3	50	5703	\$.07	3	5	100
4305	.07	5	50	5705	.07	5	5	100
4306	.07	6	50	5706	.07	6	5	100
4308	.07	8	50	5708	.07	8	5	100

*Carton contains 20 retail packages of 5 fuses each.

Economy Renewable Plug Fuses

Packed 10 in carton; wt. 1 1/4 lbs.



Standard Sizes

Cat. No.	Capacity Amperes
PF1068	10
PF1568	15
PF2068	20
PF2568	25
PF3068	30

Sub-Standard Sizes

Cat. No.	Capacity Amperes
PF368	3
PF568	5
PF668	6
PF868	8
.....	..

Each..... \$2.25

Drop Out Renewal Links

Packed 100 in carton; wt. 2 ounces.

Standard Sizes

Cat. No.	Capacity Amperes
PR6810	10
PR6815	15
PR6820	20
PR6825	25
PR6830	30

Sub-Standard Sizes

Cat. No.	Capacity Amperes
PR6803	3
PR6805	5
PR6806	6
PR6808	8
.....	.

Each..... \$2.02



Economy Tamres

125 Volts

Tamper-Resisting Plug Fuses

Standard Edison base. Will fit any existing standard fuseholder or cut-out. Can be used with or without adapter.

Without the adapter it is like any ordinary plug fuse, but becomes tamper-resisting with adapter.

Made of black Textolite with large, clear window. Listed by Underwriters' Laboratories.

No.	TR-15	TR-20	TR-25	TR-30
Per 100.....	\$7.20	7.20	7.20	7.20
Amperes.....	15	20	25	30

Adapters

Fits on the base of the fuse and screws in with the fuse. When the fuse is removed the adapter remains permanently secured in the cutout ready to receive the same fuse or a new fuse. Adapters are not interchangeable.






No.	With Spring Lock		Without Spring Lock	
	TR-41	TR-51	TR-40	TR-50
Per 100.....	\$7.00	7.00	6.50	6.50
Amperes.....	15	20,25,30	15	20,25,30

Bryant Hemco Plug Fuse Cutouts

30 Amperes, 125 Volts





Listed by Underwriters' Laboratories, Inc.




			
No. H110	No. H220	No. H221	Wt. Lb.
Per 100	Description	Car- ton	Std. Pkg.
No. 100		Car- ton	Std. Pkg.
H110 \$21.00	Single Pole, Main Line.....	10	100 38
H220 27.00	2-Pole Main Line.....	10	100 61
H221 30.00	2-Pole Single Branch.....	5	50 46

			
No. H224	No. H222	No. H232	
H224 \$31.00	2-Pole Single or Double Crossover Branch.....	5	50 53
H222 53.00	2-Pole Double Branch.....	5	50 67
H232 58.00	Triple to Double-Pole Double Branch.....	5	50 79

			
No. H330	No. H331	No. H332	
H330 \$47.00	3-Pole Main Line.....	5	50 50
H331 70.00	3-Pole Single Branch.....	5	50 96
H332 90.00	3-Pole Double Branch.....	5	50 126

With Solid Neutral


				
No. H120	No. H121	No. H122	No. H132	
H120 \$27.00	2-Pole Main Line.....	10	150 64	
H121 30.00	2-Pole Single Branch.....	10	100 76	
H122 53.00	2-Pole Double Branch.....	5	50 51	
H132 58.00	Triple to Double-Pole Double Branch.....	5	50 61	

			
No. H133	No. H131	No. H134	
H133 \$47.00	3-Pole Main Line.....	5	50 49
H131 70.00	3-Pole Single Branch or 2-Circuit.....	5	25 30
H134 110.00	3-Pole Double Branch or 4-Circuit.....	5	25 47

Bryant Entrance Switches

30 Amperes, 125 Volts

Listed by Underwriters' Laboratories, Inc.

 Packed 2 in a carton, 25 in a standard package.


Weight per standard package, 38 pounds.

No. H1695, Fuses at Top.....	per 100	\$63.50
No. H1981, Fuses at Bottom.....	per 100	63.50

No. 559 Bryant Neutral Wire Fuseless Plugs

30 Amperes, 125 Volts

Listed by Underwriters' Laboratories, Inc.



 Can be inserted in neutral fuse receptacle of triple-pole cut-out base and soldered in place. Complies with N.E.C. which requires omission of fuses from grounded side of line except at cut-out base just preceding lamp socket or other translating device.

Packed 75 in carton, 300 in standard package.
No. 559, Weight per Std. Pkg., 10 Pounds..... per 100 \$7.50



Relyon Plug Fuse Cutouts

Solid Neutral



30 Amperes, 125 Volts

	Main Line		
No. 29650		No. 21650	Pkg.
Per 100	Description	Car- ton	Std. Pkg. Lb.
No. 100		Car- ton	Std. Pkg. Lb.
29650 \$27.00	2-Wire.....	10	150 63
21650 47.00	3-Wire.....	5	50 45

Single Branch

		
No. 19350	No. 80420	
19350 \$30.00	2-Wire.....	10 100 64
80420 70.00	3-Wire, or 2-Circuit.....	5 25 29




Double Branch

		
No. 25870	No. 21990	
No. 23150	No. 23115	
25870 \$53.00	2-Wire.....	5 50 46
21990 58.00	3 to 2-Wire.....	5 50 58
23150 110.00	2-Wire or 4-Circuit.....	5 25 41
23115 44.00	2-Wire, or 2-Circuit.....	10 100 70




Relyon Plug Fuse Cutouts

Fused Neutral

30 Amperes, 125 Volts

			
No. 2569	No. 2965	No. 2165	Pkg.
No. 100	Description	Car- ton	Std. Pkg. Lb.
No. 100		Car- ton	Std. Pkg. Lb.
2569 \$21.00	Single Pole.....	10	100 42
2965 27.00	2-Wire.....	10	100 60
2165 47.00	3-Wire.....	5	50 46

Single Branch

			
No. 1935	No. 8020	No. 8042	
1935 \$30.00	2-Wire.....	5	50 43
8020 31.00	2-Wire, or Double Cross-Over Branch.....	5	50 51
8042 70.00	3-Wire.....	5	50 90

Double Branch

			
No. 2587	No. 2199	No. 2135	
2587 \$53.00	2-Wire.....	5	50 64
2199 58.00	3 to 2-Wire.....	5	50 76
2135 90.00	3-Wire.....	5	50 122

Bryant Cartridge Fuse Cutout Bases

Single-Pole
Listed by Underwriters' Laboratories, Inc.

250 Volts

Barrier Type—Porcelain Base



No. 3929

No.	Per 100	Cap. Amp.	Lgth. In.	Width In.	Ht. In.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
3929	\$32.00	1-30	3 ¹ / ₁₆	1 ¹ / ₂	1 ¹ / ₂	5	50	25
3930	55.00	31-60	5	1 ³ / ₁₆	2 ³ / ₁₆	2	50	65

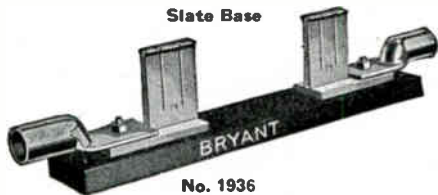
Porcelain Base



No. 1929

No.	Per 100	Cap. Amp.	Lgth. In.	Width In.	Ht. In.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1929	\$32.00	1-30	3 ¹ / ₁₆	1 ¹ / ₂	1 ³ / ₈	5	50	18
1930	55.00	31-60	4 ⁷ / ₈	1 ¹ / ₂	1 ³ / ₁₆	5	50	35
1931	112.00	61-100	7 ¹⁵ / ₁₆	2 ¹ / ₄	2 ³ / ₁₆	2	50	91
*1932	231.00	101-200	10	2 ¹ / ₄	3 ³ / ₃₂	2	50	137

Slate Base



No. 1936

No.	Per 100	Cap. Amp.	Lgth. In.	Width In.	Ht. In.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
648	\$37.40	1-30	4 ³ / ₄	1 ⁵ / ₈	1 ¹ / ₁₆	5	50	27
649	60.00	31-60	6	1 ³ / ₄	1 ³ / ₃₂	5	50	47
1933	133.00	61-100	10	2	2 ³ / ₈	2	50	117
1934	200.00	101-200	10	2 ¹ / ₄	3 ³ / ₃₂	2	25	83
1935	500.00	201-400	14 ³ / ₄	2 ³ / ₄	3 ³ / ₄	2	10	73
1936	684.00	401-600	17 ³ / ₄	3	4 ¹ / ₁₆	2	5	66

600 Volts

Barrier Type—Porcelain Base



No. 3938

No.	Per 100	Cap. Amp.	Lgth. In.	Width In.	Ht. In.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
3937	\$46.00	1-30	6 ⁷ / ₁₆	1 ¹ / ₁₆	1 ³ / ₄	1	50	66
3938	69.00	31-60	7 ¹ / ₁₆	2 ¹ / ₈	2 ¹ / ₄	1	50	106

Porcelain Base



No. 1938

No.	Per 100	Cap. Amp.	Lgth. In.	Width In.	Ht. In.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1937	\$46.00	1-30	7	1 ¹ / ₂	1 ³ / ₃₂	5	50	59
1938	69.00	31-60	7 ⁵ / ₈	1 ³ / ₄	2 ⁷ / ₃₂	5	50	56
1939	148.00	61-100	12	2	2 ⁹ / ₁₆	2	50	115
*1940	253.00	101-200	14 ¹ / ₂	2 ¹ / ₂	3 ³ / ₃₂	2	50	142

Slate Base



No. 1941

No.	Per 100	Cap. Amp.	Lgth. In.	Width In.	Ht. In.	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1941	\$148.00	61-100	12	2	2 ¹ / ₂	2	50	129
1942	218.50	101-200	14 ¹ / ₂	2 ¹ / ₂	3 ³ / ₃₂	2	25	122
1943	570.00	201-400	14 ¹ / ₂	3	3 ³ / ₈	2	10	108
1944	741.00	401-600	20 ³ / ₄	3 ¹ / ₂	4 ¹ / ₁₆	2	5	75

*Equipped with clamp terminals.

Bryant Cartridge Fuse Cut-Out Bases

Porcelain Base
250 Volts

With connections for one cartridge fuse in each side of the line.

Double-Pole, Main



No. 1917

Cat. No.	Per 100	Amps.	Dimensions Inches	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1917	\$44.00	1-30	3 ³ / ₁₆ x2 ¹ / ₁₆	5	50	45
1918	112.00	31-60	5 x3 ⁵ / ₈	2	50	117
271	224.00	61-100	7 ⁵ / ₈ x3 ⁷ / ₈	1	50	208

Double-Pole, Single Branch



No. 1919

No.	Per 100	Amps.	Dimensions Inches	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1919	\$56.00	1-30	4 ¹ / ₁₆ x2 ¹ / ₁₆	1	50	72
1920	140.00	31-60	6 ¹ / ₁₆ x3 ⁵ / ₈	1	50	165

Double-Pole, Double Branch



No. 1922

No.	Per 100	Amps.	Dimensions Inches	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1922	\$104.00	1-30	7 ³ / ₄ x2 ¹ / ₁₆	1	25	53
1996	280.00	31-60	10 ⁵ / ₈ x3 ⁵ / ₈	1	25	117

Triple-Pole, Main



No. 1924

No.	Per 100	Amps.	Dimensions Inches	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1924	\$64.00	1-30	3 ⁵ / ₁₆ x4 ¹ / ₁₆	5	50	63
1925	160.00	31-60	5 x5 ⁵ / ₁₆	1	50	155
272	320.00	61-100	7 ⁵ / ₈ x5 ⁵ / ₈	1	25	149

Triple-Pole, Single Branch



No. 1926

No.	Per 100	Amps.	Dimensions Inches	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1926	\$108.00	1-30	6 ¹ / ₁₆ x4 ¹ / ₁₆	1	50	125
1927	240.00	31-60	8 ¹ / ₁₆ x5 ⁵ / ₁₆	1	50	398

Triple-Pole Double Branch



No. 1928

No.	Per 100	Amps.	Dimensions Inches	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1928	\$180.00	1-30	8 ⁷ / ₈ x4 ¹ / ₁₆	1	50	198
1998	480.00	31-60	11 ⁷ / ₈ x5 ⁵ / ₁₆	1	10	78

Triple to Double-Pole, Double Branch



No. 1923

No.	Per 100	Amps.	Dimensions Inches	Car-ton	Std. Pkg.	Wt. Lb. Std. Pkg.
1923	\$120.00	1-30	8 ⁷ / ₈ x2 ¹ / ₁₆	1	25	76
1997	336.00	31-60	11 ⁷ / ₈ x3 ⁵ / ₈	1	25	135

Buss Fuse Wire and Strip



Buss fuse wire and strips will carry indefinitely current shown under heading capacity and will open the circuit when subjected to current 25 per cent in excess thereof.

This is based on a distance between contacts or terminals of 2 inches.

When used on contacts of other distances, the carrying capacity is affected as shown in table below.

Will Carry More Current

Distance Between Contacts Inches	Per Cent Additional
1/2	100
3/4	70
1	45
1 1/4	30
1 1/2	15

Will Carry Less Current

Distance Between Contacts Inches	Per Cent Less
2 1/2	5
3	10
4	15
5	20
6	25

The size of terminal and other local conditions will greatly affect these figures. They are only approximate.

Fuse Wire

Furnished only in full spools.

Size Amperes	Per Pound	Diameter Inches	Carrying Capacity Amperes	Feet per Pound	No. Lb. per Spool
1/4	\$100.00	.0045	.45	12920	*250
1/2	10.00	.010	1.25	2616	1 1/2
1	4.00	.016	2.2	1020	1 1/2
2	3.50	.025	4.3	420	1 1/2
3	3.00	.031	6	273	1 1/2
5	2.25	.039	8	172	1
6	2.25	.042	9	148	1
10	2.00	.055	14	87	1
15	2.00	.068	20	57	1
20	1.50	.082	27	39	1
25	1.50	.094	33	30	1
30	1.50	.103	38	25	1
40	1.50	.122	49	17.6	1
50	1.50	.137	59	14	1
60	1.50	.158	75	10.5	1
70	1.50	.170	85	9	1
80	1.50	.189	101	7.3	1
90	1.50	.212	125	5.8	1
100	1.50	.226	141	5.1	1

Fuse Strip

Packed in 5-pound cans. All in one piece. Each strip is marked at the inner end of the coil with the ampere rating. Width of strip, 1 inch.

Furnished only in full cans.

Size Amp.	Per Pound	Thick. Inches	Capacity Amperes	Carrying Feet per Lb.	Size Amp.	Per Pound	Thick. Inches	Capacity Amperes	Feet per Lb.
100	\$1.50	.028	125	7.3	300	\$1.50	.092	340	2.2
125	1.50	.035	155	5.8	350	1.50	.110	405	1.9
150	1.50	.043	180	4.7	400	1.50	.128	440	1.6
175	1.50	.051	200	4	500	1.50	.166	545	1.2
200	1.50	.059	225	3.5	600	1.50	.204	625	1
250	1.50	.075	285	2.7					

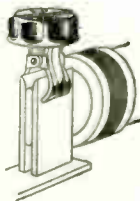
*Feet.

Buss Clip-Clamps



These clip-clamps are built for hard service, and insure good contact between clips and fuses or Fusetrons. They make replacement of fuse-clips unnecessary; generally permit even injured clips to be used.

To prevent corrosion, all steel parts are heavily cadmium plated.



No.	Each	Size of Clamp	Carton Quantity	Wt. Lb. per 100
1	\$.40	0- 30 Amp. 250 Volt	12	5
2	.60	{ 31- 60 Amp. 250 Volt 0- 30 Amp. 600 Volt }	12	8
4	.85	31- 60 Amp. 600 Volt	12	12
5	.75	61-100 Amp.	12	10
6	1.25	101-200 Amp.	6	21
7	1.75	201-400 Amp.	6	31
8	2.50	401-600 Amp.	6	42

Open Link Fuses

A set-up charge for each size and type of fuse ordered is made in addition to the net prices per fuse. This is necessary because these fuses are not stocked, and are made up on special order only. Great care should be exercised in ordering this material as it is not returnable.

Open link fuses can be obtained with many other styles of terminals and in larger capacities. When in need of open link fuses not listed, send sample or complete description.



Amperes	*Each	No.	STANDARD TERMINAL Slot Inches	Width Inches	Other Terminal No.
1 to 30	\$.025	1	3/16	3/8	3
35 to 60	.035	3	3/16	9/16	5
65 to 100	.05	5	1/4	1 1/16	7
110 to 200	.08	7	3/8	3/4	16
225 to 400	.15	16	7/8	1 1/2	10
450 to 600	.30	10	1 1/2	1 3/8	16
650 to 1000	.60	28	5/8	2 1/16	10

*A set-up charge of \$1.50 is made for each size and type fuse ordered on each shipment, in addition to prices shown.

In ordering, be sure to specify exact amperage and centers desired. Unless otherwise specified, standard terminals as listed above will be furnished. The terminals listed in column headed "Other Terminal No." can be obtained, if desired, without additional cost.

Slots are slightly larger than dimensions given so that bolts of such sizes fit the slot. Terminals are all copper.

Type D

Amperes	30 to 200
†Each	\$.035+
Center to Center	in. 2 1/16 to 2 5/8
Slot	in. 1/4

†A set-up charge of \$1.50 is made on each size fuse ordered on each shipment, in addition to price shown above.

Large Open Link Fuses

Terminals are of cold rolled copper, entirely flat, one edge being slotted to receive the fuse strip.

Terminal No.	†Each	TERMINAL Size	Thickness	Usual Amperages
51	\$4.00	2 1/2 x 2 1/2	1/4	1 to 1500
52	5.00	3 x 3	1/4	1 to 2000
53	6.00	3 x 3	3/8	1 to 2000
54	8.00	3 1/2 x 3 1/2	3/8	1 to 2500
55	10.00	4 x 4	3/8	1 to 3000

†A set-up charge of \$4.00 is made for each size and type fuse ordered on each shipment, in addition to prices shown.

When ordering, specify exact amperage, center to center dimensions and size of hole required. If more than one hole is desired, a sketch of the fuse must be submitted and 25 cents added for each additional hole.

Sherman Fuse Clips

N.E.C. Standard



31-60 Amp. 250 Volts	31-60 Amp. 600 Volts	31-60 Amp. 250 Volts	0-30 Amp. 250 Volts
Tit Retainer Types		Slit Retainer Types	

Ferrule types are made of special heat and fatigue resisting bronze.

Knife-blade types are heavy special tempered spring copper, and especially designed to secure strong spring tension with resulting perfect contact.

Slit retainer type and Tit type are available. Specify type desired when ordering.

Relyon Cartridge Fuse Cutouts

Main Line—250 Volts



No.	Per 100	Description	Amps.	Dimensions Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
72569	\$32.00	Single Pole.	3-30	3 7/8 x 2 1/8	5	50	35
82569	55.00	Single Pole.	31-60	5 1/16 x 2 5/16	2	50	45
72965	44.00	Double Pole	3-30	3 7/8 x 3	5	50	50
82965	112.00	Double Pole	31-60	5 x 3 3/8	1	50	115
72165	64.00	Triple Pole.	3-30	4 1/2 x 3 7/8	5	50	73
82165	160.00	Triple Pole.	31-60	5 1/16 x 5 1/16	1	50	170

Single Branch

250 Volts



71935	\$56.00	Double Pole	3-30	5 x 3	1	50	70
81935	140.00	Double Pole	31-60	6 1/16 x 3 3/8	1	50	170
78042	108.00	Triple Pole.	3-30	6 1/16 x 4 1/2	1	50	115
88042	240.00	Triple Pole.	31-60	8 1/4 x 5 1/16	1	50	316

Double Branch—250 Volts



72587	\$104.00	Double Pole	3-30	7 1/16 x 3	1	50	115
82587	280.00	Double Pole	31-60	10 1/16 x 3 3/8	1	25	133
72199	120.00	3-2 Pole....	3-30	9 x 3	1	25	83
82199	336.00	3-2 Pole....	31-60	11 1/8 x 3 3/8	1	25	158
72135	180.00	Triple Pole.	3-30	9 1/16 x 4 1/2	1	25	108
82135	480.00	Triple Pole.	31-60	11 1/8 x 5 1/16	1	10	100

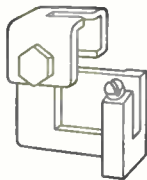
Bus Fuse Reducers



60 to 30 Amp.

Packed 1 pair in a carton.

Fits spring or clamp type clip. Provides clamp contact throughout. Makes small size Fusetron or fuse fit larger size clip. Fits into any panel or switch. Does not take up any more space than a fuse of a size to fit clip.



200 to 100 Amp.

Volts	Amperes	Wt. Lb. per 100	No.	Each
250	60 to 30	16	263	\$.40
250	100 to 60	34	216	.65
600	60 to 30	16	663	.70
600	100 to 60	39	616	1.15
600	100 to 30	..	Use No. 216	....
250 or 600	200 to 100	30	2621	1.35
250 or 600	400 to 200	55	2642	2.00

Relyon Porcelain Entrance Switches

30 Amperes, 125 Volts

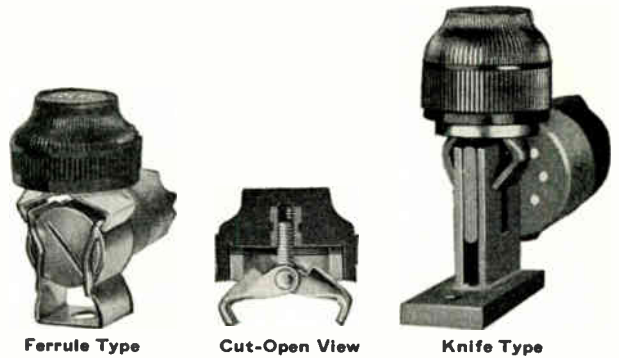
Dimensions, 5 1/4 x 3 inches.



No. 4014

No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lb.
4014	\$63.50	Fuses at Top.....	10	50	75
4016	63.50	Fuses at Bottom.....	10	50	75

Ideal Fuse Clip Clamps

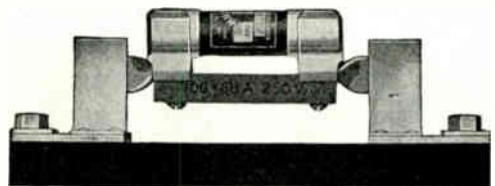


These fuse clip clamps grip all makes of clips. The knurled grip knob completely insulates the metal parts. The heavy steel clamping ring brings pressure directly around outside of jaws adjacent to ends of clip. This clamping ring rides on a fiber washer, reducing friction of turning knob. The steel jaws are strongly reinforced, and the spring holds the jaws in open position.

All metal parts are cadmium plated.

No.	Each	Ferrule Type		Std. Ctn.
		Amperes	Volts	
1	\$.40	30	250	12
2	.60	30	600	12
4	.85	60	250	6
		60	600	
5	.75	Knife Blade Type		12
		100	250	
6	1.25	100	600	6
		200	250	
7	1.75	200	600	6
		400	250	
8	2.50	400	600	6
		600	250	
		600	600	

Ideal Fuse Reducers



Ferrule Type

Ideal Fuse Reducers protect over fused circuits without the expense of a change in switch, panel or switchboard equipment. Fully approved by Underwriters' Laboratories. These reducers can be supplied for standard N. E. C. cartridge fuse holders.

Special reducers are also available for reducing from 600 volts to 250 volts. If a circuit is being changed from 600 volts to 250 volts by means of special adaptors, the same switches, panel boards, cutouts, etc. can be used.

Amperes	250 Volts		600 Volts	
	No.	Each	No.	Each
60-30	FR-263	\$.67	FR-663	\$.75
100-30	FR-213	1.12	FR-613	1.31
100-60	FR-216	1.12	FR-616	1.31
200-30	FR-223	1.87	FR-623	2.62
200-60	FR-226	1.50	FR-626	2.25
200-100	FR-221	2.62	FR-621	3.37
400-30	FR-243	5.25	FR-643	5.62
400-60	FR-246	4.50	FR-646	4.87
400-100	FR-241	4.50	FR-641	5.25
400-200	FR-242	6.00	FR-642	6.75
600-30	FR-2603	5.25	FR-6603	6.00
600-60	FR-266	5.25	FR-666	6.00
600-100	FR-261	6.00	FR-661	6.75
600-200	FR-262	6.75	FR-662	7.50
600-400	FR-264	7.50	FR-664	8.25



FA Standard Fuse Blocks

For N. E. C. Cartridge Type Fuses

Front Connection—Plain Finish
On Dead Black Finish Bases

SINGLE-POLE



DOUBLE-POLE



250 Volts, D.C. or A.C.

Cat. No.	Capacity Amperes	Price Each
F 331	30	\$1.20
F 631	60	1.80
F 1031	100	2.50
F 2031	200	3.60
A 4031	400	10.10
A 6031	600	15.30
A 8031	800	24.60
A10031	1000	35.80

250 Volts, D.C. or A.C.

Cat. No.	Capacity Amperes	Price Each
F 332	30	\$1.70
F 632	60	2.80
F 1032	100	3.60
F 2032	200	5.80
A 4032	400	18.60
A 6032	600	28.90
A 8032	800	48.20
A10032	1000	70.70

600 Volts, D.C. or A.C.

Cat. No.	Capacity Amperes	Price Each
F 361	30	\$1.60
F 661	60	2.20
F 1061	100	2.50
F 2061	200	3.80
A 4061	400	10.30
A 6061	600	16.50

600 Volts, D.C. or A.C.

Cat. No.	Capacity Amperes	Price Each
F 362	30	\$2.50
F 662	60	3.60
F 1062	100	4.00
F 2062	200	6.60
A 4062	400	19.40
A 6062	600	31.40

3-POLE



4-POLE



250 Volts, D.C. or A.C.

Cat. No.	Capacity Amperes	Price Each
F 333	30	\$2.20
F 633	60	3.80
F 1033	100	5.20
F 2033	200	8.70
A 4033	400	28.20
A 6033	600	43.90
A 8033	800	71.50
A10033	1000	105.10

250 Volts, D.C. or A.C.

Cat. No.	Capacity Amperes	Price Each
F 334	30	\$3.70
F 634	60	4.90
F 1034	100	6.90
F 2034	200	12.00
A 4034	400	37.70
A 6034	600	58.20
A 8034	800	94.00
A10034	1000	141.00

600 Volts, D.C. or A.C.

Cat. No.	Capacity Amperes	Price Each
F 363	30	\$3.90
F 663	60	5.50
F 1063	100	6.20
F 2063	200	10.10
A 4063	400	29.40
A 6063	600	46.50

600 Volts, D.C. or A.C.

Cat. No.	Capacity Amperes	Price Each
F 364	30	\$4.80
F 664	60	8.70
F 1064	100	9.50
F 2064	200	14.40
A 4064	400	39.60
A 6064	600	63.70

The 30 and 60-ampere fuse blocks have ferrule type clips.

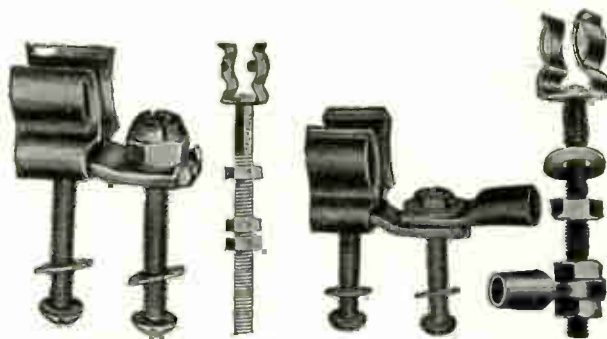
The 100 and 200-ampere fuse blocks have formed clips.

The 400 and 600-ampere fuse blocks have milled in clips.

Fuse blocks over 600 amperes are made with multiple milled parts for each pole.

FA Fuse Terminals

250 and 600 Volts



Type F
3 to 30
Amperes

Type B
3 to 30
Amperes

Type F
31 to 60
Amperes

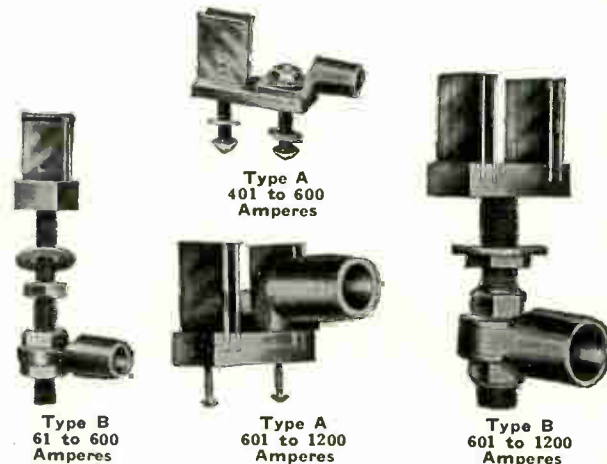
Type B
31 to 60
Amperes

Front Connection

Cat. No.	Ampere Capacity	Volts	PRICE, EACH	
			Plain Finish	Satin Finish
F 33	30	250	\$.40	\$.32
F 63	60	250	.60	.48
F 36	30	600	.78	.62
F 66	60	600	.95	.76
F103	100	250 and 600	1.05	.84
F203	200	250 and 600	1.63	1.30

Back Connection

Cat. No.	Ampere Capacity	Volts	PRICE, EACH	
			Plain Finish	Satin Finish
B 33	30	250	\$.88	\$.70
B 63	60	250	1.30	1.04
B 36	30	600	1.33	1.10
B 66	60	600	1.58	1.26
B103	100	250 and 600	2.70	2.24
B203	200	250 and 600	4.20	3.36



Type A
401 to 600
Amperes

Type B
61 to 600
Amperes

Type A
601 to 1200
Amperes

Type B
601 to 1200
Amperes

Front Connection

Cat. No.	Ampere Capacity	Volts	PRICE, EACH	
			Plain Finish	Satin Finish
A 403	400	250 and 600	\$5.83	\$4.66
A 603	600	250 and 600	9.13	7.30
A 803	800	250 and 600	15.63	12.50
A1003	1200	250 and 600	23.03	18.42

Back Connection

Cat. No.	Ampere Capacity	Volts	PRICE, EACH	
			Plain Finish	Satin Finish
B 403	400	250 and 600	\$8.50	\$6.80
B 603	600	250 and 600	13.63	10.10
B 803	800	250 and 600	28.00	22.40
B1003	1200	250 and 600	38.13	30.50

Front connection fuse terminals are furnished with short screws, requiring head to be countersunk.

Back connection fuse terminals are furnished with studs long enough for 2-inch slate or marble mounting.

NOTE.—Satin finish will be sent unless otherwise specified.

Colt Cast Iron Weatherproof Fuse Boxes

For Potentials Not Exceeding 250 Volts



No. 3670



No. 3190

Colt Cast Iron Weatherproof Service Boxes

For Potentials Not Exceeding 250 Volts



No. 3678



No. 3682

Each box requires a fitting at each end.

2 Poles—All Fusible

No.	Each	Amp.	DIMENSIONS, INCHES			Std. Pkg.	Wt. Lb. Each
			Length	Width	Height		
3872	\$6.00	0-30	7	5	3 3/4	10	5
3873	8.50	31-60	8 3/8	6	4 3/4	5	10
3670	12.00	61-100	10 5/8	7 1/4	4 7/8	5	13
3671	26.00	101-200	13 3/8	10 1/4	6 1/4	5	33
3672	42.00	201-400	16 1/8	12 1/2	7	5	60
3673	66.00	401-600	19 1/4	15	8 1/2	3	74

3 Poles—All Fusible

3874	\$8.00	0-30	7	6 3/8	3 3/4	10	8
3875	10.00	31-60	8 3/8	7 1/4	4 3/4	5	11
3674	13.00	61-100	10 5/8	9	4 7/8	5	18
3675	31.50	101-200	13 3/8	13 1/8	6 1/4	3	43
3676	59.50	201-400	16 1/8	16 1/8	7	1	89
3677	99.00	401-600	19 1/4	19 1/4	8 1/2	1	120

3 Poles—2 Fusible—Neutral Nonfusible

3876	\$8.00	0-30	7	6 3/8	3 3/4	10	8
3877	10.00	31-60	8 3/8	7 1/4	4 3/4	5	11
3865	13.00	61-100	10 5/8	9	4 7/8	5	18
3866	31.50	101-200	13 3/8	13 1/8	6 1/4	3	43
3867	59.50	201-400	16 1/8	16 1/8	7	1	89
3868	99.00	401-600	19 1/4	19 1/4	8 1/4	1	120

4 Poles—All Fusible

3190	\$24.00	61-100	10 5/8	11 1/4	4 7/8	5	22
3191	42.50	101-200	13 3/8	16	6 1/4	3	49
3192	83.00	201-400	16 1/8	20	7	1	90
3193	125.00	401-600	19 1/4	23 3/8	8 1/2	1	143

4 Poles—3 Fusible—Neutral Nonfusible

3194	\$24.00	61-100	10 5/8	11 1/4	4 7/8	5	22
3195	42.50	101-200	13 3/8	16	6 1/4	3	49
3196	83.00	201-400	16 1/8	20	7	1	90
3197	125.00	401-600	19 1/4	23 3/8	8 1/2	1	143

For Potentials Not Exceeding 600 Volts

2 Poles—All Fusible

5889	\$13.00	0-30	11	7 1/4	4 3/4	5	15
5890	17.00	31-60	12 1/8	8 1/2	5 1/4	5	20
5760	21.00	61-100	14 3/4	10 1/4	5	4	29
5761	35.00	101-200	17 3/4	12 1/8	6	4	50
5762	66.00	201-400	20 1/2	15	7	1	74

3 Poles—All Fusible

5891	\$17.00	0-30	11	9 1/8	4 3/4	5	19
5892	22.00	31-60	12 1/8	10 7/8	5 1/4	5	27
5764	26.50	61-100	14 3/4	13 3/4	5 1/2	4	39
5765	42.50	101-200	17 3/4	15 1/4	6 1/2	4	64
5766	85.50	201-400	20 1/2	19 1/4	7 1/2	1	112
5767	132.00	401-600	26	21 1/4	9	1	221

2 Poles—All Fusible

No.	Each	Amp.	DIMENSIONS, INCHES			Std. Pkg.	Wt. Lb. Each
			Length	Width	Height		
3828	\$9.00	0-30	7	5	3 3/4	10	5 1/2
3829	12.50	31-60	8 3/8	6	4 3/4	5	10 1/2
3678	20.00	61-100	10 5/8	7 1/4	4 7/8	5	15
3679	31.00	101-200	13 3/8	10 1/4	6 1/4	5	34
3680	50.00	201-400	16 1/8	12 1/2	7	5	62
3681	80.00	401-600	19 1/4	15	8 1/2	3	76

3 Poles—All Fusible

3830	\$11.50	0-30	7	6 3/8	3 3/4	10	8 1/2
3831	16.00	31-60	8 3/8	7 1/4	4 3/4	5	11 1/2
3682	21.00	61-100	10 5/8	9	4 7/8	5	19 1/2
3683	37.00	101-200	13 3/8	13 1/8	6 1/4	3	45
3684	61.00	201-400	16 1/8	16 1/8	7	1	93
3685	110.00	401-600	19 1/4	19 1/4	8 1/2	1	126

3 Poles—2 Fusible—Neutral Nonfusible

3870	\$11.50	0-30	7	6 3/8	3 3/4	10	8 1/2
3871	16.00	31-60	8 3/8	7 1/4	4 3/4	5	11 1/2
3661	21.00	61-100	10 5/8	9	4 7/8	5	19 1/2
3662	37.00	101-200	13 3/8	13 1/8	6 1/4	3	45
3663	61.00	201-400	16 1/8	16 1/8	7	1	93
3664	110.00	401-600	19 1/4	19 1/4	8 1/2	1	126

4 Poles—All Fusible

3182	\$33.00	61-100	10 5/8	11 1/4	4 7/8	5	24
3183	63.50	101-200	13 3/8	16	6 1/4	3	52
3184	99.00	201-400	16 1/8	20	7	1	94
3185	150.00	401-600	19 1/4	23 3/8	8 1/2	1	148

4 Poles—3 Fusible—Neutral Nonfusible

3186	\$33.00	61-100	10 5/8	11 1/4	4 7/8	5	24
3187	63.50	101-200	13 3/8	16	6 1/4	3	52
3188	99.00	201-400	16 1/8	20	7	1	94
3189	150.00	401-600	19 1/4	23 3/8	8 1/2	1	148

For Potentials Not Exceeding 600 Volts

2 Poles—All Fusible

No.	Each	Amp.	DIMENSIONS, INCHES			Std. Pkg.	Wt. Lb. Each
			Length	Width	Ht.		
5868	\$16.50	0-30	11	7 1/4	4 3/4	5	16
5869	21.00	31-60	12 1/8	8 1/2	5 1/4	5	22
5770	28.50	61-100	14 3/4	10 1/4	5 1/4	4	30 1/2
5771	42.50	101-200	17 3/4	12 1/8	6 1/4	4	51
5772	79.00	201-400	20 1/2	15	7 1/2	1	76 1/2

3 Poles—All Fusible

5870	\$21.50	0-30	11	9 1/8	4 3/4	5	21
5871	26.50	31-60	12 1/8	10 7/8	5 1/4	5	30
5774	32.00	61-100	14 3/4	13 3/4	5 1/2	4	41
5775	50.00	101-200	17 3/4	15 1/4	6 1/2	4	66
5776	99.00	201-400	20 1/2	19 1/4	7 1/2	1	114
5779	166.00	401-600	26	21 1/4	9	1	225



No. 5871

Colt Conduit Fittings

For Water-Tight Service and Fuse Boxes
For Potentials Not Exceeding 250 Volts

Straightaway



No. 3702

No.	Each	Size Pipe Thread In.	Std. Pkg.	Wt. Lb. Each	THESE FITTINGS FOR—			
					Service Box No.	Fuse Box No.	Amp.	Poles
3832	\$1.25	1	20	3/4	3828	3872	0-30	2
3833	1.45	1 1/4	10	1 1/4	3829	3873	31-60	2
3702	2.10	1 1/2	10	1 1/2	3678	3670	61-100	2
3703	3.00	2	10	3	3679	3671	101-200	2
3704	4.30	2 1/2	10	4	3680	3672	201-400	2
3705	6.60	3	6	8	3681	3673	401-600	2
3834	1.45	1	20	1 1/4	3830	3874	0-30	3
					3870	3876		
3835	2.00	1 1/4	10	1 3/4	3831	3875	31-60	3
					3871	3877		
3706	2.35	1 1/2	10	2	3682	3674	61-100	3
					3661	3865		
3707	4.00	2	6	4	3683	3675	101-200	3
					3662	3866		
3708	6.00	2 1/2	2	5 1/2	3684	3676	201-400	3
					3663	3867		
3709	8.50	3	2	10	3685	3677	401-600	3
					3664	3868		
3935	3.30	1 1/2	10	4	3182	3190	61-100	4
3936	3.30	2	10	4	3186	3194		
3937	3.30	2 1/2	10	4				
3938	5.30	2	6	8	3183	3191	101-200	4
3939	5.30	2 1/2	6	8	3187	3195		
3940	5.30	3	6	8				
3941	8.00	3	2	14	3184	3192	201-400	4
3942	8.00	3 1/2	2	14	3188	3196		
3943	8.00	4	2	14				
3944	15.80	4	2	22	3185	3193	401-600	4
3945	15.80	4 1/2	2	22	3189	3197		
3946	15.80	5	2	22				

Right or Left-Hand



No. 3710

No.	Each	Size Pipe Thread In.	Std. Pkg.	Wt. Lb. Each	THESE FITTINGS FOR—			
					Service Box No.	Fuse Box No.	Amp.	Poles
3836	\$1.25	1	20	3/4	3828	3872	0-30	2
3837	1.45	1 1/4	10	1	3829	3873	31-60	2
3710	2.10	1 1/2	10	1 1/4	3678	3670	61-100	2
3711	3.00	2	10	2 1/4	3679	3671	101-200	2
3712	4.30	2 1/2	10	3 1/2	3680	3672	201-400	2
3838	1.45	1	20	3/4	3830	3874	0-30	3
					3870	3876		
3839	2.00	1 1/4	10	1	3831	3875	31-60	3
					3871	3877		
3714	2.35	1 1/2	10	1 3/4	3682	3674	61-100	3
					3661	3865		
3715	4.00	2	6	4	3683	3675	101-200	3
					3662	3866		
3716	6.00	2 1/2	2	6	3684	3676	201-400	3
					3663	3867		
3717	8.50	3	2	12	3685	3677	401-600	3
					3664	3868		

Colt Conduit Fittings

For Water-Tight Service and Fuse Boxes
For Potentials Not Exceeding 250 Volts
Back Entrance Conduit Fitting



No. 3718

No.	Each	Size Pipe Thread In.	Std. Pkg.	Wt. Lb. Each	THESE FITTINGS FOR—			
					Service Box No.	Fuse Box No.	Amp.	Poles
3780	\$1.25	1	20	3/4	3828	3872	0-30	2
3781	1.45	1 1/4	10	1	3829	3873	31-60	2
3718	2.10	1 1/2	10	1 1/2	3678	3670	61-100	2
3719	3.00	2	10	2	3679	3671	101-200	2
3720	4.30	2 1/2	10	3 1/4	3680	3672	201-400	2
3782	1.45	1	20	1	3830	3874	0-30	3
					3870	3876		
3783	2.00	1 1/4	10	1	3831	3875	31-60	3
					3871	3877		
3722	2.35	1 1/2	10	1 1/2	3682	3674	61-100	3
					3661	3865		
3723	4.00	2	6	3 1/4	3683	3675	101-200	3
					3662	3866		
3724	6.00	2 1/2	2	5 1/4	3684	3676	201-400	3
					3663	3867		
3730	8.50	3	2	8	3685	3677	401-600	3
					3664	3868		

Entrance Hoods



No. 3744

3784	\$2.40	...	20	1 1/2	3828	3872	0-30	2
3785	3.20	...	10	1 3/4	3829	3873	31-60	2
3740	3.95	...	10	2	3678	3670	61-100	2
3741	5.40	...	10	4 1/4	3679	3671	101-200	2
*3742	8.00	...	10	7 1/4	3680	3672	201-400	2
3743	13.00	...	6	9	3681	3673	401-600	2
3786	3.30	...	20	1 3/4	3830	3874	0-30	3
					3870	3876		
3787	3.65	...	10	2 1/4	3831	3875	31-60	3
					3871	3877		
*3744	5.00	...	10	3 1/4	3682	3674	61-100	3
					3661	3865		
*3745	6.30	...	6	7 1/4	3683	3675	101-200	3
					3662	3866		
*3746	9.25	...	2	9 3/4	3684	3676	201-400	3
					3663	3867		
*3747	16.50	...	2	15	3685	3677	401-600	3
					3664	3868		
*3947	6.60	...	10	6	3182	3190	61-100	4
					3186	3194		
*3948	10.00	...	6	11	3183	3191	101-200	4
					3187	3195		
*3949	18.00	...	2	20	3184	3192	201-400	4
					3188	3196		

*Split hoods.

Bushing Plates



No. 3983

3975	\$1.20	...	20	3/4	3828	3872	0-30	2
3976	1.30	...	10	1 1/2	3829	3873	31-60	2
3977	1.65	...	10	1 3/8	3678	3670	61-100	2
3978	2.35	...	10	1	3679	3671	101-200	2
3979	2.65	...	10	1 3/4	3680	3672	201-400	2
3980	3.30	...	6	2 1/2	3681	3673	401-600	2
3981	1.65	...	20	1 1/2	3830	3874	0-30	3
					3870	3876		
3982	1.80	...	10	3/4	3831	3875	31-60	3
					3871	3877		
3983	2.00	...	10	3/4	3682	3674	61-100	3
					3661	3865		
3984	3.00	...	6	1 1/2	3683	3675	101-200	3
					3662	3866		
3985	3.65	...	2	2 1/2	3684	3676	201-400	3
					3663	3867		
3986	3.85	...	2	3 1/4	3685	3677	401-600	3
					3664	3868		
3987	2.65	...	10	1 3/8	3182	3190	61-100	4
					3186	3194		
3988	3.65	...	6	2	3183	3191	101-200	4
					3187	3195		
3989	4.30	...	2	3 1/4	3184	3192	201-400	4
					3188	3196		
3990	6.60	...	2	4 1/4	3185	3193	401-600	4
					3189	3197		

Colt Conduit Fittings

For Water-Tight Service and Fuse Boxes
For Potentials Not Exceeding 600 Volts

Straightaway



No. 5784

No.	Each	Size Pipe Thread In.	Std. Pkg.	Wt. Lb. Each	THESE FITTINGS FOR			
					Service Box No.	Fuse Box No.	Amp.	Poles
5872	\$1.60	1	10	1	5868	5889	0-30	2
5873	2.00	1 1/4	10	1 1/2	5869	5890	31-60	2
5780	2.65	1 1/2	8	1 1/2	5770	5760	61-100	2
5781	3.70	2	8	2 3/4	5771	5761	101-200	2
5782	5.65	2 1/2	6	4 1/4	5772	5762	201-400	2
5874	1.80	1	10	1 1/4	5870	5891	0-30	3
5875	2.35	1 1/4	10	2 1/2	5871	5892	31-60	3
5784	3.30	1 1/2	8	3 1/2	5774	5764	61-100	3
5785	4.60	2	8	4 3/4	5775	5765	101-200	3
5786	7.25	2 1/2	2	6	5776	5766	201-400	3
5787	12.00	3	2	11	5777	5767	401-600	3

Colt Conduit Fittings

For Water-Tight Service and Fuse Boxes
For Potentials Not Exceeding 600 Volts

Entrance Hoods



No. 5824

No.	Each	Std. Pkg.	Wt. Lb. Each	THESE FITTINGS FOR			
				Service Box No.	Fuse Box No.	Amp.	Poles
5884	\$2.60	10	1 3/4	5868	5889	0-30	2
5885	3.30	10	2	5869	5890	31-60	2
5820	4.60	8	2 1/4	5770	5760	61-100	2
5821	6.60	8	4 1/4	5771	5761	101-200	2
5886	3.65	10	2	5870	5891	0-30	3
5887	4.00	10	3 1/4	5871	5892	31-60	3
5824	5.30	8	3 3/4	5774	5764	61-100	3
5825	7.25	8	6 1/2	5775	5765	101-200	3
*5826	11.25	2	10	5776	5766	201-400	3
5827	20.00	2	12 1/2	5777	5767	401-600	3

*Split hood.

Right or Left-Hand



No. 5794

No.	Each	Size Pipe Thread In.	Std. Pkg.	Wt. Lb. Each	THESE FITTINGS FOR			
					Service Box No.	Fuse Box No.	Amp.	Poles
5876	\$1.60	1	10	1	5868	5889	0-30	2
5877	2.00	1 1/4	10	1 1/4	5869	5890	31-60	2
5790	2.65	1 1/2	8	1 1/4	5770	5760	61-100	2
5791	3.70	2	8	2 1/2	5771	5761	101-200	2
5792	5.65	2 1/2	6	4 1/2	5772	5762	201-400	2
5878	1.80	1	10	1 1/4	5870	5891	0-30	3
5879	2.35	1 1/4	10	1 3/4	5871	5892	31-60	3
5794	3.30	1 1/2	8	2	5774	5764	61-100	3
5795	4.60	2	8	4	5775	5765	101-200	3
5796	7.25	2 1/2	2	7	5776	5766	201-400	3

Bushing Plates



No. 5983

No.	Each	Std. Pkg.	Wt. Lb. Each	THESE FITTINGS FOR			
				Service Box No.	Fuse Box No.	Amp.	Poles
5975	\$1.30	10	1/2	5868	5889	0-30	2
5976	1.60	10	5/8	5869	5890	31-60	2
5977	2.00	8	3/4	5770	5760	61-100	2
5978	2.65	8	1 1/8	5771	5761	101-200	2
5979	3.65	2	2	5772	5762	201-400	2
5981	1.75	10	5/8	5870	5891	0-30	3
5982	2.00	10	3/8	5871	5892	31-60	3
5983	2.35	8	1	5774	5764	61-100	3
5984	3.30	8	1 1/4	5775	5765	101-200	3
5985	4.30	2	2 3/4	5776	5766	201-400	3
5986	6.00	2	3 3/4	5777	5767	401-600	3

NOTE.—End plates with brass wiping sleeves for lead covered cable can be supplied as special fittings. Prices upon application.

Back Entrance



No. 5804

No.	Each	Size Pipe Thread In.	Std. Pkg.	Wt. Lb. Each	THESE FITTINGS FOR			
					Service Box No.	Fuse Box No.	Amp.	Poles
5880	\$1.60	1	10	3/4	5868	5889	0-30	2
5881	2.00	1 1/4	10	1 1/4	5869	5890	31-60	2
5800	2.65	1 1/2	8	1 1/4	5770	5760	61-100	2
5801	3.70	2	8	2 1/2	5771	5761	101-200	2
5802	5.65	2 1/2	6	4	5772	5762	201-400	2
5882	1.80	1	10	1 1/4	5870	5891	0-30	3
5883	2.35	1 1/4	10	1 3/4	5871	5892	31-60	3
5804	3.30	1 1/2	8	2 1/2	5774	5764	61-100	3
5805	4.60	2	8	3 1/2	5775	5765	101-200	3
5806	7.25	2 1/2	2	7	5776	5766	201-400	3

Gaskets



No. 5810

No.	Each	Std. Pkg.	Wt. Lb. Std. Pkg.	THESE FITTINGS FOR			
				Service Box No.	Fuse Box No.	Amp.	Poles
5665	\$.40	10	1/4	5868	5889	0-30	2
5666	.50	10	3/8	5869	5890	31-60	2
5810	.60	8	3/4	5770	5760	61-100	2
5811	.70	8	1	5771	5761	101-200	2
5812	1.00	2	1 1/4	5772	5762	201-400	2
5667	.50	10	1/4	5870	5891	0-30	3
5668	.60	10	3/8	5871	5892	31-60	3
5814	.65	8	3/4	5774	5764	61-100	3
5815	.75	8	1	5775	5765	101-200	3
5816	1.10	2	3/8	5776	5766	201-400	3
5817	1.65	2	1/2	5777	5767	401-600	3

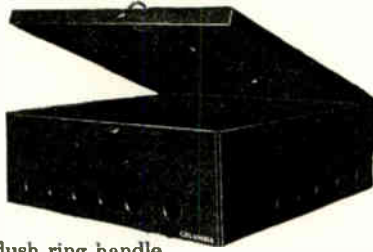
Type A Columbia Surface Steel Cabinets

Adapted to nearly all installations where a cabinet for surface mounting is to be used as a junction, service, switch, panel, or cut-out cabinet.

Construction. Of sheet steel, required thickness to conform with Underwriters'.

Finish. Standard finish is high grade baked-on black Japan. Olive green, aluminum, white enamel, or other special finishes at extra charge.

Hardware. Cabinets up to 18 inches in width or height are regularly equipped with flush ring handle and friction catch; over 18 inches wide and not exceeding 24 inches high a turn knob and latch is used. Larger cabinets and all double door cabinets are fitted with vault handle latch. Unless otherwise specified, all boxes are hinged on the long side. Code requirements for double and three-point catches



are provided for in the listing.

Knockouts. All sizes, including 12x10 inches have one 3/4-inch knockout in center of each side and balance 1/2-inch knockouts; sizes 12x12 inches and up, one 1 1/4 and one 1-inch knockouts located near center of each side with remaining space filled with 1/2-inch knockouts.

Galvanized Cabinets can be furnished at 15% extra charge.

Boxes without Covers can be furnished at a deduction of 20% in list prices.

Flange can be supplied on front edges for mounting a wood trim or other cover when specified.

For drilled holes, 1 cent extra for each hole per box; drilled and tapped holes, 2 cents for each hole per box; minimum charge per order, 50 cents.

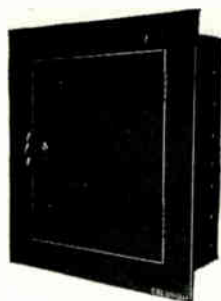
Width In.	Ht., In.	DEPTH, INCHES					
		3	4	6	8	10	12
*4 1/2	5	\$.86	\$ 1.17	.....	.....	.....	.....
*4 1/2	9	1.00	1.32	.....	.....	.....	.....
*6	6	.94	1.08	\$ 1.88	\$ 2.05	.....	.....
*6	9	1.15	1.48	2.26	2.54	.....	.....
*6	10	1.32	1.58	2.41	2.70	.....	.....
*6	11	1.41	1.70	2.26	2.98	.....	.....
*6	12	1.50	1.68	2.66	3.06	.....	.....
*6	16	1.80	2.04	3.00	3.78	.....	.....
*6	8	1.05	1.32	2.13	2.36	.....	.....
8	8	1.28	1.53	2.30	2.76	.....	.....
8	10	1.47	1.72	2.55	3.16	\$ 3.60	.....
8	12	1.72	2.01	2.90	3.55	4.00	\$ 4.35
8	15	2.01	2.31	3.30	4.10	4.70	5.25
8	18	2.31	2.67	3.60	4.75	5.40	6.00
9	9	1.48	1.89	2.55	3.20	3.75	4.05
9	12	1.83	2.13	3.00	3.80	4.35	4.30
9	15	2.10	2.45	3.50	4.45	5.00	5.60
9	16	2.28	2.52	3.67	4.60	5.25	5.85
9	18	2.43	2.91	3.95	4.95	5.75	6.35
9	20	2.70	3.17	4.25	5.35	6.20	6.85
9	24	3.06	3.55	4.80	6.17	7.20	7.90
9	28	5.45	6.15	7.55	9.35	10.05	11.55
9	32	6.25	6.80	8.40	10.45	11.68	12.86
9	36	6.78	7.60	9.20	11.55	12.90	14.18
10	10	1.78	2.01	2.95	3.60	4.15	4.55
10	12	1.98	2.25	3.25	4.05	4.60	5.25
10	15	2.34	2.61	3.70	4.65	5.35	5.92
10	18	2.67	2.80	4.20	5.30	6.10	6.75
10	20	3.16	3.58	4.65	5.66	6.35	7.05
10	24	3.70	4.15	5.30	6.55	7.30	8.10
10	28	5.98	6.57	8.07	9.94	10.78	12.20
10	32	6.60	7.35	8.97	10.69	12.30	13.60
10	36	7.35	8.12	9.96	12.20	13.60	15.00
12	12	2.45	2.78	3.72	4.40	4.95	5.50
12	16	3.05	3.06	4.45	5.37	6.00	6.62
12	18	3.32	3.30	4.80	5.85	6.50	7.10
12	20	3.56	3.85	5.15	6.30	7.05	7.75
12	24	4.24	4.50	5.88	7.30	8.10	8.90
12	28	6.75	7.44	8.97	11.05	12.20	13.49
12	32	7.53	8.34	9.93	12.30	13.60	14.90
12	36	8.40	9.24	10.95	13.60	15.00	16.40
12	40	9.24	10.07	11.94	14.45	16.40	17.90
16	12	3.05	3.06	4.45	5.38	6.00	6.63
16	15	3.55	3.60	5.10	6.20	6.90	7.62
16	18	4.15	4.15	5.75	7.05	7.80	8.57
16	20	4.53	4.50	6.10	7.65	8.40	9.24
15	24	5.00	5.00	6.80	8.40	9.28	10.15
16	28	8.40	9.18	10.80	13.24	14.48	15.80
16	32	9.45	10.20	12.00	14.73	16.15	17.50
16	36	10.50	11.37	13.17	15.45	17.80	19.22
16	40	10.58	12.48	14.40	17.80	19.40	21.05
18	18	4.60	5.10	6.25	7.65	8.50	9.27
18	20	5.00	5.50	6.70	8.25	9.15	10.00
18	24	8.08	8.88	10.40	12.62	13.95	15.45
18	28	9.24	10.08	11.70	14.30	15.35	17.00
18	32	10.38	11.25	13.00	15.90	17.45	18.88
18	36	11.58	12.45	14.31	17.50	19.20	20.74
18	40	12.75	13.65	15.60	19.20	20.96	22.20
21	21	8.19	9.00	10.50	12.80	14.02	15.68
21	24	9.15	9.96	11.64	13.78	15.50	16.80
21	28	10.50	11.40	13.08	16.00	17.44	18.85
21	32	11.85	12.75	14.73	17.76	19.35	20.86

*Hinged on width or short side.

Width In.	Ht., In.	DEPTH, INCHES					
		3	4	6	8	10	12
21	36	\$ 13.14	\$ 13.10	\$ 16.05	\$ 19.55	\$ 21.25	\$ 23.07
21	40	14.49	15.45	17.52	21.38	23.17	24.96
24	24	10.32	11.16	12.84	15.55	17.02	18.50
24	28	11.76	12.69	14.46	17.55	19.14	20.67
24	32	13.26	14.22	16.11	19.46	21.22	22.88
24	36	14.76	15.72	17.76	21.44	23.35	25.12
24	40	16.20	17.22	19.05	23.50	25.40	27.36
24	42	28.30	29.89	33.10	41.45	44.32	47.68
24	48	31.60	34.15	37.81	43.68	45.12	48.75
30	24	16.54	17.44	19.30	22.50	24.15	24.35
30	28	18.28	19.30	21.28	24.96	26.20	28.30
30	32	19.72	21.10	23.26	27.20	27.50	30.88
30	36	34.20	36.10	39.80	43.80	46.50	49.20
30	40	37.90	40.10	43.20	48.60	51.60	54.60
30	44	41.70	44.10	47.40	53.50	56.80	60.10
30	48	45.50	48.10	51.50	58.40	61.90	65.50
30	54	59.90	63.15	69.70	81.10	85.90	90.70
30	60	66.60	70.20	77.50	90.00	95.40	100.50
30	66	71.10	74.80	82.60	96.00	101.80	107.80
30	72	79.90	84.20	92.80	108.00	114.40	120.90
36	36	41.70	44.00	47.30	53.50	57.10	60.10
36	42	56.20	59.30	65.40	76.00	80.60	85.10
36	48	64.00	67.50	74.40	86.50	91.70	96.90
36	54	71.80	75.60	83.40	97.10	102.80	108.70
36	60	79.90	84.30	92.90	108.00	114.40	121.00
36	66	87.85	92.70	102.10	118.75	125.80	133.00
36	72	95.80	101.10	111.30	129.50	137.20	145.00
36	78	103.80	109.50	120.80	140.50	148.80	157.30
36	84	111.70	117.80	129.90	151.00	160.00	169.00
42	42	65.50	69.00	76.20	88.50	93.90	99.20
42	48	74.70	78.80	86.90	101.00	107.10	113.20
42	54	84.00	88.55	97.55	113.50	120.30	127.10
42	60	93.30	98.30	108.20	126.00	133.50	141.00
42	66	102.40	108.00	119.00	138.50	146.80	155.10
42	72	111.70	117.80	129.90	151.00	160.00	169.00
42	78	121.30	127.90	141.00	164.00	174.00	183.80
42	84	130.50	137.50	151.80	176.50	187.00	197.50
42	90	139.80	147.30	162.50	189.00	200.20	211.70
42	96	149.20	157.40	173.50	201.80	213.90	226.00
48	48	85.50	90.10	98.40	115.40	122.30	129.30
48	54	95.80	101.80	111.30	129.40	137.20	145.00
48	60	106.50	112.30	123.80	144.00	152.80	161.20
48	66	117.20	123.50	136.20	158.30	167.80	177.30
48	72	128.00	135.00	148.80	173.00	183.40	193.80
48	78	138.30	145.90	160.80	187.00	198.40	209.60
48	84	149.30	157.40	173.60	201.80	213.70	226.00
48	90	159.50	168.10	186.30	215.50	228.50	241.80
48	96	170.20	179.40	197.80	230.00	243.80	256.80
54	54	107.90	113.80	125.40	146.00	154.70	163.50
54	60	119.80	126.40	139.20	162.00	171.80	181.50
54	66	131.70	138.80	153.00	178.00	183.70	199.40
54	72	143.50	151.20	166.80	194.00	205.70	217.20
54	78	155.40	163.80	180.70	210.00	222.60	235.40
54	84	166.80	175.70	193.50	225.00	238.60	252.10
54	96	188.80	198.90	219.50	255.00	270.20	285.80
60	60	131.40	138.50	152.80	177.50	188.20	198.80
60	66	144.30	152.10	167.80	195.00	206.80	208.20
60	72	159.20	167.80	185.00	215.00	228.00	241.00
60	78	170.80	180.00	198.50	231.20	244.80	258.40
60	84	185.00	195.00	215.00	250.00	265.00	280.00
60	90	198.00	208.50	230.00	258.80	283.80	299.60
60	96	210.80	222.00	245.00	285.00	302.00	319.00

Type B Columbia Flush Steel Cabinets

Construction. Of sheet steel, required thickness to conform with Board of Underwriters'. Removable trim and door. Plain type without ornamental beads; body is formed from one piece of steel with corners folded in and securely welded.



Finish. Standard finish is black baked Japan.

Hardware. Cabinet is regularly equipped with knob and turn catch. Cabinet with surface area of over 360 square inches is furnished with vault handle.

Cabinet can be supplied with any style hinges, catch or lock.

Holes for Cutouts, Switches, etc. Add 1 cent per hole for each box; for tapped holes, 2

cents per hole for each box; minimum charge per order, 50 cents.

Conduit Drilling. Cabinet is regularly furnished with standard knockouts: all sizes, including 12x10 inches have one 3/4-inch knockout in center of each side and balance 1/2-inch knockouts; sizes 12x12 inches and up, one 1 1/4 and one 1-inch knockouts located near center of each side with remaining space filled with 1/2-inch knockouts.

For special knockouts, add \$1.00 for each additional size change. Specify if boxes are desired without knockouts.

Approved cabinet will be furnished unless otherwise ordered.

Width In.	Ht. In.	DEPTH, INCHES					Width In.	Ht. In.	DEPTH, INCHES						
		3	4	6	8	10			12	3	4	6	8	10	12
4 1/2	5	\$3.56	\$3.90	.....	.....	.....	.....	24	24	\$19.00	\$20.25	\$23.05	\$24.40	\$26.25	\$28.22
4 1/2	9	3.69	4.00	\$5.25	.....	.....	.....	24	28	21.70	23.05	25.95	27.60	29.70	32.20
6	6	3.66	3.95	4.60	.....	.....	.....	24	32	24.40	25.80	28.80	30.78	33.15	35.35
6	9	3.88	4.21	5.00	.....	.....	.....	24	36	27.05	28.62	31.68	34.95	36.55	39.85
6	10	3.97	4.30	5.20	\$5.30	\$5.60	\$6.00	24	40	29.80	31.40	34.55	37.20	39.95	42.45
6	11	4.09	4.45	5.30	5.50	5.75	6.25	24	42	36.45	38.70	43.65	52.65	56.70	61.20
6	12	4.21	4.54	5.15	6.45	6.57	6.90	24	48	43.70	45.00	50.62	61.20	63.45	68.55
6	16	4.69	5.08	6.00	7.00	7.95	8.50	30	24	28.12	24.05	27.44	29.25	31.50	33.75
6	8	3.81	4.11	4.85	5.00	5.33	5.85	30	28	26.35	27.80	30.95	32.95	35.25	37.70
8	8	4.11	4.41	5.25	5.60	5.96	6.45	30	32	29.65	31.15	34.45	36.65	39.05	41.50
8	10	4.38	4.74	5.55	6.10	6.55	6.95	30	36	39.80	42.40	47.05	50.40	53.10	56.70
8	12	4.55	4.94	5.75	6.55	7.00	7.50	30	40	43.60	46.20	51.35	53.90	57.60	61.55
8	15	4.97	5.27	6.15	7.35	7.89	8.70	30	44	47.80	50.90	55.60	57.40	61.50	65.50
8	18	5.39	5.54	7.00	8.25	8.85	9.27	30	48	51.75	54.20	59.80	62.80	66.70	71.30
9	9	4.33	4.69	5.50	6.15	6.55	6.95	30	54	68.10	72.90	81.00	93.90	97.20	100.40
9	12	4.75	5.11	5.90	6.95	7.45	8.00	30	60	75.60	81.00	90.00	104.40	108.00	111.60
9	15	5.20	5.62	6.55	7.90	8.45	9.00	30	66	82.60	86.50	96.10	112.80	115.40	119.10
9	16	5.38	5.80	7.00	8.20	8.77	9.31	30	72	92.80	97.20	108.00	125.60	129.50	133.70
9	18	5.68	6.20	7.75	8.80	9.40	9.81	30	36	46.60	48.50	54.70	58.50	62.75	66.60
9	20	6.10	6.70	8.35	9.40	9.67	10.62	36	42	65.40	68.40	76.10	88.20	91.20	94.30
9	24	7.25	8.00	9.10	9.80	11.20	12.28	36	48	74.30	77.80	86.50	100.40	103.80	107.40
9	28	10.30	11.16	13.45	14.31	15.79	17.37	36	54	83.40	87.40	97.00	112.50	116.50	120.40
9	32	11.38	12.51	14.98	15.84	17.82	19.35	36	60	92.80	97.20	108.00	125.40	129.50	134.00
9	36	11.46	13.86	16.51	17.37	19.84	21.37	36	66	106.10	111.10	123.40	130.80	148.00	153.00
10	10	4.61	4.97	5.80	6.73	7.35	7.68	36	72	111.40	116.40	129.60	150.20	155.40	160.60
10	12	4.94	5.63	6.55	7.37	7.75	8.80	36	78	120.80	126.40	140.40	162.90	168.50	174.10
10	15	5.42	5.84	7.10	8.29	9.08	9.18	36	84	129.80	135.80	151.00	175.20	181.20	187.20
10	18	6.00	6.55	8.30	9.17	9.36	10.35	36	42	73.60	79.00	88.00	102.40	106.00	109.60
10	20	6.75	7.50	8.60	9.25	10.22	11.29	42	48	86.90	90.90	100.50	116.00	120.00	124.00
10	24	7.55	8.25	9.40	10.62	11.78	12.96	42	54	97.60	102.00	113.50	131.80	136.40	140.80
10	28	10.92	12.02	14.35	15.20	16.72	18.27	42	60	108.40	113.50	126.00	146.10	151.20	156.20
10	32	13.32	13.50	16.42	17.10	18.70	20.52	42	66	119.00	124.50	138.40	160.80	166.00	171.50
10	36	13.72	15.00	18.48	19.00	20.70	22.77	42	72	129.80	135.80	151.00	175.10	181.10	187.10
12	12	5.00	5.75	7.25	7.90	8.50	8.85	42	78	141.00	147.50	164.00	190.20	196.80	202.40
12	16	6.35	7.05	8.50	8.85	9.68	12.42	42	84	150.50	157.50	175.00	203.00	210.00	217.00
12	18	7.40	7.85	9.25	9.54	10.52	11.56	42	90	160.80	168.50	187.00	206.80	224.60	231.80
12	20	7.65	8.45	9.25	10.32	11.42	12.51	42	96	171.20	179.10	199.00	231.00	239.00	246.80
12	24	8.60	8.90	10.58	11.48	13.14	14.35	42	48	99.50	104.00	115.60	134.10	138.80	143.20
12	28	12.50	13.58	15.98	16.68	18.60	20.20	42	54	110.40	115.40	128.60	149.20	154.40	159.60
12	32	14.00	15.15	17.72	19.00	20.70	22.50	48	60	123.80	129.80	142.40	164.80	170.00	175.50
12	36	15.48	16.72	19.50	21.10	23.25	24.97	48	66	136.20	141.80	159.00	182.00	189.10	194.10
12	40	16.95	18.36	21.24	23.20	25.40	27.45	48	72	146.50	152.50	169.00	195.20	201.80	207.40
16	12	6.50	7.30	8.25	8.80	9.68	10.62	48	78	159.20	166.50	185.00	204.80	222.60	229.80
16	15	7.50	8.15	9.05	10.08	11.25	11.19	48	84	171.20	179.10	199.00	231.00	239.00	246.80
16	18	8.30	8.65	10.16	11.42	12.60	13.72	48	90	184.80	193.30	214.80	249.00	253.80	266.20
16	20	8.60	9.36	10.92	12.42	13.58	15.80	48	96	197.10	206.10	229.00	265.80	274.80	284.00
15	24	9.50	10.25	12.06	13.62	14.92	15.79	48	54	125.80	131.80	144.40	166.80	172.00	177.50
16	28	15.52	16.65	19.27	20.54	22.24	24.39	48	60	137.50	142.80	160.00	183.00	190.10	195.10
16	32	17.50	18.70	21.52	22.95	24.92	26.77	48	66	151.50	158.50	176.00	204.00	211.00	218.00
16	36	19.48	20.75	23.75	25.38	28.62	29.18	54	72	165.50	173.50	192.00	211.80	229.60	236.80
16	40	21.46	22.84	26.00	27.38	30.30	31.55	54	78	180.00	188.10	208.00	240.00	248.00	255.80
18	18	8.66	9.40	11.06	12.42	13.68	14.88	54	84	193.50	202.10	225.00	261.80	270.80	280.00
18	20	9.36	10.22	11.93	13.42	14.75	15.98	54	90	221.00	230.50	257.00	298.00	308.00	318.00
18	24	14.85	16.10	18.68	19.77	21.40	23.16	54	60	152.50	158.50	175.00	201.20	207.80	214.40
18	28	17.10	18.36	20.92	22.38	23.12	25.92	54	66	167.50	175.10	195.00	227.00	235.00	242.80
18	32	19.35	20.60	23.16	24.88	26.82	28.65	54	72	184.80	193.30	214.80	249.00	253.80	266.20
18	36	21.60	22.88	25.42	27.44	29.50	31.40	54	78	198.50	207.10	231.00	267.80	276.80	286.00
18	40	23.85	25.16	27.65	30.00	32.20	34.18	60	84	215.50	224.50	251.00	292.00	302.00	312.00
21	21	12.08	13.05	14.85	16.70	18.00	19.40	60	90	230.00	240.80	267.00	310.00	320.80	332.00
21	24	17.05	18.22	20.88	22.42	24.21	26.00	60	96	245.00	256.40	285.00	330.80	342.00	353.80
21	28	19.48	20.78	23.50	25.02	27.00	29.00	60	60	152.50	158.50	175.00	201.20	207.80	214.40
21	32	21.92	23.38	26.10	27.60	29.80	31.95	60	66	167.50	175.10	195.00	227.00	235.00	242.80
21	36	24.36	25.95	28.70	30.24	32.55	34.95	60	72	184.80	193.30	214.80	249.00	253.80	266.20
21	40	26.76	28.44	31.75	32.85	35.35	37.85	60	78	198.50	207.10	231.00	267.80	276.80	286.00
								60	84	215.50	224.50	251.00	292.00	302.00	312.00
								60	90	230.00	240.80	267.00	310.00	320.80	332.00
								60	96	245.00	256.40	285.00	330.80	342.00	353.80

Bull Dog Main Service Equipment

Sequence: Meter—Switch—Fuse

Dead Front Construction

Main Service and Lighting Cabinets

Practically all items will be shipped luminized finish, except where a few black finish items remain in stock, and these will be shipped first unless orders specifically call for luminized.

Main SAFToFUSE Switch—125 Volts A.C., Convertible Neutral*



No. 66203

Amps.	Poles	Blades	Fuse Conn.	Branch Fuses, 30 Amps.	Std. Pkg. Qty.	Weight Pounds Each	Surface Mounting		Flush Mounting	
							No.	Each	No.	Each
30	2	1	1 Plug		5	6	64301	\$4.50	65301	\$5.00
30	2	1	1 Plug	2	5	10	64302	5.50	65302	6.50
30	2	1	1 Plug	4	5	11	64303	7.00	65303	8.00

Main SAFToFUSE Switch—125/250 Volts A.C., Convertible Neutral*

30	3	2	2 Plug		5	6	64307	\$5.50	65307	\$6.50
30	3	2	2 Plug	2	5	10	64308	6.50	65308	7.50
30	3	2	2 Plug	4	5	11	64309	8.00	65309	9.00
30	3	2	2 Plug	6	1	16	64310	10.10	65310	10.60
30	3	2	2 Plug	8	1	18	64312	14.50	65312	15.00
60	3	2	2		5	9	66200	6.20	67200	7.20
60	3	2	2	2	5	11	66201	8.20	67201	9.20
60	3	2	2	4	5	12	66202	8.50	67202	9.50
60	3	2	2	6	1	18	66203	12.80	67203	12.80
60	3	2	2	8	1	20	66204	17.50	67204	18.50
60	3	2	2	10	1	24	66205	21.00	67205	23.00
60	3	2	2	12	1	28	66206	26.00	67206	27.00
100	3	2	2		1	12	68000	16.00	69000	24.00

Main SAFToFUSE Switch—230 Volts, 3 Phase

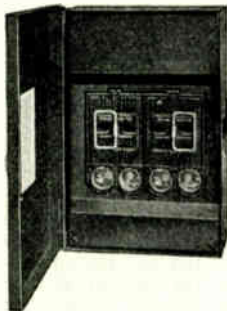
60	3	3	3		4	11	55332	\$12.00	56332	\$13.00
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Main SAFToFUSE Switch—120/208 Volts, 3 Phase 4 Wire

60	4	3	3		4	11	55432	\$14.00	56432	\$15.00
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Main Service, Range and Lighting Cabinets

Main Switch Fusible—125/250 Volts A.C. Grounded Solid Neutral



No. 551204BKC

Amps.	Poles	Blades	Fuse Conn.	BRANCHES			Std. Pkg. Qty.	Weight Pounds Each	Surface Mounting		Flush Mounting	
				SAFToFUSE Switch	30-Amp. Plug Fuse	60-Amp. Plug Fuse			No.	Each	No.	Each
60	3	2	2 Cart.	1	0	4	14	551200	\$9.50	561200	\$10.50	
60	3	2	2 Cart.	1	2	4	15	551202	9.50	561202	10.50	
60	3	2	2 Cart.	1	4	4	10	551204BKC	8.55	561204BKC	9.55	
60	3	2	2 Cart.	1	4	4	10	551204XBKC	8.55	561204XBKC	9.55	
60	3	2	2 Cart.	1	4	4	10	551204PTK	8.55	.....	.....
60	3	2	2 Cart.	1	4	4	10	551204XPTK	8.55	.....	.....
60	3	2	2 Cart.	1	6	4	17	551206	14.50	561206	14.50	

Main Switch Not Fusible—125/250 Volts A.C. Grounded Solid Neutral

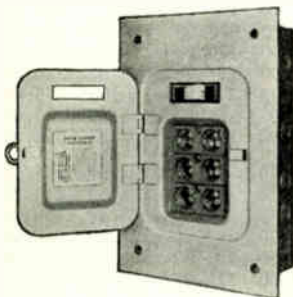
60	3	2	1	4	4	10	550204	\$8.30	560204	\$9.30
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Bull Dog Fuseless Main Service Equipment

Incorporating Rocker Type Dead Front Switches

Convertible Type—3 Wire 125/250 Volts A.C., Convertible Neutral*

Practically all items will be shipped luminized finish, except where a few black finish items remain in stock, and these will be shipped first unless orders specifically call for luminized.



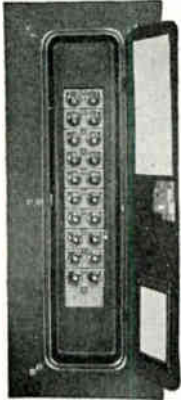
Amps.	Branch Fuses	Surface Mounting		Flush Mounting	
		No.	Each	No.	Each
30	2	†64032	\$2.80	.....	.....
30	3	64033	6.00	65033	\$6.50
30	4	64034	6.50	65034	7.00
30	5	64035	7.00	65035	7.50
30	6	64036	7.50	65036	8.00

*A convertible neutral is a grounded neutral which may be converted into an insulated neutral by removing the bonding screw which grounds the neutral to the box.
†Grounded neutral.

Bull Dog Fusenter Lighting Panelboards

Type NRP

- MAINS.** 3 Wire, 125/250 Volts, Lugs Only.
BRANCHES. 2 Wire, 30 Amperes, 125 Volts, Plug Fuse Only.
CABINET. Box, Code Gage Galvanized Steel—10½ Inches Wide, 4½ Inches Deep, 3-Inch Wiring Gutters. Front, Code Thickness Steel, Flush Spring Locks—Luminized Finish.

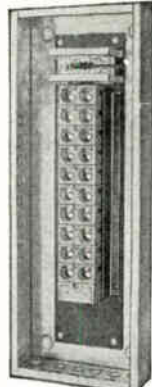


No. NRP320L
Flush Type

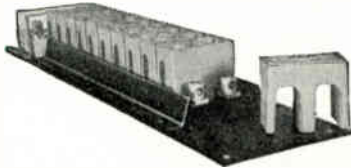
The Fusenter Lighting Panel contains a compact porcelain unit, with silver surfaced current-carrying parts.

Main terminals are solderless Nire Grips.

Flush fronts will be furnished unless surface type is specified on order.



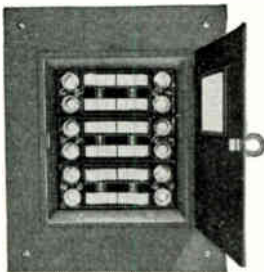
No. NRP320L
Surface Type



Interior Assembly—Lug Cover Removed to Show Solderless Main Terminations

No.	Each	No. of Circuits	Main Amp.	Box Height Inches	Weight Pounds Each
NRP308L	\$16.00	8	60	15	20
NRP310L	18.00	10	60	20	25
NRP312L	20.50	12	60	20	26
NRP314L	22.60	14	100	24	34
NRP316L	24.30	16	100	24	35
NRP318L	26.00	18	100	28	40
NRP320L	27.70	20	100	28	41
NRP322L	30.90	22	100	28	42
NRP324L	34.15	24	100	28	43

Bull Dog Rocker Type Switch Centers



No. RPS312L

- MAINS.** Lugs Only, 60-Ampere Solderless Type.
BRANCHES. 30-Ampere Single Pole Rocker Type Switches and Plug Fuse Connections.
CABINET. One Door Construction. Ring Spring Catch Only—Locks Cannot Be Furnished with This Type. Width, 12 Inches, Depth, 3¾ Inches, 1½-Inch Wiring Gutters.

The shallow boxes permit flush type switch centers to be mounted in thin walls composed of sheet rock, wall board, masonite, or similar material.

3/2 Wire—125-250 Volts Solid Neutral

No. of Circuits	INSIDE BOX DIMENSIONS, INCHES	Weight Pounds	Flush Type No.	Surface Type No.	Each
	Height Width Depth				
4	7 12 3¾	16	RPS304L	RPS304LS	\$10.00
8	12 12 3¾	24	RPS308L	RPS308LS	20.00
12	15 12 3¾	30	RPS312L	RPS312LS	30.00

3 Phase 4 Wire—120-208 Volts Solid Neutral

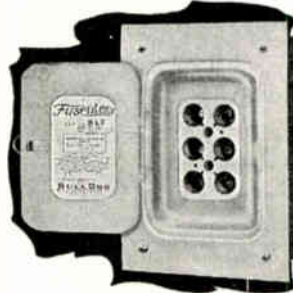
8	12 12 3¾	24	RPS408L	RPS408LS	\$22.00
12	15 12 3¾	30	RPS412L	RPS412LS	33.00

Bull Dog Fusenter Lighting Panelboards

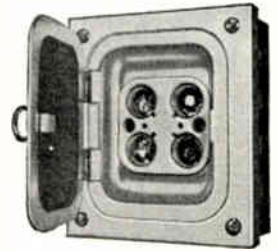
- MAINS.** 2 or 3 Wire, 125/250 Volts, Solid Neutral.
BRANCHES. 30 Amperes, 125 Volts, Plug Fuse Only.
CABINET. Box, Code Gage Galvanized Steel—1½-Inch Wiring Gutters. Front, Embossed Code Gage Steel—Luminized.

Will accommodate non-tamperable fuses.

Type BF



No. B6F Flush Type



No. B4SE Surface Type

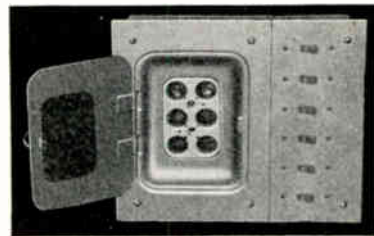
No. of Circuits	Std. Pkg. Qty.	Weight Pounds	*Flush Type No.	Surface Type No.	Each
2	10	17	B 2F	B 2SE	\$2.20
4	5	33	B 4F	B 4SE	2.90
6	5	57	B 6F	B 6SE	4.85
8	1	13	B 8F	B 8SE	7.30
10	1	15	B10F	B10SE	10.70
12	1	16	B12F	B12SE	14.55

Dimensions

No. of Circuits	CABINET DIMENSIONS, INCHES	Height	Width	Depth	KNOCKOUTS, INCHES		
					Back	Ends	Sides
2	7	4	25/8	1/2-3/4	1/2-3/4	1/2-3/4	
4	7	6	3	1/2-3/4	1/2-1	1/2-3/4	
6	10½	7	3	1/2-1	1/2-1¼	1/2-1¼	
8	13	8	3	1/2-3/4	1/2-1¼	1/2-1¼	
10	12	10½	3	1/2-3/4	1/2-1¼	1/2-1¼	
12	12	10½	3	1/2-3/4	1/2-1¼	1/2-1¼	

*Equipped with adjustable mounting brackets of a unique, flexible design, to permit installing the box level at all times and flush with the finish surface of the wall.

Type BSF



No. BS6F Flush Type

Equipped with gang switch plates; toggle switches not included.

No. of Circuits	Std. Pkg. Qty.	Weight Pounds	Flush Type No.	Surface Type No.	Each
4	5	48	BS 4F	BS 4SE	\$6.30
6	1	14	BS 6F	BS 6SE	8.70
8	1	21	BS 8F	BS 8SE	11.65
10	1	25	BS10F	BS10SE	14.55
12	1	26	BS12F	BS12SE	17.45

Dimensions

No. of Circuits	CABINET DIMENSIONS, INCHES	Height	Width	Depth	KNOCKOUTS INCHES		
					Back	Ends	Sides
4	7	10½	3	1/2-3/4	1/2-3/4	1/2-1¼	
6	10½	12	3	1/2-3/4	1/2-1¼	1/2-1¼	
8	15	12½	3¾	1/2-2	1/2-2	1/2-2	
10	12½	19	3¾	1/2-2	1/2-2	1/2-2	
12	12½	19	3¾	1/2-2	1/2-2	1/2-2	

Square D Multi-Breaker Type MB Service and Load Centers

For Use on A.C. Systems Only
With Separate Trip

Schedule B1

MAINS. Insulated (Groundable) Neutral—Underwriters' Approved As a Panelboard for Use As a Load Center beyond the Service Equipment, or from One to Six Circuits As Service Equipment Where Required by Local Rules.

BRANCHES: Lighting Circuits—2-Wire S/N 115 Volts A.C. Single Pole Breaker (Form MB) and Neutral.
Range, Water Heater and Subfeed Circuits—3-Wire S/N 115/230 Volts A.C. Double Pole Breaker (Separate Trip) and Neutral.

Specify 15, 20, 25, 35 or 50-ampere one-pole or two-pole branch circuits desired for each number ordered.

For flush devices, add F to number. For surface devices, add S to number.



No. 35041F



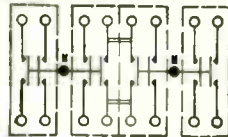
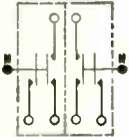
No. 57160S

2-Wire S/N 115 Volts A.C.



No.	Each	No. of MAIN OR BRANCH CIRCUITS 1-Pole Breakers	No. of MAIN OR BRANCH CIRCUITS 2-Pole Breakers	Box No.	Solid Mains Rating Amps. (Max.)
31010	\$6.00	1	0	3	35
31020	7.00	2	0	3	35
31030	8.00	3	0	3	35
31040	9.00	4	0	3	35

3-Wire S/N 115-230 Volts A.C.

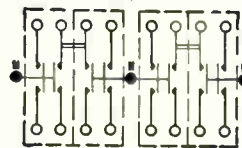


35020	\$8.00	2	0	3	70
35030	9.00	3	0	3	70
35040	9.00	4	0	3	70
35050	10.00	5	0	3	70
35060	11.00	6	0	3	70
35070	12.00	7	0	3	70
35080	13.00	8	0	3	70
35001	8.00	0	1	3	70
35011	9.00	1	1	3	70
35021	9.00	2	1	3	70
35031	10.00	3	1	3	70
35041	11.00	4	1	3	70
35051	12.00	5	1	3	70
35061	13.00	6	1	3	70
35002	9.50	0	2	3	70
35012	10.50	1	2	3	70
35022	11.50	2	2	3	70
35032	12.50	3	2	3	70
35042	13.50	4	2	3	70
*35003	11.65	0	3	3	70
*35013	12.65	1	3	3	70
*35023	13.65	2	3	3	70
*35004	13.80	0	4	3	70
57090	27.00	9	0	5	100
57100	28.00	10	0	5	100
57110	29.00	11	0	5	100
57120	30.00	12	0	5	100
57130	32.00	13	0	5	100
57140	33.00	14	0	5	100
57150	34.00	15	0	5	100
57160	35.00	16	0	5	100
57071	27.00	7	1	5	100
57081	28.00	8	1	5	100
57091	29.00	9	1	5	100
57101	30.00	10	1	5	100
57111	32.00	11	1	5	100
57121	33.00	12	1	5	100
57131	34.00	13	1	5	100
57141	35.00	14	1	5	100

3-Wire S/N 115-230 Volts A.C.—Continued

No.	Each	No. of MAIN OR BRANCH CIRCUITS 1-Pole Breakers	No. of MAIN OR BRANCH CIRCUITS 2-Pole Breakers	Box No.	Solid Mains Rating Amps. (Max.)
57052	\$27.00	5	2	5	100
57062	28.00	6	2	5	100
57072	29.00	7	2	5	100
57082	30.00	8	2	5	100
57092	32.00	9	2	5	100
57102	33.00	10	2	5	100
57112	34.00	11	2	5	100
57122	35.00	12	2	5	100
57033	27.00	3	3	5	100
57043	28.00	4	3	5	100
57053	29.00	5	3	5	100
57063	30.00	6	3	5	100
57073	32.00	7	3	5	100
57083	33.00	8	3	5	100
57093	34.00	9	3	5	100
57103	35.00	10	3	5	100
57014	27.00	1	4	5	100
57024	28.00	2	4	5	100
57034	29.00	3	4	5	100
57044	30.00	4	4	5	100
57054	32.00	5	4	5	100
57064	33.00	6	4	5	100
57074	34.00	7	4	5	100
57084	35.00	8	4	5	100
*57005	28.15	0	5	5	100
*57015	29.15	1	5	5	100
*57025	30.15	2	5	5	100
*57035	32.15	3	5	5	100
*57045	33.15	4	5	5	100
*57055	34.15	5	5	5	100
*57065	35.15	6	5	5	100
*57006	30.30	0	6	5	100
*57016	32.30	1	6	5	100
*57026	33.30	2	6	5	100
*57036	34.30	3	6	5	100
*57046	35.30	4	6	5	100
*57007	33.45	0	7	5	100
*57017	34.45	1	7	5	100
*57027	35.45	2	7	5	100
*57008	35.60	0	8	5	100

4-Wire 3-Phase S/N 115-230 Volts A.C.



56090	\$29.00	9	0	5	70
56100	30.00	10	0	5	70
56120	32.00	12	0	5	70
56140	35.00	14	0	5	70
56160	37.00	16	0	5	70

*Where more than 2 double poles in box 3 devices or more than 4 double poles in box 5 devices are shown, this is accomplished by use of handle bails, coupling outside single poles.

Square D Multi-Breaker Type M Service and Load Centers

For Use on A.C. Systems Only
 Types M0 and M1: 2-Pole Breakers—Separate Trip
 Type M2 Breakers—Common Trip

Schedule B1

MAINS. Insulated (Groundable) Solid Neutral—Underwriters' Approved for Use As a Load Center beyond the Service Equipment or As Service Equipment Where Required by Local Rules.
 No Neutral—Underwriters' Approved as Enclosed Circuit Breaker but Suitable for Use As Service Equipment.
BRANCHES. Lighting Circuits—2-Wire S/N 115 Volts A.C. Single Pole Breakers and Neutral.
 Range, Water Heater and Subfeed Circuits—3-Wire S/N 115/230 Volts A.C. Double Pole Breakers and Neutral.

Specify branch circuit ratings and type of mounting.
 For flush devices, add F to number. For surface devices, add S to number.

2-Wire S/N 115 Volts A.C.

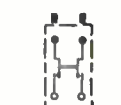
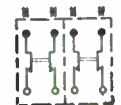
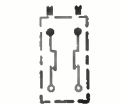
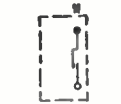


No. 111611S

Type Breaker
 M0

Frame Size No.	No. of MAIN or BRANCH CIRCUITS			Solid Mains Rating Amps. (Max.)		Insulated (Groundable) Solid Neutral			No Neutral		
	1-Pole Breakers	2-Pole Breakers	3-Pole Breakers	No.	Each	Box No.	No.	Each	Box No.		
25A	1-15A	0	0	*35	131110	\$2.15	13				
	1-20A	0	0	*35	131120	2.15	13				
	1-25A	0	0	*35	131130	2.15	13				
	2-15A	0	0	*35	131711	2.80	13				
	2-20A	0	0	*35	131722	2.80	13				
	2-25A	0	0	*35	131733	2.80	13				
	1-15A	1-20A	0	0	*35	131712	2.80	13			
	1-15A	0	0	50	16501	5.00	23				
	1-20A	0	0	50	16502	5.00	23				
	1-25A	0	0	50	16503	5.00	23				
50A	1-35A	0	0	50	16504	5.00	23				
	1-50A	0	0	50	16505	5.00	23				
	2-15A	0	0	70	16611	6.00	23				
	2-20A	0	0	70	16622	6.00	23				
	2-25A	0	0	70	16633	6.00	23				
	2-35A	0	0	70	16644	6.00	23				
	2-50A	0	0	70	16655	6.00	23				
	1-15A	1-20A	0	0	70	16612	6.00	23			

3-Wire S/N 115/230 Volts A.C.



M0

†M1

†M2

M1

M2

25A	0	1-15A	0	*35	131611	\$2.80	13	111611	\$2.40	11
	0	1-20A	0	*35	131622	2.80	13	111622	2.40	11
	0	1-25A	0	*35	131633	2.80	13	111633	2.40	11
	2-15A	0	0	*35	131711	2.80	13			
	2-20A	0	0	*35	131722	2.80	13			
	2-25A	0	0	*35	131733	2.80	13			
	1-15A	1-20A	0	*35	131712	2.80	13			
	0	1-10A	0	50	16766	6.30	23	16966	5.50	21
	0	1-15A	0	50	16711	6.30	23	16911	5.50	21
	0	1-20A	0	50	16722	6.30	23	16922	5.50	21
50A	0	1-25A	0	50	16733	6.30	23	16933	5.50	21
	0	1-35A	0	50	16744	6.30	23	16944	5.50	21
	0	1-50A	0	50	16755	6.30	23	16955	5.50	21
	2-15A	0	0	70	16611	6.00	23			
	2-20A	0	0	70	16622	6.00	23			
	2-25A	0	0	70	16633	6.00	23			
	2-35A	0	0	70	16644	6.00	23			
	2-50A	0	0	70	16655	6.00	23			
	1-15A	1-20A	0	70	16612	6.00	23			
	3	0	0	70	35530	8.50	3			
100A	4	0	0	70	35540	9.50	3			
	1	1	0	70	35511	8.80	3			
	2	1	0	70	35521	9.80	3			
	0	2	0	70	35502	10.10	3			
	5	0	0	3-50	95550	14.25	9			
	6	0	0	3-50	95560	15.25	9			
	3	1	0	3-50	95531	14.55	9			
	4	1	0	3-50	95541	15.55	9			
	1	2	0	3-50	95512	14.85	9			
	2	2	0	3-50	95522	15.85	9			
50A	0	3	0	3-50	95503	16.15	9			
	0	4	0	225	79504	42.90	7			
	0	5	0	225	79505	46.45	7			
	0	6	0	225	79506	50.00	7			
	0	1-50A	0	100	333250	16.50	33	313250	15.00	31
	0	1-70A	0	100	333270	16.50	33	313270	15.00	31
	0	1-90A	0	100	333290	16.50	33	313290	15.00	31
	0	1-100A	0	100	333216	16.50	33	313216	15.00	31

4 Wire 3-Phase S/N 120/208 Volts A.C.

M1

M2

50A	0	0	1-15A	50	282315	\$13.00	28			
	0	0	1-20A	50	282320	13.00	28			
	0	0	1-25A	50	282325	13.00	28			
	0	0	1-35A	50	282335	19.00	28			
100A	0	0	1-50A	50	282350	19.00	28			
	0	0	1-50A	100	333350	30.00	33			
	0	0	1-70A	100	333370	30.00	33			
	0	0	1-90A	100	333390	30.00	33			
0	0	1-100A	100	333316	30.00	33				

*No. 8 wire terminals.
 †Where ampere ratings are not shown on M1-50A frame breakers, any capacity from 15 to 50 amperes can be furnished.

‡Prices shown are for surface mounting. For flush mounting add \$2.00 on Form M2.

Square D Multi-Breaker Lighting Panelboards—3 Wire Mains

Schedule B2

Type NM1B-3

MAINS. 3-Wire S/N 115/230 Volts A.C. Only.
BRANCHES. 2-Wire 115-Volt S/N 15-Ampere Single Pole Breakers—Form MB.
CABINET. Single Door; 15 Inches Wide and 4½ Inches Deep. Finish: Front, Academy Brown; Box, Galvanized Steel.



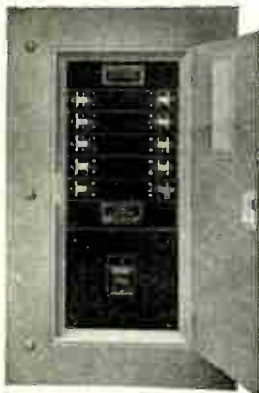
Type NM1B

No. of Branches	Main Amperes	Mains, Lugs Only			Mains, Circuit Breaker—2-Pole		
		No.	Complete Each	*Box No.	No.	Complete Each	*Box No.
4	50	NM1B04-3L	\$38.00	MB018	NM1B04-3AB	\$50.00	MB021
6	50	NM1B06-3L	42.00	MB021	NM1B06-3AB	54.00	MB024
8	50	NM1B08-3L	48.00	MB021	NM1B08-3AB	60.00	MB024
10	50	NM1B10-3L	54.00	MB024	NM1B10-3AB	66.00	MB029
12	100	NM1B12-3L	62.00	MB024	NM1B12-3AB	97.00	MB029
14	100	NM1B14-3L	68.00	MB024	NM1B14-3AB	103.00	MB032
16	100	NM1B16-3L	74.00	MB024	NM1B16-3AB	109.00	MB032
18	100	NM1B18-3L	80.00	MB029	NM1B18-3AB	115.00	MB035
20	100	NM1B20-3L	84.00	MB029	NM1B20-3AB	119.00	MB035
22	100	NM1B22-3L	90.00	MB029	NM1B22-3AB	125.00	MB038
24	100	NM1B24-3L	94.00	MB029	NM1B24-3AB	129.00	MB038
26	100	NM1B26-3L	100.00	MB032	NM1B26-3AB	135.00	MB040
28	100	NM1B28-3L	104.00	MB032	NM1B28-3AB	139.00	MB040
30	100	NM1B30-3L	110.00	MB035	NM1B30-3AB	145.00	MB043
32	100	NM1B32-3L	114.00	MB035	NM1B32-3AB	149.00	MB043
34	200	NM1B34-3L	136.00	MB038	NM1B34-3AB	232.00	MB042
36	200	NM1B36-3L	140.00	MB038	NM1B36-3AB	236.00	MB052
38	200	NM1B38-3L	146.00	MB040	NM1B38-3AB	242.00	MB055
40	200	NM1B40-3L	150.00	MB040	NM1B40-3AB	246.00	MB055
42	200	NM1B42-3L	156.00	MB040	NM1B42-3AB	252.00	MB055

Type NM1B-3 Panels may contain a maximum of 18 double pole circuits. No. NM1B Panel may have more than 4 poles of 35 or 50-ampere capacity (a maximum of 2 double poles or 4 single poles of 35 or 50 amperes). For panelboards having more than 35 or 50-ampere poles, refer to Type NMM-3 Panels listed below.

Type NMM-3

MAINS. 3-Wire S/N 115/230 Volts A.C. Only.
BRANCHES. 2-Wire 115-Volt S/N 15-Ampere Single Pole Breakers—Form M1.
CABINET. Single Door; 20 Inches Wide and 5¼ Inches Deep. Finish: Front, Academy Brown; Box, Galvanized Steel.



Types NMM and NM2M

No. of Branches	Main Amperes	Mains, Lugs Only			Mains, Circuit Breaker—2-Pole		
		No.	Complete Each	*Box No.	No.	Complete Each	*Box No.
4	50	NMM04-3L	\$44.00	MH17	NMM04-3AB	\$56.00	MH23
6	50	NMM06-3L	51.00	MH17	NMM06-3AB	63.00	MH23
8	50	NMM08-3L	58.00	MH17	NMM08-3AB	70.00	MH23
10	50	NMM10-3L	65.00	MH20	NMM10-3AB	77.00	MH23
12	100	NMM12-3L	72.00	MH20	NMM12-3AB	107.00	MH26
14	100	NMM14-3L	73.00	MH23	NMM14-3AB	114.00	MH29
16	100	NMM16-3L	86.00	MH23	NMM16-3AB	121.00	MH29
18	100	NMM18-3L	93.00	MH23	NMM18-3AB	128.00	MH29
20	100	NMM20-3L	100.00	MH23	NMM20-3AB	135.00	MH29
22	100	NMM22-3L	107.00	MH26	NMM22-3AB	142.00	MH32
24	100	NMM24-3L	114.00	MH26	NMM24-3AB	149.00	MH32
26	100	NMM26-3L	121.00	MH29	NMM26-3AB	156.00	MH35
28	100	NMM28-3L	128.00	MH29	NMM28-3AB	163.00	MH35
30	100	NMM30-3L	135.00	MH29	NMM30-3AB	170.00	MH35
32	100	NMM32-3L	142.00	MH29	NMM32-3AB	177.00	MH35
34	200	NMM34-3L	149.00	MH32	NMM34-3AB	245.00	MH47
36	200	NMM36-3L	156.00	MH32	NMM36-3AB	252.00	MH47
38	200	NMM38-3L	163.00	MH35	NMM38-3AB	259.00	MH50
40	200	NMM40-3L	170.00	MH35	NMM40-3AB	266.00	MH50
42	200	NMM42-3L	177.00	MH35	NMM42-3AB	273.00	MH53

Type NMM-3 Panels may contain all 1-pole circuits, all 2-pole circuits (not exceeding 20 per panel) or any combination of 1 and 2-pole circuits (not exceeding 42 poles per panel).

Type NM2M-3

MAINS. Lugs Only, Single Phase, 3-Wire Ungrounded Neutral 115/230 Volts A.C. Only (For Unidentified Wiring).
BRANCHES. 2-Wire 115-Volt with 15-Ampere 2-Pole Circuit Breakers—Form M1.
CABINET. Single Door; 20 Inches Wide and 5¼ Inches Deep. Finish: Front, Academy Brown; Box, Galvanized Steel.

No. of Branches	Main Amperes	Mains, Lugs Only			Mains, Circuit Breaker—3-Pole		
		No.	Complete Each	*Box No.	No.	Complete Each	*Box No.
4	50	NM2M04-3L	\$62.00	MH17	NM2M04-3AB	\$80.00	MH20
6	50	NM2M06-3L	78.00	MH17	NM2M06-3AB	96.00	MH20
8	50	NM2M08-3L	94.00	MH20	NM2M08-3AB	112.00	MH23
10	50	NM2M10-3L	110.00	MH23	NM2M10-3AB	128.00	MH26
12	100	NM2M12-3L	126.00	MH23	NM2M12-3AB	168.00	MH29
14	100	NM2M14-3L	142.00	MH26	NM2M14-3AB	184.00	MH32
16	100	NM2M16-3L	158.00	MH29	NM2M16-3AB	200.00	MH32
18	100	NM2M18-3L	174.00	MH29	NM2M18-3AB	216.00	MH35
20	100	NM2M20-3L	190.00	MH32	NM2M20-3AB	232.00	MH38

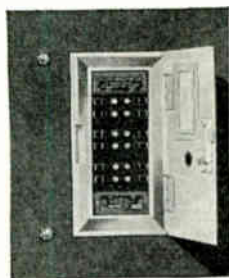
*Last two figures of box number indicate box height.

See the Following Page for General Notes

Square D Multi-Breaker Lighting Panelboards—4 Wire Mains

Schedule B2

MAIN. 3-Phase, 4-Wire S/N 115/230 Volts A.C. Only. For Use on 120/208 Volts 3Ø 4-Wire Star Connected System.
BRANCHES. 2-Wire 115-Volt S/N 15-Ampere Single Pole Breakers—Form MB.
CABINET. Single Door; 15 Inches Wide and 4½ Inches Deep. Finish: Front, Academy Brown; Box, Galvanized Steel.

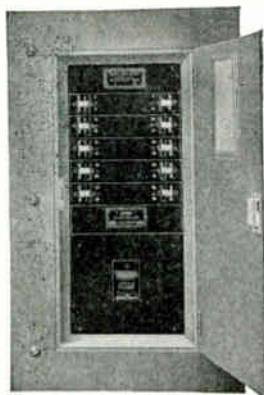


Type NM1B

No. of Main Branches	Main Amperes	Mains, Lugs Only			Mains, Circuit Breaker—3-Pole		
		No.	Complete Each	*Box No.	No.	Complete Each	*Box No.
6	50	NM1B06-4L	\$46.00	MB021	NM1B06-4AB	\$64.00	MB024
8	50	NM1B08-4L	52.00	MB021	NM1B08-4AB	70.00	MB024
10	50	NM1B10-4L	58.00	MB024	NM1B10-4AB	76.00	MB029
12	50	NM1B12-4L	66.00	MB024	NM1B12-4AB	84.00	MB029
14	50	NM1B14-4L	72.00	MB024	NM1B14-4AB	90.00	MB032
16	100	NM1B16-4L	78.00	MB024	NM1B16-4AB	128.00	MB032
18	100	NM1B18-4L	84.00	MB029	NM1B18-4AB	126.00	MB035
20	100	NM1B20-4L	88.00	MB029	NM1B20-4AB	130.00	MB035
22	100	NM1B22-4L	94.00	MB029	NM1B22-4AB	136.00	MB038
24	100	NM1B24-4L	100.00	MB029	NM1B24-4AB	142.00	MB038
26	100	NM1B26-4L	106.00	MB032	NM1B26-4AB	148.00	MB040
28	100	NM1B28-4L	110.00	MB035	NM1B28-4AB	152.00	MB040
30	100	NM1B30-4L	116.00	MB038	NM1B30-4AB	158.00	MB043
32	100	NM1B32-4L	120.00	MB038	NM1B32-4AB	162.00	MB043
34	100	NM1B34-4L	140.00	MB038	NM1B34-4AB	182.00	MB043
36	100	NM1B36-4L	146.00	MB038	NM1B36-4AB	188.00	MB043
38	100	NM1B38-4L	152.00	MB040	NM1B38-4AB	194.00	MB046
40	100	NM1B40-4L	156.00	MB040	NM1B40-4AB	198.00	MB046
42	100	NM1B42-4L	160.00	MB040	NM1B42-4AB	202.00	MB046

Type NM1B-4 Panels may contain a maximum of 18 double pole circuits. No NM1B Panel may have more than 4 poles of 35 or 50-ampere capacity (a maximum of 2 double poles or 4 single poles of 35 or 50 amperes). For panelboards having more 35 or 50-ampere poles, refer to Type NMM-4 Panels listed below.

MAIN. 3-Phase, 4-Wire S/N 115/230 Volts A.C. Only. For Use on 120/208 Volts 3Ø 4-Wire Star Connected System.
BRANCHES. 2-Wire 115-Volt S/N 15-Ampere Single Pole Breakers—Form M1.
CABINET. Single Door; 20 Inches Wide and 6¾ Inches Deep. Finish: Front, Academy Brown; Box, Galvanized Steel.



Type NMM

No. of Main Branches	Main Amperes	Mains, Lugs Only			Mains, Circuit Breaker—3-Pole		
		No.	Complete Each	*Box No.	No.	Complete Each	*Box No.
6	50	NMM06-4L	\$51.00	MH17	NMM06-4AB	\$69.00	MH23
8	50	NMM08-4L	58.00	MH17	NMM08-4AB	76.00	MH23
10	50	NMM10-4L	65.00	MH20	NMM10-4AB	83.00	MH23
12	50	NMM12-4L	72.00	MH20	NMM12-4AB	90.00	MH23
14	50	NMM14-4L	79.00	MH23	NMM14-4AB	97.00	MH26
16	100	NMM16-4L	86.00	MH23	NMM16-4AB	128.00	MH29
18	100	NMM18-4L	93.00	MH23	NMM18-4AB	135.00	MH29
20	100	NMM20-4L	100.00	MH23	NMM20-4AB	142.00	MH29
22	100	NMM22-4L	107.00	MH26	NMM22-4AB	149.00	MH32
24	100	NMM24-4L	114.00	MH26	NMM24-4AB	156.00	MH32
26	100	NMM26-4L	121.00	MH29	NMM26-4AB	163.00	MH35
28	100	NMM28-4L	128.00	MH29	NMM28-4AB	170.00	MH35
30	100	NMM30-4L	135.00	MH29	NMM30-4AB	177.00	MH35
32	100	NMM32-4L	142.00	MH29	NMM32-4AB	184.00	MH35
34	100	NMM34-4L	149.00	MH32	NMM34-4AB	191.00	MH38
36	100	NMM36-4L	156.00	MH32	NMM36-4AB	198.00	MH38
38	100	NMM38-4L	163.00	MH35	NMM38-4AB	205.00	MH41
40	100	NMM40-4L	170.00	MH35	NMM40-4AB	212.00	MH41
42	100	NMM42-4L	177.00	MH35	NMM42-4AB	219.00	MH41

Type NMM-4 Panels may contain all 1-pole circuits, all 2-pole circuits (not exceeding 20 per panel) or any combination of 1 and 2-pole circuits (not exceeding 42 poles per panel).

*Last two figures of box number indicate box height.

General Notes

Listings are based on 15-ampere breakers, which will be furnished unless otherwise specified. The 20, 25, 35 or 50-ampere breakers will be furnished at no extra charge if specified, except that increased mains may be required; see additions in table at right.

For panels having combination of 1 and 2-pole branches, all fed from same bus and under one door, determine total number of poles in branches. With this equivalent number of 1-pole circuits, obtain price of panel from listings given, and add \$1.00 for each 2-pole circuit.

All 2-pole branch circuit breakers have separate trip.

Standard knockouts are furnished in top and bottom ends of all boxes.

When space only for further branches is required, figure panels on basis of total number of branches and deduct \$1.00 for each breaker pole omitted.

When any panel has both 1 and 2-pole branches, or two or more capacities of breakers, the Square D Company reserves the right to determine the relative positions of the branches on the panels.

When ordering, specify number, number of 1-pole and 1 or 2-pole branch circuits, ampere rating of each branch, ampere rating of mains, flush or surface mounting, and price.

• Additions for Increased Mains, with or without Neutral Bar 2 and 3-Pole Main Breakers Have Common Trip

Main Amperes	2 Ungrounded Poles		3 Ungrounded Poles	
	Lugs Only Each	Circuit Breaker Each	Lugs Only Each	Circuit Breaker Each
50 to 100	\$4.00	\$23.00	\$5.00	\$24.00
50 to 200	6.00	84.00	8.00	101.00
100 to 200	5.00	61.00	7.00	77.00

†For use on panelboards with 3 wire mains only.

Square D Multi-Breaker Lighting Panelboards—3 or 4 Wire Mains

Schedule B2

Narrow Column Types NMM-3X and NMM-3XX—3 Wire Mains

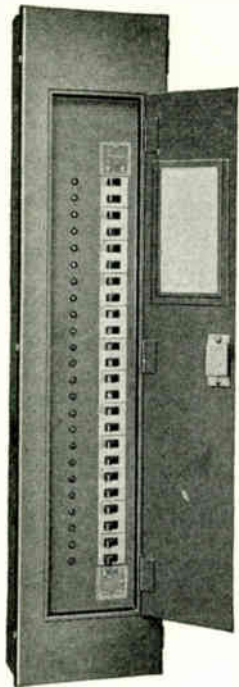
MAIN: Lugs Only, Single Phase, 3-Wire S/N 115/230 Volts A.C. Only.
 BRANCHES: 2-Wire 115-Volt S/N 15-Ampere Single Pole Breakers—Form M1 (Single Row).
 CABINET: Single Door in Hinged Front. Finish: Academy Brown.
 Type NMM-3X: 8 3/4 Inches Wide and 4 3/4 Inches Deep (Outside Dimensions).
 Type NMM-3XX: 7 1/4 Inches Wide and 4 3/4 Inches Deep (Outside Dimensions).

No. of Main Branches per row	Mains, Lugs Only						Mains, Circuit Breaker—2-Pole					
	Type NMM-3X			Type NMM-3XX			Type NMM-3X			Type NMM-3XX		
	No.	Box Height Inches	Each	No.	Box Height Inches	Each	No.	Box Height Inches	Each	No.	Box Height Inches	Each
4	50	NMM04-3LX	22	NMM04-3LXX	22	\$44.00	NMM04-3ABX	22	NMM04-3ABXX	22	\$56.00	
6	50	NMM06-3LX	22	NMM06-3LXX	22	51.00	NMM06-3ABX	28	NMM06-3ABXX	28	63.00	
8	50	NMM08-3LX	22	NMM08-3LXX	22	58.00	NMM08-3ABX	28	NMM08-3ABXX	28	70.00	
10	50	NMM10-3LX	28	NMM10-3LXX	28	65.00	NMM10-3ABX	28	NMM10-3ABXX	28	77.00	
12	100	NMM12-3LX	28	NMM12-3LXX	28	72.00	NMM12-3ABX	34	NMM12-3ABXX	34	107.00	
14	100	NMM14-3LX	28	NMM14-3LXX	28	79.00	NMM14-3ABX	34	NMM14-3ABXX	34	114.00	
16	100	NMM16-3LX	34	NMM16-3LXX	34	86.00	NMM16-3ABX	34	NMM16-3ABXX	34	121.00	
18	100	NMM18-3LX	34	NMM18-3LXX	34	93.00	NMM18-3ABX	40	NMM18-3ABXX	40	128.00	
20	100	NMM20-3LX	34	NMM20-3LXX	34	100.00	NMM20-3ABX	40	NMM20-3ABXX	40	135.00	
22	100	NMM22-3LX	40	NMM22-3LXX	40	107.00	NMM22-3ABX	40	NMM22-3ABXX	40	142.00	
24	100	NMM24-3LX	40	NMM24-3LXX	40	114.00	NMM24-3ABX	46	NMM24-3ABXX	46	149.00	
26	100	NMM26-3LX	40	NMM26-3LXX	40	121.00	NMM26-3ABX	46	NMM26-3ABXX	46	156.00	
28	100	NMM28-3LX	46	NMM28-3LXX	46	128.00	NMM28-3ABX	46	NMM28-3ABXX	46	163.00	
30	100	NMM30-3LX	46	NMM30-3LXX	46	135.00	NMM30-3ABX	52	NMM30-3ABXX	52	170.00	
32	100	NMM32-3LX	52	NMM32-3LXX	52	142.00	NMM32-3ABX	58	NMM32-3ABXX	58	177.00	
34	200	NMM34-3LX	52	NMM34-3LXX	52	149.00						
36	200	NMM36-3LX	58	NMM36-3LXX	58	156.00						
38	200	NMM38-3LX	58	NMM38-3LXX	58	163.00						
40	200	NMM40-3LX	58	NMM40-3LXX	58	170.00						

Narrow Column Types NMM-4X and NMM-4XX—4 Wire Mains

MAIN: Lugs Only, Three Phase, 4-Wire S/N 115/230 Volts A.C. Only. For Use on 120/208 Volts 3Ø 4-Wire Star Connected System.
 BRANCHES: 2-Wire 115-Volt S/N 15-Ampere Single Pole Breakers—Form M1 (Single Row).
 CABINET: Single Door in Hinged Front. Finish: Academy Brown.
 Type NMM-4X: 8 3/4 Inches Wide and 4 3/4 Inches Deep (Outside Dimensions).
 Type NMM-4XX: 7 1/4 Inches Wide and 4 3/4 Inches Deep (Outside Dimensions).

No. of Main Branches per row	Mains, Lugs Only						Mains, Circuit Breaker—3-Pole					
	Type NMM-4X			Type NMM-4XX			Type NMM-4X			Type NMM-4XX		
	No.	Box Height Inches	Each	No.	Box Height Inches	Each	No.	Box Height Inches	Each	No.	Box Height Inches	Each
6	50	NMM06-4LX	22	NMM06-4LXX	22	\$51.00	NMM06-4ABX	28	NMM06-4ABXX	28	\$69.00	
8	50	NMM08-4LX	22	NMM08-4LXX	22	58.00	NMM08-4ABX	28	NMM08-4ABXX	28	76.00	
10	50	NMM10-4LX	28	NMM10-4LXX	28	65.00	NMM10-4ABX	28	NMM10-4ABXX	34	83.00	
12	50	NMM12-4LX	28	NMM12-4LXX	28	72.00	NMM12-4ABX	34	NMM12-4ABXX	34	90.00	
14	50	NMM14-4LX	28	NMM14-4LXX	28	79.00	NMM14-4ABX	34	NMM14-4ABXX	34	97.00	
16	100	NMM16-4LX	34	NMM16-4LXX	34	86.00	NMM16-4ABX	34	NMM16-4ABXX	46	128.00	
18	100	NMM18-4LX	34	NMM18-4LXX	34	93.00	NMM18-4ABX	40	NMM18-4ABXX	46	135.00	
20	100	NMM20-4LX	34	NMM20-4LXX	34	100.00	NMM20-4ABX	40	NMM20-4ABXX	46	142.00	
22	100	NMM22-4LX	40	NMM22-4LXX	40	107.00	NMM22-4ABX	40	NMM22-4ABXX	52	149.00	
24	100	NMM24-4LX	40	NMM24-4LXX	40	114.00	NMM24-4ABX	46	NMM24-4ABXX	52	156.00	
26	100	NMM26-4LX	40	NMM26-4LXX	40	121.00	NMM26-4ABX	46	NMM26-4ABXX	52	163.00	
28	100	NMM28-4LX	46	NMM28-4LXX	46	128.00	NMM28-4ABX	46	NMM28-4ABXX	58	170.00	
30	100	NMM30-4LX	46	NMM30-4LXX	46	135.00	NMM30-4ABX	52	NMM30-4ABXX	58	177.00	
32	100	NMM32-4LX	52	NMM32-4LXX	52	142.00	NMM32-4ABX	58	NMM32-4ABXX	64	184.00	
34	100	NMM34-4LX	52	NMM34-4LXX	52	149.00	NMM34-4ABX	58	NMM34-4ABXX	64	191.00	
36	100	NMM36-4LX	58	NMM36-4LXX	58	156.00	NMM36-4ABX	58	NMM36-4ABXX	70	198.00	
38	100	NMM38-4LX	58	NMM38-4LXX	58	163.00						
40	100	NMM40-4LX	58	NMM40-4LXX	58	170.00						



Type LX Single Row Narrow Multi-Breaker Lighting Panelboard

Prices are for panels either 8 3/4 or 7 1/4 inches wide. Wiring gutters are at top, bottom and left side. Top gutter varies from 6 to 10 inches, depending on neutral bar which is placed there since branch feeders usually come into that end of box. Bottom gutter is 4 inches high. Side gutter is 3 1/4 inches wide in the 8 3/4-inch wide cabinet, and 1 3/4 inches wide in the 7 1/4-inch wide cabinet.

It is recommended that panels with 16 or more poles have cabinets 6 1/2 inches deep instead of 4 3/4 inches, so that additional wiring space in back of interior may be had. When cabinets 6 1/2 inches deep are desired, increase above prices by 5 per cent (before adding for double pole branches when required).

These panels can be furnished with cable troughs and pull boxes for H-beam mounting. Prices on request.

Listings are based on 15-ampere breakers, which will be furnished unless otherwise specified. The 20, 25, 35 or 50-ampere breakers will be furnished at no extra charge if specified, except that increased mains may be required; see additions in table at right.

For panels having combination of 1 and 2-pole branches, all fed from same bus and under one door, determine total number of poles in branches. With this equivalent number of 1-pole circuits, obtain price of panel from tables shown, and add \$1.00 for each 2-pole circuit.

All 2-pole branch circuit breakers have separate trip.

Standard knockouts are furnished in top and bottom ends of all boxes, except the boxes for Types NMM-3XX and NMM-4XX which are furnished with blank top and bottom ends as standard.

When space only for further branches is required, figure panels on basis of total number of branches and deduct \$1.00 for each breaker pole omitted.

When any panel has both 1 and 2-pole branches, or two or more capacities of breakers, the Square D Company reserves the right to determine the relative positions of the branches on the panels.

When ordering, specify number, number of 1-pole and 1 or 2-pole branch circuits, ampere rating of each branch, ampere rating of mains, flush or surface mounting, and price.

Additions for Increased Mains, with or without Neutral Bar
 2 and 3-Pole Main Breakers Have Common Trip

Main Amperes	2 Ungrounded Poles		3 Ungrounded Poles	
	Lugs Only Each	Circuit Breaker Each	Lugs Only Each	Circuit Breaker Each
50 to 100	\$23.00	\$19.00	\$5.00	\$24.00
50 to 200	84.00	90.00	8.00	*
100 to 200	61.00	71.00	7.00	*

†For use on panelboards with 3 wire mains only.

*Main breakers are limited to 100 amperes.

Square D Standard Fuse Lighting Panelboards

Schedule G

With 30-Ampere Fuse Only Branches

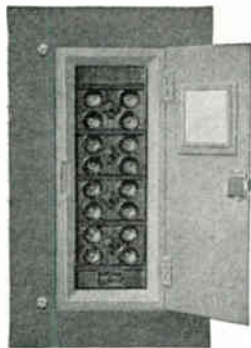
Types NRP-3G (Plug) and NRC-3G (Cartridge)

MAINS. 3-Wire, 125-250 Volts.

CABINET. Single Door; 12 Inches Wide and 4 Inches Deep.

Finish: Front, Academy Brown; Box, Galvanized Steel.

Mains: Lugs Only



No. NRP3G16

No. of Branches	Main Amps.	With Plug Fuse, No.	With Cartridge Fuse, No.	Each	*Box No.
4	30	NRP3G04	NRC3G04	\$16.00	LP12
8	60	NRP3G08	NRC3G08	20.00	LP15
12	60	NRP3G12	NRC3G12	24.00	LP18
16	100	NRP3G16	NRC3G16	30.00	LP24
20	100	NRP3G20	NRC3G20	34.00	LP27
24	100	NRP3G24	NRC3G24	42.00	LP30
28	100	NRP3G28	NRC3G28	48.00	LP33
32	100	NRP3G32	NRC3G32	54.00	LP36

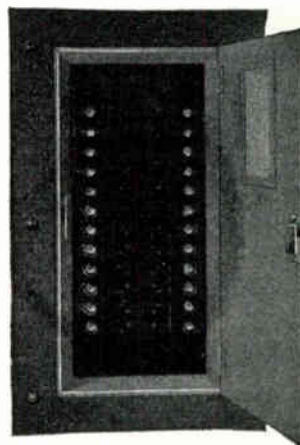
With Heavy Duty 30-Ampere One Pole Tumbler Switch Branches

Types NRTP-3G (Plug) and NRTC-3G (Cartridge)

MAINS. 3-Wire, 125-250 Volts.

CABINET. Single Door; 12 Inches Wide and 4 Inches Deep.

Finish: Front, Academy Brown; Box, Galvanized Steel.



No. NT1P24-3L

No. of Branches	Main Amps.	With Plug Fuse, No.	With Cartridge Fuse, No.	Each	*Box No.
4	30	NRTP3G04	NRTC3G04	\$34.00	LP15
6	60	NRTP3G06	NRTC3G06	37.00	LP18
8	60	NRTP3G08	NRTC3G08	40.00	LP21
10	60	NRTP3G10	NRTC3G10	45.00	LP24
12	60	NRTP3G12	NRTC3G12	50.00	LP27

Types NT1P-3 (Plug) and NT1C-3 (Cartridge)

MAINS. 3-Wire, S/N 125-250 Volts.

CABINET. Single Door; 20 In. Wide and 5 1/4 In. Deep. Finish: Front, Academy Brown; Box, Galvanized Steel.

Mains: Lugs Only

Mains: Safety Fuse

Mains: Fusible Switch

No. of Bran-Main	With Plug Fuse, No.	With Cartridge Fuse, No.	Mains: Lugs Only		Mains: Safety Fuse		Mains: Fusible Switch						
			Each	*Box No.	With Plug Fuse, No.	With Cartridge Fuse, No.	Each	*Box No.	With Plug Fuse, No.	With Cartridge Fuse, No.	Each	*Box No.	
4	30	NT1P04 3L	NT1C04 3L	\$34	MH14	NT1P04 3F	NT1C04 3F	\$46	MH17	NT1P04 3FS	NT1C04 3FS	\$64	MH23
8	60	NT1P08 3L	NT1C08 3L	40	MH14	NT1P08 3F	NT1C08 3F	58	MH20	NT1P08 3FS	NT1C08 3FS	74	MH26
12	60	NT1P12 3L	NT1C12 3L	50	MH17	NT1P12 3F	NT1C12 3F	70	MH23	NT1P12 3FS	NT1C12 3FS	86	MH29
16	100	NT1P16 3L	NT1C16 3L	74	MH26	NT1P16 3F	NT1C16 3F	90	MH32	NT1P16 3FS	NT1C16 3FS	110	MH38
20	100	NT1P20 3L	NT1C20 3L	84	MH29	NT1P20 3F	NT1C20 3F	102	MH35	NT1P20 3FS	NT1C20 3FS	122	MH41
24	100	NT1P24 3L	NT1C24 3L	94	MH32	NT1P24 3F	NT1C24 3F	114	MH38	NT1P24 3FS	NT1C24 3FS	134	MH44
28	100	NT1P28 3L	NT1C28 3L	104	MH35	NT1P28 3F	NT1C28 3F	126	MH41	NT1P28 3FS	NT1C28 3FS	146	MH47
32	100	NT1P32 3L	NT1C32 3L	114	MH38	NT1P32 3F	NT1C32 3F	138	MH44	NT1P32 3FS	NT1C32 3FS	158	MH50
36	200	NT1P36 3L	NT1C36 3L	140	MH41	NT1P36 3F	NT1C36 3F	166	MH56	NT1P36 3FS	NT1C36 3FS	206	MH56
40	200	NT1P40 3L	NT1C40 3L	150	MH44	NT1P40 3F	NT1C40 3F	178	MH59	NT1P40 3FS	NT1C40 3FS	218	MH59

Types NT1P-4 (Plug) and NT1C-4 (Cartridge)

MAINS. 4-Wire, S/N 120-208 Volts.

CABINET. Single Door; 20 In. Wide and 5 1/4 In. Deep. Finish: Front, Academy Brown; Box, Galvanized Steel.

No. of Bran-Main	With Plug Fuse, No.	With Cartridge Fuse, No.	Mains: Lugs Only		Mains: Safety Fuse		Mains: Fusible Switch						
			Each	*Box No.	With Plug Fuse, No.	With Cartridge Fuse, No.	Each	*Box No.	With Plug Fuse, No.	With Cartridge Fuse, No.	Each	*Box No.	
8	60	NT1P08 4L	NT1C08 4L	\$52	MH14	NT1P08 4F	NT1C08 4F	\$66	MH20	NT1P08 4FS	NT1C08 4FS	\$88	MH26
12	60	NT1P12 4L	NT1C12 4L	62	MH17	NT1P12 4F	NT1C12 4F	78	MH23	NT1P12 4FS	NT1C12 4FS	100	MH29
16	60	NT1P16 4L	NT1C16 4L	78	MH26	NT1P16 4F	NT1C16 4F	96	MH32	NT1P16 4FS	NT1C16 4FS	122	MH38
20	60	NT1P20 4L	NT1C20 4L	88	MH29	NT1P20 4F	NT1C20 4F	108	MH35	NT1P20 4FS	NT1C20 4FS	136	MH41
24	60	NT1P24 4L	NT1C24 4L	100	MH32	NT1P24 4F	NT1C24 4F	120	MH38	NT1P24 4FS	NT1C24 4FS	148	MH44
28	100	NT1P28 4L	NT1C28 4L	110	MH35	NT1P28 4F	NT1C28 4F	132	MH41	NT1P28 4FS	NT1C28 4FS	162	MH47
32	100	NT1P32 4L	NT1C32 4L	120	MH38	NT1P32 4F	NT1C32 4F	148	MH44	NT1P32 4FS	NT1C32 4FS	176	MH50
36	100	NT1P36 4L	NT1C36 4L	146	MH41	NT1P36 4F	NT1C36 4F	170	MH47	NT1P36 4FS	NT1C36 4FS	222	MH53
40	100	NT1P40 4L	NT1C40 4L	156	MH44	NT1P40 4F	NT1C40 4F	182	MH50	NT1P40 4FS	NT1C40 4FS	234	MH56

Types NT1P-3D (Plug) and NT1C-3D (Cartridge)

MAINS. 3-Wire, S/N 125-250 Volts.

CABINET. Door-in-Door; 20 In. Wide and 5 1/4 In. Deep. Finish: Front, Academy Brown; Box, Galvanized Steel

No. of Bran-Main	With Plug Fuse, No.	With Cartridge Fuse, No.	Mains: Lugs Only		Mains: Safety Fuse		Mains: Fusible Switch						
			Each	*Box No.	With Plug Fuse, No.	With Cartridge Fuse, No.	Each	*Box No.	With Plug Fuse, No.	With Cartridge Fuse, No.	Each	*Box No.	
4	30	NT1P04 3LD	NT1C04 3LD	\$50	MH17	NT1P04 3FD	NT1C04 3FD	\$62	MH20	NT1P04 3FSD	NT1C04 3FSD	\$80	MH26
8	60	NT1P08 3LD	NT1C08 3LD	60	MH20	NT1P08 3FD	NT1C08 3FD	74	MH23	NT1P08 3FSD	NT1C08 3FSD	90	MH29
12	60	NT1P12 3LD	NT1C12 3LD	70	MH23	NT1P12 3FD	NT1C12 3FD	86	MH26	NT1P12 3FSD	NT1C12 3FSD	102	MH32
16	100	NT1P16 3LD	NT1C16 3LD	86	MH26	NT1P16 3FD	NT1C16 3FD	102	MH32	NT1P16 3FSD	NT1C16 3FSD	122	MH38
20	100	NT1P20 3LD	NT1C20 3LD	96	MH29	NT1P20 3FD	NT1C20 3FD	114	MH35	NT1P20 3FSD	NT1C20 3FSD	134	MH41
24	100	NT1P24 3LD	NT1C24 3LD	106	MH32	NT1P24 3FD	NT1C24 3FD	126	MH38	NT1P24 3FSD	NT1C24 3FSD	146	MH44
28	100	NT1P28 3LD	NT1C28 3LD	116	MH35	NT1P28 3FD	NT1C28 3FD	138	MH41	NT1P28 3FSD	NT1C28 3FSD	158	MH47
32	100	NT1P32 3LD	NT1C32 3LD	126	MH38	NT1P32 3FD	NT1C32 3FD	150	MH44	NT1P32 3FSD	NT1C32 3FSD	170	MH50
36	200	NT1P36 3LD	NT1C36 3LD	152	MH41	NT1P36 3FD	NT1C36 3FD	178	MH56	NT1P36 3FSD	NT1C36 3FSD	218	MH56
40	200	NT1P40 3LD	NT1C40 3LD	162	MH44	NT1P40 3FD	NT1C40 3FD	190	MH59	NT1P40 3FSD	NT1C40 3FSD	230	MH59

Types NT1P-4D (Plug) and NT1C-4D (Cartridge)

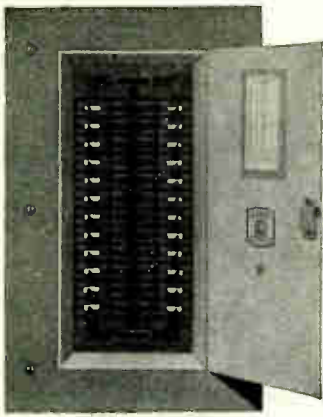
MAINS. 4-Wire, S/N 120-208 Volts.

CABINET. Door-in-Door; 20 In. Wide and 5 1/4 In. Deep. Finish: Front, Academy Brown; Box, Galvanized Steel

No. of Bran-Main	With Plug Fuse, No.	With Cartridge Fuse, No.	Mains: Lugs Only		Mains: Safety Fuse		Mains: Fusible Switch						
			Each	*Box No.	With Plug Fuse, No.	With Cartridge Fuse, No.	Each	*Box No.	With Plug Fuse, No.	With Cartridge Fuse, No.	Each	*Box No.	
8	60	NT1P08 4LD	NT1C08 4LD	\$64	MH20	NT1P08 4FD	NT1C08 4FD	\$78	MH23	NT1P08 4FSD	NT1C08 4FSD	\$100	MH29
12	60	NT1P12 4LD	NT1C12 4LD	74	MH23	NT1P12 4FD	NT1C12 4FD	90	MH26	NT1P12 4FSD	NT1C12 4FSD	112	MH32
16	60	NT1P16 4LD	NT1C16 4LD	90	MH26	NT1P16 4FD	NT1C16 4FD	108	MH32	NT1P16 4FSD	NT1C16 4FSD	134	MH38
20	60	NT1P20 4LD	NT1C20 4LD	100	MH29	NT1P20 4FD	NT1C20 4FD	120	MH35	NT1P20 4FSD	NT1C20 4FSD	148	MH41
24	60	NT1P24 4LD	NT1C24 4LD	112	MH32	NT1P24 4FD	NT1C24 4FD	132	MH38	NT1P24 4FSD	NT1C24 4FSD	160	MH44
28	100	NT1P28 4LD	NT1C28 4LD	122	MH35	NT1P28 4FD	NT1C28 4FD	144	MH41	NT1P28 4FSD	NT1C28 4FSD	174	MH47
32	100	NT1P32 4LD	NT1C32 4LD	132	MH38	NT1P32 4FD	NT1C32 4FD	160	MH44	NT1P32 4FSD	NT1C32 4FSD	188	MH50
36	100	NT1P36 4LD	NT1C36 4LD	154	MH41	NT1P36 4FD	NT1C36 4FD	180	MH47	NT1P36 4FSD	NT1C36 4FSD	234	MH53
40	100	NT1P40 4LD	NT1C40 4LD	164	MH44	NT1P40 4FD	NT1C40 4FD	194	MH50	NT1P40 4FSD	NT1C40 4FSD	246	MH56

*Last two figures of box number indicate box height.

When ordering, specify number, number of single and/or double pole branches, ampere rating of each branch, ampere rating of mains, flush or surface mounting and price.



**Square D
Circuit Breaker
Lighting
Panelboards**

Schedule G

Prices are based on 15-ampere breakers. The 10, 20 and 25-ampere breakers can be supplied at the same price. For 35 and 50-ampere breakers, add \$1.00 per single pole and \$2.00 per double pole. Add for increased mains, if required.

Type NA1B-3

MAINS. 125-250 Volts, 1ϕ 3-Wire S/N A.C. or D.C.
BRANCHES. 2-Wire 125-Volt 15-Ampere Single Pole Breaker—Form L.
FINISH. Front, Academy Brown; Box, Galvanized Steel.
With Cabinets 12 Inches Wide and 4 Inches Deep

Mains, Lugs Only				Mains, Circuit Breaker—2-Pole			
No. Main Br. Amps.	No.	Complete Each	*Box No.	No.	Complete Each	*Box No.	
4	50	NA1B04 3L050	\$52.00	LP15	NA1B04 3AB050	\$68.00	LP21
6	50	NA1B06 3L050	63.00	LP18	NA1B06 3AB050	79.00	LP24
8	50	NA1B08 3L050	74.00	LP21	NA1B08 3AB050	90.00	LP27
10	50	NA1B10 3L050	85.00	LP21	NA1B10 3AB050	101.00	LP27

With Cabinets 20 inches Wide and 5 3/4 Inches Deep

12	100	NA1B12 3L100	\$96.00	MH20	NA1B12 3AB100	\$134.00	MH29
14	100	NA1B14 3L100	107.00	MH20	NA1B14 3AB100	145.00	MH29
16	100	NA1B16 3L100	118.00	MH23	NA1B16 3AB100	156.00	MH32
18	100	NA1B18 3L100	129.00	MH23	NA1B18 3AB100	167.00	MH32
20	100	NA1B20 3L100	140.00	MH23	NA1B20 3AB100	178.00	MH32
22	100	NA1B22 3L100	151.00	MH26	NA1B22 3AB100	189.00	MH35
24	100	NA1B24 3L100	162.00	MH26	NA1B24 3AB100	200.00	MH35
26	100	NA1B26 3L100	173.00	MH26	NA1B26 3AB100	211.00	MH35
28	100	NA1B28 3L100	184.00	MH29	NA1B28 3AB100	222.00	MH38
30	100	NA1B30 3L100	195.00	MH29	NA1B30 3AB100	233.00	MH38
32	100	NA1B32 3L100	206.00	MH29	NA1B32 3AB100	244.00	MH38
34	200	NA1B34 3L200	217.00	MH32	NA1B34 3AB200	317.00	MH50
36	200	NA1B36 3L200	228.00	MH32	NA1B36 3AB200	328.00	MH50
38	200	NA1B38 3L200	239.00	MH32	NA1B38 3AB200	339.00	MH50
40	200	NA1B40 3L200	250.00	MH35	NA1B40 3AB200	350.00	MH53
42	200	NA1B42 3L200	261.00	MH35	NA1B42 3AB200	361.00	MH53

Type NA1B-4

MAINS. 120-208 Volts, 3ϕ 4-Wire S/N A.C.
BRANCHES. 2-Wire 125-Volt 15-Ampere Single Pole Breaker—Form L.
FINISH. Front, Academy Brown; Box, Galvanized Steel.
With Cabinets 12 Inches Wide and 4 Inches Deep

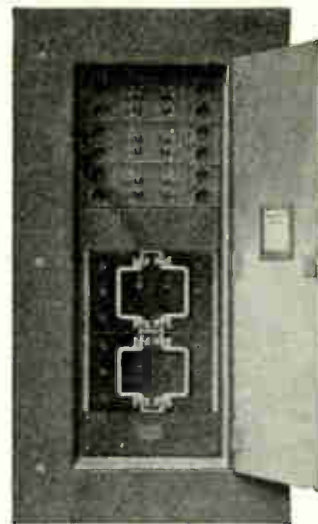
Mains, Lugs Only				Mains, Circuit Breaker—3-Pole			
No. Main Br. Amps.	No.	Complete Each	*Box No.	No.	Complete Each	*Box No.	
4	50	NA1B04 4L050	\$52.00	LP18	NA1B04 4AB050	\$75.00	LP24
6	50	NA1B06 4L050	63.00	LP21	NA1B06 4AB050	86.00	LP27
8	50	NA1B08 4L050	74.00	LP21	NA1B08 4AB050	97.00	LP27
10	50	NA1B10 4L050	85.00	LP24	NA1B10 4AB050	108.00	LP30
12	50	NA1B12 4L050	96.00	LP27	NA1B12 4AB050	119.00	LP33
14	50	NA1B14 4L050	107.00	LP27	NA1B14 4AB050	130.00	LP33

With Cabinets 20 Inches Wide and 5 3/4 Inches Deep

16	100	NA1B16 4L100	\$118.00	MH23	NA1B16 4AB100	\$168.00	MH32
18	100	NA1B18 4L100	129.00	MH23	NA1B18 4AB100	179.00	MH32
20	100	NA1B20 4L100	140.00	MH23	NA1B20 4AB100	190.00	MH32
22	100	NA1B22 4L100	151.00	MH26	NA1B22 4AB100	201.00	MH35
24	100	NA1B24 4L100	162.00	MH26	NA1B24 4AB100	212.00	MH35
26	100	NA1B26 4L100	173.00	MH26	NA1B26 4AB100	223.00	MH35
28	100	NA1B28 4L100	184.00	MH29	NA1B28 4AB100	234.00	MH38
30	100	NA1B30 4L100	195.00	MH29	NA1B30 4AB100	245.00	MH38
32	100	NA1B32 4L100	206.00	MH29	NA1B32 4AB100	256.00	MH38
34	100	NA1B34 4L100	217.00	MH32	NA1B34 4AB100	267.00	MH41
36	100	NA1B36 4L100	228.00	MH32	NA1B36 4AB100	278.00	MH41
38	100	NA1B38 4L100	239.00	MH32	NA1B38 4AB100	289.00	MH41
40	100	NA1B40 4L100	250.00	MH35	NA1B40 4AB100	300.00	MH44
42	100	NA1B42 4L100	261.00	MH35	NA1B42 4AB100	311.00	MH44

*Last two figures of box number indicate height.

Square D Saflex Distribution Panels



A Special Combination Lighting and Distribution Panelboard in a Box 20 Inches Wide

The Square D Saflex Distribution Panel was first designed to meet the rigid requirements of the industrial field, with the thought of providing a maximum degree of safety, convenience and dependability in a compact form to control electric service and feeders supplying current for power, heat and light. The Saflex fusible switch units used in these panels have proved, over a decade of actual use, to be highly desirable where trouble-proof service is essential. They insure undisturbed control of electric current where interruptions in electric service are very costly and therefore cannot be allowed.

The Saflex panelboard is made up of interchangeable switch units mounted upon steel channels within a steel cabinet with copper bus bars mounted in an isolated bus compartment in the rear of the switch units. All Saflex panels are listed and approved by Underwriters' Laboratories, Inc.

Saflex panels are used and highly recommended by many of the largest industries in the United States and Canada. They can also be found in many other parts of the world. They are ideally suited for industrials, schools, hospitals and other buildings where safety and dependability are of prime importance. They can be furnished for controlling any of the following services:

- 125, 250 or 575 volts, 3 phase, 3 wire, a.c.
- 120/208 volts, 3 phase, 4 wire, a.c.
- 115 or 230 volts, 1 phase, 3 wire, a.c.
- 125, 250 or 575 volts, 1 phase, 2 wire, a.c.
- 115 or 230 volts, 3 wire, d.c.
- 125, 250 or 600 volts, 2 wire, d.c.

Special Combination Lighting and Distribution Panelboards

Special combinations can be furnished in addition to the standard Saflex units. These may include double throw Saflex switch units, motor starters, meters, current transformers, etc. Prices and complete information upon request.



Bull Dog Rocker Type Lighting Panelboards

CABINET. X Boxes, 15½ Inches; Depth, 4½ Inches; 4-Inch Gutters. W Boxes: Width 20 Inches; Depth 5½ Inches; 4 Inch Gutters. Height in Inches Is Indicated by Numerals in Box Numbers.
Front, One Door Construction. Code Thickness Steel, Black Finish—Flush Spring Locks.

For inner doors, add extra list price shown below, and add suffix "D" to numbers, for example: NTPR316LD.

Flush fronts will be furnished unless surface type is specified on order.

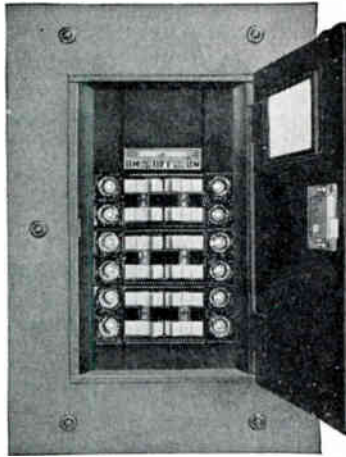
3/2 Wire, Solid Neutral

MAINS. 3-Wire, 125-250 Volts.

BRANCHES: 2-Wire, 125-Volt, 30-Ampere Single Pole Rocker Type Switch and Fuse.

Mains: Lugs Only (Solderless Wire Grips), Solid Neutral

No. of Circuits	Main Amp.	Box No.	With Plug Fuses		With Cartridge Fuses		Add for Inner Doors
			No.	Each	No.	Each	
4	30	X17	NTPR304L	\$24.00	NTPR304L	\$27.00	\$5.00
8	60	X17	NTPR308L	28.00	NTPR308L	31.00	5.00
12	60	X23	NTPR312L	35.00	NTPR312L	39.00	6.00
16	100	X23	NTPR316L	52.00	NTPR316L	57.00	6.00
20	100	X29	NTPR320L	59.00	NTPR320L	65.00	8.00
24	100	X29	NTPR324L	66.00	NTPR324L	73.00	8.00
28	100	X38	NTPR328L	73.00	NTPR328L	80.00	10.00
32	100	X38	NTPR332L	80.00	NTPR332L	88.00	10.00
36	200	X44	NTPR336L	98.00	NTPR336L	108.00	12.00
40	200	X44	NTPR340L	106.00	NTPR340L	117.00	12.00
Mains: SAFtoFUSE, Solid Neutral							
4	30	X23	NTPR304F	\$40.00	NTPR304F	\$43.00	\$6.00
8	60	X23	NTPR308F	46.00	NTPR308F	49.00	6.00
12	60	X29	NTPR312F	53.00	NTPR312F	57.00	8.00
16	100	X29	NTPR316F	72.00	NTPR316F	77.00	8.00
20	100	X38	NTPR320F	79.00	NTPR320F	85.00	10.00
24	100	X38	NTPR324F	86.00	NTPR324F	93.00	10.00
28	100	X44	NTPR328F	93.00	NTPR328F	100.00	12.00
32	100	X44	NTPR332F	100.00	NTPR332F	108.00	12.00
36	200	W56	NTPR336F	130.00	NTPR336F	140.00	24.00
40	200	W56	NTPR340F	138.00	NTPR340F	149.00	24.00
Mains: Fusible Switch, Solid Neutral							
4	30	X29	NTPR304SF	\$54.00	NTPR304SF	\$57.00	\$8.00
8	60	X38	NTPR308SF	60.00	NTPR308SF	63.00	8.00
12	60	X38	NTPR312SF	67.00	NTPR312SF	71.00	10.00
16	100	X38	NTPR316SF	88.00	NTPR316SF	93.00	10.00
20	100	X44	NTPR320SF	95.00	NTPR320SF	101.00	12.00
24	100	X44	NTPR324SF	102.00	NTPR324SF	109.00	12.00
28	100	W47	NTPR328SF	109.00	NTPR328SF	116.00	21.00
32	100	W47	NTPR332SF	116.00	NTPR332SF	124.00	21.00
36	200	W56	NTPR336SF	158.00	NTPR336SF	168.00	24.00
40	200	W56	NTPR340SF	166.00	NTPR340SF	177.00	24.00



No. NTPR312L Plug Fusible Type

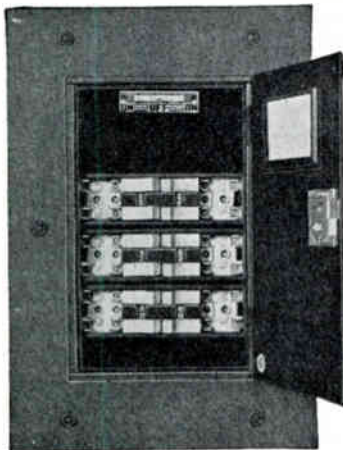
3-Phase, 4-Wire, Solid Neutral

MAINS. 3-Phase, 4-Wire, 120-208 Volts Solid Neutral.

BRANCHES. 2-Wire, 120-Volt, 30-Ampere Single Pole Rocker Type Switch and Fuse.

Mains: Lugs Only (Solderless Wire Grips), Solid Neutral

No. of Circuits	Main Amp.	Box No.	With Plug Fuses		With Cartridge Fuses		Add for Inner Doors
			No.	Each	No.	Each	
8	60	X17	NTPR408L	\$31.00	NTPR408L	\$35.00	\$5.00
12	60	X23	NTPR412L	39.00	NTPR412L	43.00	6.00
16	60	X23	NTPR416L	57.00	NTPR416L	63.00	6.00
20	60	X29	NTPR420L	65.00	NTPR420L	72.00	8.00
24	60	X29	NTPR424L	73.00	NTPR424L	80.00	8.00
28	100	X38	NTPR428L	80.00	NTPR428L	88.00	10.00
32	100	X38	NTPR432L	88.00	NTPR432L	97.00	10.00
36	100	X44	NTPR436L	108.00	NTPR436L	120.00	12.00
40	100	X44	NTPR440L	117.00	NTPR440L	128.00	12.00
Mains: SAFtoFUSE, Solid Neutral							
8	60	X23	NTPR408F	\$51.00	NTPR408F	\$55.00	\$6.00
12	60	X29	NTPR412F	59.00	NTPR412F	63.00	8.00
16	60	X29	NTPR416F	77.00	NTPR416F	83.00	8.00
20	60	X38	NTPR420F	85.00	NTPR420F	92.00	10.00
24	60	X38	NTPR424F	93.00	NTPR424F	100.00	10.00
28	100	X44	NTPR428F	102.00	NTPR428F	110.00	12.00
32	100	X44	NTPR432F	110.00	NTPR432F	119.00	12.00
36	100	W56	NTPR436F	130.00	NTPR436F	142.00	24.00
40	100	W56	NTPR440F	139.00	NTPR440F	150.00	24.00
Mains: Fusible Switch, Solid Neutral							
8	60	X38	NTPR408SF	\$79.00	NTPR408SF	\$83.00	\$10.00
12	60	X38	NTPR412SF	87.00	NTPR412SF	91.00	10.00
16	60	X38	NTPR416SF	105.00	NTPR416SF	111.00	10.00
20	60	X44	NTPR420SF	113.00	NTPR420SF	120.00	12.00
24	60	X44	NTPR424SF	121.00	NTPR424SF	128.00	12.00
28	100	W50	NTPR428SF	134.00	NTPR428SF	142.00	23.00
32	100	W50	NTPR432SF	142.00	NTPR432SF	151.00	23.00
36	100	W59	NTPR436SF	162.00	NTPR436SF	174.00	26.00
40	100	W59	NTPR440SF	171.00	NTPR440SF	182.00	26.00



No. NTPR312L Cartridge Fusible Type

Bull Dog Superba Lighting Panelboards

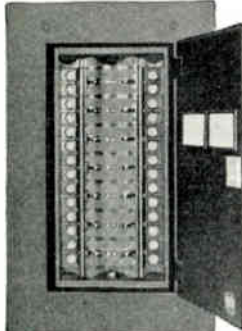
CABINET. Box, Code Gage Galvanized Steel—20 Inches Wide, 5½ Inches Deep, 4-Inch Gutters. Height in Inches is Indicated by Numerals in Box Numbers. Front, Code Thickness Steel, Black Finish—Flush Spring Locks.

Modified Type. Has the improved features of the Superba design, but is furnished without separate doors over fuses.
Standard Type. Equipped with separate doors over the fuses of each branch circuit, interlocked with the toggle switches for safety.

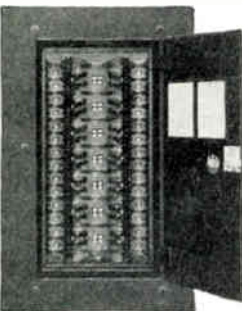
Numbers and prices include complete panel (less fuses) and cabinet.
 Flush fronts will be furnished unless surface type is specified on order.

Single Fusing—3/2 Wire, Solid Neutral

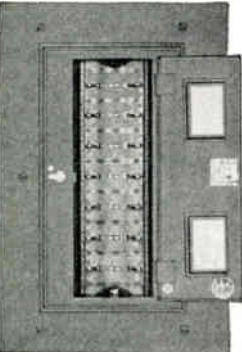
MAINS. 3-Wire, 125-250 Volts.
BRANCHES. 2-Wire, 125-Volt, 30-Ampere Single Pole Toggle Switch and Fuse.
 Mains: Lugs Only, Solid Neutral



Modified Superba, with Single Door Front



Standard Superba, with Doors over Fuses—Single Door Front



Modified Superba, with Door-in-Door Front

No. of Circuits	Main Amp.	Box No.	*Modified Superba Type One Door Construction			Standard Superba Type Individual Doors over Fuses		
			Plug Fuse, No.	Cartridge Fuse, No.	Each	Plug Fuse, No.	Cartridge Fuse, No.	Each
4	30	W14	NTP304L	NTC304L	\$34.00	SNTP304LD	SNTC304LD	\$50.00
8	60	W17	NTP308L	NTC308L	40.00	SNTP308LD	SNTC308LD	60.00
12	60	W20	NTP312L	NTC312L	50.00	SNTP312LD	SNTC312LD	70.00
16	100	W23	NTP316L	NTC316L	74.00	SNTP316LD	SNTC316LD	86.00
20	100	W26	NTP320L	NTC320L	84.00	SNTP320LD	SNTC320LD	96.00
24	100	W29	NTP324L	NTC324L	94.00	SNTP324LD	SNTC324LD	106.00
28	100	W32	NTP328L	NTC328L	104.00	SNTP328LD	SNTC328LD	116.00
32	100	W35	NTP332L	NTC332L	114.00	SNTP332LD	SNTC332LD	126.00
36	200	W41	NTP336L	NTC336L	140.00	SNTP336LD	SNTC336LD	152.00
40	200	W44	NTP340L	NTC340L	150.00	SNTP340LD	SNTC340LD	162.00
Mains: SAFtoFUSE, Solid Neutral								
4	30	W23	NTP304F	NTC304F	\$46.00	SNTP304FD	SNTC304FD	\$62.00
8	60	W26	NTP308F	NTC308F	58.00	SNTP308FD	SNTC308FD	74.00
12	60	W29	NTP312F	NTC312F	70.00	SNTP312FD	SNTC312FD	86.00
16	100	W32	NTP316F	NTC316F	90.00	SNTP316FD	SNTC316FD	102.00
20	100	W35	NTP320F	NTC320F	102.00	SNTP320FD	SNTC320FD	114.00
24	100	W38	NTP324F	NTC324F	114.00	SNTP324FD	SNTC324FD	126.00
28	100	W41	NTP328F	NTC328F	126.00	SNTP328FD	SNTC328FD	138.00
32	100	W44	NTP332F	NTC332F	138.00	SNTP332FD	SNTC332FD	150.00
36	200	W56	NTP336F	NTC336F	166.00	SNTP336FD	SNTC336FD	178.00
40	200	W59	NTP340F	NTC340F	178.00	SNTP340FD	SNTC340FD	190.00
Mains: Fusible Switch, Solid Neutral								
4	30	W23	NTP304SF	NTC304SF	\$64.00	SNTP304SFD	SNTC304SFD	\$80.00
8	60	W26	NTP308SF	NTC308SF	74.00	SNTP308SFD	SNTC308SFD	90.00
12	60	W29	NTP312SF	NTC312SF	86.00	SNTP312SFD	SNTC312SFD	102.00
16	100	W32	NTP316SF	NTC316SF	110.00	SNTP316SFD	SNTC316SFD	122.00
20	100	W35	NTP320SF	NTC320SF	122.00	SNTP320SFD	SNTC320SFD	134.00
24	100	W38	NTP324SF	NTC324SF	134.00	SNTP324SFD	SNTC324SFD	146.00
28	100	W41	NTP328SF	NTC328SF	146.00	SNTP328SFD	SNTC328SFD	158.00
32	100	W44	NTP332SF	NTC332SF	158.00	SNTP332SFD	SNTC332SFD	170.00
36	200	W56	NTP336SF	NTC336SF	206.00	SNTP336SFD	SNTC336SFD	218.00
40	200	W59	NTP340SF	NTC340SF	218.00	SNTP340SFD	SNTC340SFD	230.00

Single Fusing—3-Phase, 4-Wire, Solid Neutral

MAINS. 3-Phase, 4-Wire, 125-250 Volts.
BRANCHES. 2-Wire, 125-Volt, 30-Ampere Single Pole Toggle Switch and Fuse.
 Mains: Lugs Only, Solid Neutral

No. of Circuits	Main Amp.	Box No.	*Modified Superba Type One Door Construction			Standard Superba Type Individual Doors over Fuses		
			Plug Fuse, No.	Cartridge Fuse, No.	Each	Plug Fuse, No.	Cartridge Fuse, No.	Each
4	30	W14	NTP404L	NTC404L	\$40.00	SNTP404LD	SNTC404LD	\$52.00
8	60	W17	NTP408L	NTC408L	52.00	SNTP408LD	SNTC408LD	64.00
12	60	W20	NTP412L	NTC412L	62.00	SNTP412LD	SNTC412LD	74.00
16	60	W23	NTP416L	NTC416L	78.00	SNTP416LD	SNTC416LD	90.00
20	60	W26	NTP420L	NTC420L	88.00	SNTP420LD	SNTC420LD	100.00
24	60	W29	NTP424L	NTC424L	100.00	SNTP424LD	SNTC424LD	112.00
28	100	W32	NTP428L	NTC428L	110.00	SNTP428LD	SNTC428LD	122.00
32	100	W35	NTP432L	NTC432L	120.00	SNTP432LD	SNTC432LD	132.00
36	100	W41	NTP436L	NTC436L	146.00	SNTP436LD	SNTC436LD	154.00
40	100	W44	NTP440L	NTC440L	156.00	SNTP440LD	SNTC440LD	164.00
Mains: SAFtoFUSE, Solid Neutral								
4	30	W23	NTP404F	NTC404F	\$54.00	SNTP404FD	SNTC404FD	\$66.00
8	60	W26	NTP408F	NTC408F	66.00	SNTP408FD	SNTC408FD	78.00
12	60	W29	NTP412F	NTC412F	78.00	SNTP412FD	SNTC412FD	90.00
16	60	W32	NTP416F	NTC416F	96.00	SNTP416FD	SNTC416FD	108.00
20	60	W35	NTP420F	NTC420F	108.00	SNTP420FD	SNTC420FD	120.00
24	60	W38	NTP424F	NTC424F	120.00	SNTP424FD	SNTC424FD	132.00
28	100	W41	NTP428F	NTC428F	132.00	SNTP428FD	SNTC428FD	144.00
32	100	W44	NTP432F	NTC432F	148.00	SNTP432FD	SNTC432FD	160.00
36	100	W50	NTP436F	NTC436F	170.00	SNTP436FD	SNTC436FD	180.00
40	100	W53	NTP440F	NTC440F	182.00	SNTP440FD	SNTC440FD	194.00
Mains: Fusible Switch, Solid Neutral								
4	30	W32	NTP404SF	NTC404SF	\$76.00	SNTP404SFD	SNTC404SFD	\$88.00
8	60	W35	NTP408SF	NTC408SF	88.00	SNTP408SFD	SNTC408SFD	100.00
12	60	W38	NTP412SF	NTC412SF	100.00	SNTP412SFD	SNTC412SFD	112.00
16	60	W41	NTP416SF	NTC416SF	122.00	SNTP416SFD	SNTC416SFD	134.00
20	60	W44	NTP420SF	NTC420SF	136.00	SNTP420SFD	SNTC420SFD	148.00
24	60	W47	NTP424SF	NTC424SF	148.00	SNTP424SFD	SNTC424SFD	160.00
28	100	W50	NTP428SF	NTC428SF	162.00	SNTP428SFD	SNTC428SFD	174.00
32	100	W53	NTP432SF	NTC432SF	176.00	SNTP432SFD	SNTC432SFD	188.00
36	100	W59	NTP436SF	NTC436SF	222.00	SNTP436SFD	SNTC436SFD	234.00
40	100	W62	NTP440SF	NTC440SF	234.00	SNTP440SFD	SNTC440SFD	246.00

*For Modified Superba Type with door-in-door front (shown at lower left) add suffix letter "D" and use the price of the corresponding Standard Superba Type Panel.

Bull Dog Superba Lighting Panelboards

CABINET. Box, Code Gage Galvanized Steel—20 Inches Wide, 5½ Inches Deep, 4-Inch Gutters. Height in Inches is Indicated by Numerals in Box Numbers. Front, Code Thickness Steel, Black Finish—Flush Spring Locks.

Modified Type. Has the improved features of the Superba design, but is furnished without separate doors over fuses.
Standard Type. Equipped with separate doors over the fuses of each branch circuit, interlocked with the toggle switches for safety.

Numbers and prices include complete panel (less fuses) and cabinet.
 Flush fronts will be furnished unless surface type is specified on order.

Double Fusing—2/2 Wire

MAINS. 2-Wire, 125/250 Volts.
BRANCHES. 2-Wire, 30-Ampere Double Pole Toggle Switch and Fuse. Plug Fuse Type, 125 Volts; Cartridge Fuse Type, 250 Volts.

Mains: Lugs Only

No. of Circuits	Main Amp.	Box No.	*Modified Superba Type One Door Construction			Standard Superba Type Individual Doors over Fuses		
			Plug Fuse, No.	Cartridge Fuse, No.	Each	Plug Fuse, No.	Cartridge Fuse, No.	Each
4	60	W17	TP204L	TC204L	\$42.00	STP204LD	STC204LD	\$62.00
6	100	W20	TP206L	TC206L	52.00	STP206LD	STC206LD	68.00
8	100	W23	TP208L	TC208L	62.00	STP208LD	STC208LD	78.00
10	100	W26	TP210L	TC210L	72.00	STP210LD	STC210LD	88.00
12	200	W29	TP212L	TC212L	82.00	STP212LD	STC212LD	98.00
14	200	W32	TP214L	TC214L	94.00	STP214LD	STC214LD	110.00
16	200	W35	TP216L	TC216L	104.00	STP216LD	STC216LD	120.00
18	200	W38	TP218L	TC218L	114.00	STP218LD	STC218LD	130.00
20	200	W41	TP220L	TC220L	124.00	STP220LD	STC220LD	140.00
Mains: SAFtoFUSE								
4	60	W26	TP204F	TC204F	\$58.00	STP204FD	STC204FD	\$74.00
6	100	W29	TP206F	TC206F	70.00	STP206FD	STC206FD	86.00
8	100	W32	TP208F	TC208F	80.00	STP208FD	STC208FD	96.00
10	100	W35	TP210F	TC210F	90.00	STP210FD	STC210FD	106.00
12	200	W44	TP212F	TC212F	110.00	STP212FD	STC212FD	126.00
14	200	W47	TP214F	TC214F	120.00	STP214FD	STC214FD	136.00
16	200	W50	TP216F	TC216F	130.00	STP216FD	STC216FD	146.00
18	200	W53	TP218F	TC218F	140.00	STP218FD	STC218FD	156.00
20	200	W56	TP220F	TC220F	150.00	STP220FD	STC220FD	166.00
Mains: Fusible Switch								
4	60	W26	TP204SF	TC204SF	\$72.00	STP204SFD	STC204SFD	\$88.00
6	100	W29	TP206SF	TC206SF	92.00	STP206SFD	STC206SFD	108.00
8	100	W32	TP208SF	TC208SF	102.00	STP208SFD	STC208SFD	118.00
10	100	W35	TP210SF	TC210SF	112.00	STP210SFD	STC210SFD	128.00
12	200	W44	TP212SF	TC212SF	144.00	STP212SFD	STC212SFD	160.00
14	200	W47	TP214SF	TC214SF	154.00	STP214SFD	STC214SFD	170.00
16	200	W50	TP216SF	TC216SF	174.00	STP216SFD	STC216SFD	190.00
18	200	W53	TP218SF	TC218SF	184.00	STP218SFD	STC218SFD	200.00
20	200	W56	TP220SF	TC220SF	194.00	STP220SFD	STC220SFD	210.00

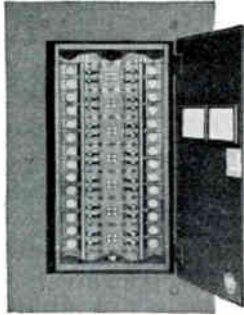
Double Fusing—3/2 Wire

MAINS. 3-Wire, 125/250 Volts.
BRANCHES. 2-Wire, 125-Volt, 30-Ampere Double Pole Toggle Switch and Fuse.

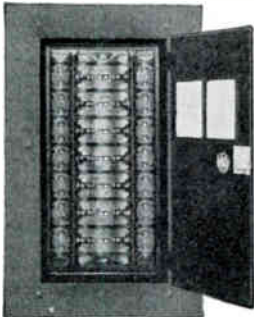
Mains: Lugs Only

No. of Circuits	Main Amp.	Box No.	*Modified Superba Type One Door Construction			Standard Superba Type Individual Doors over Fuses		
			Plug Fuse, No.	Cartridge Fuse, No.	Each	Plug Fuse, No.	Cartridge Fuse, No.	Each
4	30	W17	TP304L	TC304L	\$38.00	STP304LD	STC304LD	\$58.00
6	60	W20	TP306L	TC306L	48.00	STP306LD	STC306LD	68.00
8	60	W23	TP308L	TC308L	58.00	STP308LD	STC308LD	78.00
10	60	W26	TP310L	TC310L	68.00	STP310LD	STC310LD	88.00
12	60	W29	TP312L	TC312L	78.00	STP312LD	STC312LD	98.00
14	100	W32	TP314L	TC314L	90.00	STP314LD	STC314LD	106.00
16	100	W35	TP316L	TC316L	100.00	STP316LD	STC316LD	116.00
18	100	W38	TP318L	TC318L	110.00	STP318LD	STC318LD	126.00
20	100	W41	TP320L	TC320L	124.00	STP320LD	STC320LD	140.00
Mains: SAFtoFUSE, Solid Neutral								
4	30	W26	TP304F	TC304F	\$52.00	STP304FD	STC304FD	\$68.00
6	60	W29	TP306F	TC306F	62.00	STP306FD	STC306FD	78.00
8	60	W32	TP308F	TC308F	72.00	STP308FD	STC308FD	88.00
10	60	W35	TP310F	TC310F	82.00	STP310FD	STC310FD	98.00
12	60	W38	TP312F	TC312F	92.00	STP312FD	STC312FD	108.00
14	100	W41	TP314F	TC314F	112.00	STP314FD	STC314FD	128.00
16	100	W44	TP316F	TC316F	122.00	STP316FD	STC316FD	138.00
18	100	W47	TP318F	TC318F	132.00	STP318FD	STC318FD	148.00
20	100	W50	TP320F	TC320F	142.00	STP320FD	STC320FD	158.00
Mains: Fusible Switch, Solid Neutral								
4	30	W26	TP304SF	TC304SF	\$70.00	STP304SFD	STC304SFD	\$86.00
6	60	W29	TP306SF	TC306SF	80.00	STP306SFD	STC306SFD	96.00
8	60	W32	TP308SF	TC308SF	90.00	STP308SFD	STC308SFD	106.00
10	60	W35	TP310SF	TC310SF	100.00	STP310SFD	STC310SFD	116.00
12	60	W38	TP312SF	TC312SF	110.00	STP312SFD	STC312SFD	126.00
14	100	W41	TP314SF	TC314SF	130.00	STP314SFD	STC314SFD	146.00
16	100	W44	TP316SF	TC316SF	140.00	STP316SFD	STC316SFD	156.00
18	100	W47	TP318SF	TC318SF	150.00	STP318SFD	STC318SFD	166.00
20	100	W50	TP320SF	TC320SF	166.00	STP320SFD	STC320SFD	182.00

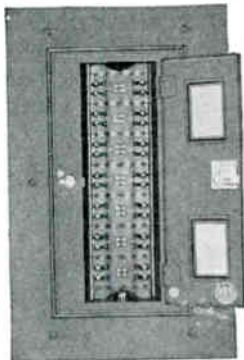
*For Modified Superba Type with door-in-door front (shown at lower left) add suffix letter "D" and use the price of the corresponding Standard Superba Type Panel.



Modified Superba, with Single Door Front

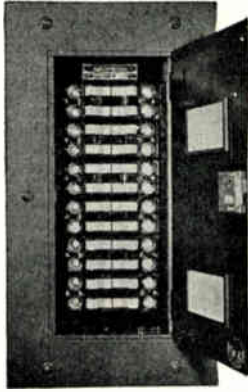


Standard Superba, with Doors over Fuses—Single Door Front

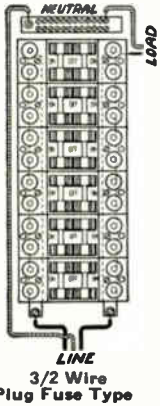


Modified Superba, with Door-in-Door Front

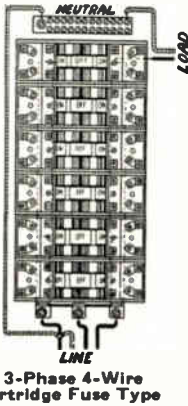
Bull Dog Rocker Type Lighting Panelboards
Single Fusing—One-Door Construction



No. NTPR324L



3/2 Wire Plug Fuse Type



3-Phase 4-Wire Cartridge Fuse Type

Equipped with flush locks and keys. One single pole Rocker type switch and fuse per circuit, solid neutral. Boxes are 15½ inches wide and 4½ inches deep. Provide 4-inch wiring gutters. Height in inches indicated by numeral in box numbers shown in table.

Fronts, code thickness steel, black finish, equipped with flush spring locks. Flush fronts furnished unless surface type is specified on order. Single door type, also with lockable inner doors over fuse sections.

3/2 Wire, 125-250 Volts, Solid Neutral

No. of Mains Cir.	Cap. Amps.	Plug Fuse		Cartridge Fuse		Section Each	Box No.	Wt. Lb.
		No.	Each	No.	Each			
4	30	NTPR304L	\$24.00	NTCR304L	\$27.00	\$5.00	X17	46
8	60	NTPR308L	28.00	NTCR308L	31.00	5.00	X17	50
12	60	NTPR312L	35.00	NTCR312L	39.00	6.00	X23	55
16	100	NTPR316L	52.00	NTCR316L	57.00	6.00	X23	65
20	100	NTPR320L	59.00	NTCR320L	65.00	8.00	X29	75
24	100	NTPR324L	66.00	NTCR324L	73.00	8.00	X29	85
28	100	NTPR328L	73.00	NTCR328L	80.00	10.00	X38	95
32	100	NTPR332L	80.00	NTCR332L	88.00	10.00	X38	105
36	200	NTPR336L	98.00	NTCR336L	108.00	12.00	X44	115
40	200	NTPR340L	106.00	NTCR340L	117.00	12.00	X44	125

*Add for Inner Doors Over Fuse

3-Phase, 4-Wire, 120-208 Volts, Solid Neutral

8	60	NTCR408L	\$31.00	NTPR408L	\$35.00	\$5.00	X17	50
12	60	NTCR412L	39.00	NTPR412L	43.00	6.00	X23	55
16	60	NTCR416L	57.00	NTPR416L	63.00	6.00	X23	65
20	60	NTCR420L	65.00	NTPR420L	72.00	8.00	X29	75
24	60	NTCR424L	73.00	NTPR424L	80.00	8.00	X29	85
28	100	NTCR428L	80.00	NTPR428L	88.00	10.00	X38	95
32	100	NTCR432L	88.00	NTPR432L	97.00	10.00	X38	105
36	100	NTCR436L	108.00	NTPR436L	120.00	12.00	X44	115
40	100	NTCR440L	117.00	NTPR440L	128.00	12.00	X44	125

*For lockable inner doors, add suffix D to catalog number; example, NTPR316LD.

Prices include panel and cabinet complete; fuses not included.

SAFtoFUSE Mains and Fusible Switch Mains are also available, data and prices upon application.

Bull Dog Lighting Panelboards

Branches: Fuse Only

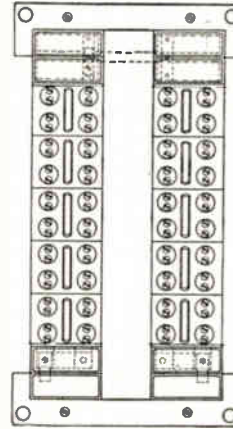
Double Row—Unit-Versal Type

Using Plug Fuse in 1 Leg Only—Solid Neutral Bar in Other Cabinets, 20 inches wide, 5½ inches deep. Wiring gutters, 4 inches

Numerals in Box No. indicates height in inches.

Mains: 3-Wire, 125-250 Volts

Branches: 2-Wire, 30 Amps., 125 V., Single Pole



Style N2P3L

Mains—Lugs Only, Solid Neutral

No. Cir.	No.	Each	Mains Amps.	Box No.
16	N2P316L	\$56.00	100	W23
24	N2P324L	66.00	100	W26
32	N2P332L	76.00	100	W29
40	N2P340L	106.00	200	W35

Mains—SAFtoFUSE, Solid Neutral

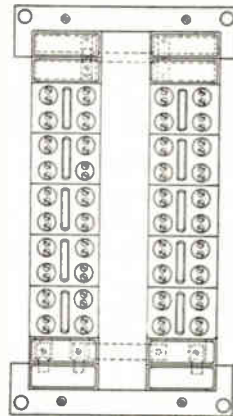
8	N2P308F	\$60.00	60	W26
16	N2P316F	80.00	100	W32
24	N2P324F	90.00	100	W35
32	N2P332F	105.00	100	W38
40	N2P340F	136.00	200	W44

Mains—Fusible Switch, Solid Neutral

8	N2P308BSF	\$74.00	60	W26
16	N2P316BSF	95.00	100	W32
24	N2P324BSF	108.00	100	W35
32	N2P332BSF	120.00	100	W38
40	N2P340BSF	166.00	200	W44

Mains: 4-Wire, 3-Phase, 125-250 Volts

Branches: 2-Wire, 30 Amps., 125 V. Single Pole



Style N2P4L

Mains—Lugs Only, Solid Neutral

16	N2P416L	\$60.00	60	W26
24	N2P424L	70.00	60	W29
32	N2P432L	80.00	100	W32
40	N2P440L	108.00	100	W35

Mains—SAFtoFUSE, Solid Neutral

8	N2P408F	\$70.00	60	W26
16	N2P416F	84.00	60	W32
24	N2P424F	94.00	60	W35
32	N2P432F	110.00	100	W38
40	N2P440F	140.00	100	W41

Mains—Fusible Switch, Solid Neutral

8	N2P408BSF	\$82.00	60	W35
16	N2P416BSF	104.00	60	W41
24	N2P424BSF	120.00	60	W44
32	N2P432BSF	132.00	100	W47
40	N2P440BSF	176.00	100	W50

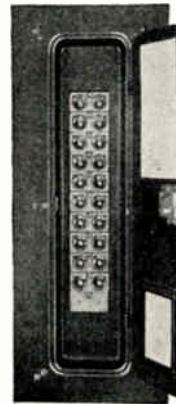
Single Row—Narrow Type

NRP Fusenter Line

Cabinets, 10½ inches wide, and 4¼ inches deep. Wiring gutters, 3 inches.

Mains: 3-Wire, 125-250 Volts, Lugs Only

Branches: 2-Wire, 30 Amps., 125 V. Single Pole



No. NRP320L

No. Cir.	No.	Each	Mains Amps.	Box Ht. In.
8	NRP308L	\$16.00	60	15
10	NRP315L	18.00	60	20
12	NRP312L	20.50	60	20
14	NRP314L	22.60	100	24
16	NRP316L	24.30	100	24
18	NRP318L	26.00	100	28
20	NRP320L	27.70	100	28
22	NRP322L	30.90	100	28
24	NRP324L	34.15	100	28

Bull Dog Nofuze Lighting Panels and Cabinets

Circuit Breaker Type

These panels have circuit breakers in the branches in lieu of toggle switches and fuses.

They are adapted for use in buildings where circuits are subject to overloads which would involve much fuse replacement and where frequent switching is done at the panels.

The breakers are quick-make and quick-break with automatic overload trip and inverse-time-limit feature. They cannot be held closed against overload. The trip is automatic and self-indicating with manual reset.

Code gage galvanized sheet steel boxes; width, 20 inches, depth, 5½ inches; gutters, 4 inches. Height of box in inches is indicated by numerals in box catalog numbers shown in tables.

Flush fronts furnished unless surface type specified.

Catalog Nos. listed cover 15-ampere breakers. No increase in price for 20 and 25-ampere breakers. For 35 and 50 amperes, add \$1.00 for single pole and \$2.00 for double pole. Capacity of each branch circuit must be specified on order.



No. NA1B312—with Main Lugs

Type NA1B3

3-Wire, Single Phase, 125/250 Volt, Solid Neutral
 Mains: 125/250 V. 3-Wire, Single Phase, Solid Neutral
 Branches: 125 V. 2-Wire with 15 Amp. S.P. Circuit Breakers A.C. or D.C.

Main Lugs Only

No. of Cir.	Catalog Number	Each	Main Amp.	Box Cat. No.	Approx. Wt. Lbs.
4	NA1B304L	\$49.00	50	W14	62
6	NA1B306L	59.00	50	W17*	68
8	NA1B308L	70.00	50	W17	70
10	NA1B310L	81.00	50	W20*	76
12	NA1B312L	95.00	100	W20	78
14	NA1B314L	107.00	100	W23*	84
16	NA1B316L	119.00	100	W23	86
18	NA1B318L	131.00	100	W26*	95
20	NA1B320L	143.00	100	W26	98
22	NA1B322L	155.00	100	W29*	108
24	NA1B324L	167.00	100	W29	112
26	NA1B326L	179.00	100	W32*	125
28	NA1B328L	191.00	100	W32	130
30	NA1B330L	203.00	100	W35*	145
32	NA1B332L	215.00	100	W35	151
34	NA1B334L	238.00	200	W41*	168
36	NA1B336L	251.00	200	W41	175
38	NA1B338L	264.00	200	W44*	194
40	NA1B340L	277.00	200	W44	202

Main Breakers

4	NA1B304AB	\$71.00	50	W26	78
6	NA1B306AB	81.00	50	W29*	84
8	NA1B308AB	92.00	50	W29	86
10	NA1B310AB	103.00	50	W32*	95
12	NA1B312AB	138.00	100	W32	98
14	NA1B314AB	150.00	100	W35*	108
16	NA1B316AB	162.00	100	W35	112
18	NA1B318AB	174.00	100	W38*	125
20	NA1B320AB	186.00	100	W38	130
22	NA1B322AB	202.00	100	W41*	145
24	NA1B324AB	214.00	100	W41	151
26	NA1B326AB	226.00	100	W44*	168
28	NA1B328AB	238.00	100	W44	175
30	NA1B330AB	250.00	100	W47*	194
32	NA1B332AB	262.00	100	W47	202
34	NA1B334AB	345.00	200	W59*	223
36	NA1B336AB	358.00	200	W59	233
38	NA1B338AB	371.00	200	W62*	256
40	NA1B340AB	384.00	200	W62	267

Type NA1B4

4-Wire, 3-Phase, 125/250 Volt, Solid Neutral
 Mains: 125/250 V. 4-Wire, 3-Phase, Solid Neutral
 Branches: 125 Volts 2-Wire with 15 Amp. S.P. Circuit Breakers A.C.

Main Lugs Only

No. of Cir.	Catalog Number	Each	Main Amp.	Box Cat. No.	Approx. Wt. Lbs.
4	NA1B404L	\$51.00	50	W14	58
6	NA1B406L	62.00	50	W17*	64
8	NA1B408L	73.00	50	W17	70
10	NA1B410L	85.00	50	W20*	76
12	NA1B412L	96.00	50	W20	78
14	NA1B414L	108.00	50	W23*	84
16	NA1B416L	122.00	100	W23	86
18	NA1B418L	134.00	100	W26*	95
20	NA1B420L	146.00	100	W26	98
22	NA1B422L	158.00	100	W29*	108
24	NA1B424L	170.00	100	W29	112
26	NA1B426L	182.00	100	W32*	125
28	NA1B428L	194.00	100	W32	130
30	NA1B430L	206.00	100	W35*	145
32	NA1B432L	218.00	100	W35	151
34	NA1B434L	238.00	100	W41*	168
36	NA1B436L	251.00	100	W41	175
38	NA1B438L	264.00	100	W44*	194
40	NA1B440L	277.00	100	W44	202

Main Breakers

4	NA1B404AB	\$79.00	50	W26	78
6	NA1B406AB	90.00	50	W29*	84
8	NA1B408AB	101.00	50	W29	86
10	NA1B410AB	113.00	50	W32*	95
12	NA1B412AB	124.00	50	W32	98
14	NA1B414AB	136.00	50	W35*	108
16	NA1B416AB	180.00	100	W35	112
18	NA1B418AB	191.00	100	W38*	125
20	NA1B420AB	203.00	100	W38	130
22	NA1B422AB	219.00	100	W41*	145
24	NA1B424AB	231.00	100	W41	151
26	NA1B426AB	243.00	100	W44*	168
28	NA1B428AB	255.00	100	W44	175
30	NA1B430AB	267.00	100	W47*	194
32	NA1B432AB	279.00	100	W47	202
34	NA1B434AB	296.00	100	W53*	223
36	NA1B436AB	309.00	100	W53	233
38	NA1B438AB	322.00	100	W56*	244
40	NA1B440AB	335.00	100	W56	250

*Spare space included in these panels for 2 future S.P. circuit breakers.

FA Service Equipment For New Sequence—Pulfuzsw Type

BASES. MAINS. Moulded Insulating Material. Pull Fuse Switch Unit, 30 Amp., S.P., 125 V., 30 and 60 Amp., D.P., 125-250 V. Solid Neutral Plate Grounded to Box. 60 Amp. with Thru Feeder Connection.
BRANCHES. BOX. S.P. Plug Fuse Connection, Range D.P. 60 Amp. with Solid Neutral. Code Thickness Galvanized Steel. 3/2 Inches Deep.
FRONT. Code Thickness Furniture Steel. Pearl Grey Finish. Flush and Surface Mounting. Ring Handle Catch on Door.

Designed only for the new sequence meter connection with the meter placed in the line side of the service switch.

Following assemblies are shown, all with the neutral connection bonded to the box: first, service switch only; second, service switch with 15-ampere branches; and third, service switch with 60-ampere range or sub-feeder branch, either with or without 15-ampere branches. Intended to be used for 125 to 250-volt, a.c. feeder systems only.

Meter loop connection can be furnished if required, between service entrance switch and range switch and 15-ampere

cutout base, except in combination of service and range switch placed side by side.

All 60-ampere capacity service switches either with or without 60-ampere range switch, are furnished with connections for a thru feeder, so that the main feeder cable can be continued from this service equipment on to an additional center of distribution for the other branch circuits in the building.

Locking or sealing arrangement can be furnished at extra charge. Bell transformer space with partition can also be furnished extra.



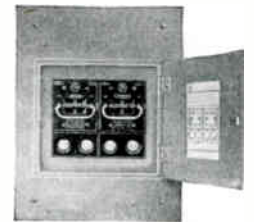
30 Amp., S.P.



60 Amp., D.P.



30 and 60 Amp., D.P.

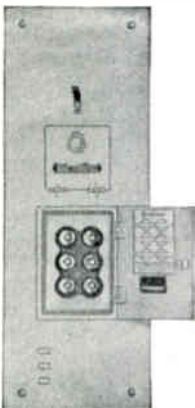


60 Amp., D.P.

No. of BRANCHES	15 Amp. Thru	INSIDE BOX DIMEN., IN.		Std. Pkg.	Approx. Wt. Lb. Std. Pkg.	FLUSH MOUNTING		SURFACE MOUNTING	
		Width	Ht.			No.	Each	No.	Each
30 Amperes—Single Pole									
.	1	7 1/2	8	6	50	SE32PF0F	\$5.00	SE32PF0S	\$4.50
2	.	7 1/2	11	6	55	SE32PF2F	6.50	SE32PF2S	5.50
3	.	7 1/2	11	6	65	SE32PF3F	7.00	SE32PF3S	6.50
4	.	7 1/2	11	6	65	SE32PF4F	7.50	SE32PF4S	7.00
30 Amperes—Double Pole									
.	1	7 1/2	8	6	50	SE33PF0F	\$7.00	SE33PF0S	\$6.50
2	.	7 1/2	11	6	55	SE33PF2F	9.50	SE33PF2S	8.50
3	.	7 1/2	11	6	65	SE33PF3F	8.50	SE33PF3S	7.25
4	.	7 1/2	11	6	65	SE33PF4F	10.50	SE33PF4S	9.50
6	.	7 1/2	13	6	70	SE33PF6F	11.50	SE33PF6S	11.00
8	.	7 1/2	15	6	75	SE33PF8F	13.50	SE33PF8S	13.00
60 Amperes—Double Pole									
.	1	7 1/2	9 1/2	4	55	SE63PF0F	\$7.20	SE63PF0S	\$6.20
2	1	7 1/2	11	4	60	SE63PF2F	9.20	SE63PF2S	8.20
4	1	7 1/2	14	4	65	SE63PF4F	9.50	SE63PF4S	8.50
6	1	7 1/2	15 1/2	4	70	SE63PF6F	12.80	SE63PF6S	12.80
8	1	7 1/2	17	4	75	SE63PF8F	18.50	SE63PF8S	17.50
10	1	7 1/2	20	4	90	SE63PF10F	23.00	SE63PF10S	21.00
12	1	7 1/2	20	4	100	SE63PF12F	27.00	SE63PF12S	26.00
2	1	7 1/2	17	4	75	SE63PF2-6F	13.50	SE63PF2-6S	12.50
4	1	7 1/2	20	4	80	SE63PF4-6F	14.00	SE63PF4-6S	13.00
6	1	7 1/2	23	4	100	SE63PF6-6F	14.50	SE63PF6-6S	14.50
8	1	7 1/2	23	4	100	SE63PF8-6F	21.00	SE63PF8-6S	19.00
.	1	9	12	4	60	SE63PF0-6XF	11.50	SE63PF0-6XS	10.00
2	1	9	12	4	60	SE63PF2-6XF	13.50	SE63PF2-6XS	12.50
4	1	9	12	4	60	SE63PF4-6XF	14.00	SE63PF4-6XS	13.00
6	1	9	18 1/4	4	75	SE63PF6-6XF	14.50	SE63PF6-6XS	14.50
8	1	9	18 1/4	4	75	SE63PF8-6XF	21.00	SE63PF8-6XS	19.00

For New Sequence: Meter—Switch—Fuse

BASES. MAINS. Made of Sections of Moulded Material. Safety Type Service Entrance Switch with Solid Neutral Ground Connection for 2-Wire, 125 V. and 3-Wire, 125-250 V. Feeder System.
BRANCHES. BOX. 30 Amp., S.P., N.E.C. Plug Type Fuse Connections, 125 V., 2-Wire, Solid Neutral. Code Thickness Galvanized Steel, with Enclosure for Bell Transformer.
FRONT. Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush and Surface Mounting. Ring Handle Catch on Door.



No. SE635F

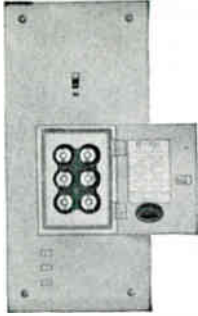
Units with 30-ampere mains have N.E.C. plug type main fuse connections in same non-interlocked compartment with branch circuit fuse connections; upper left-hand fuse for 2-wire mains and both upper fuses for 3-wire mains. Sixty and 100-ampere mains have N.E.C. cartridge type fuse connections under separate door interlocked with switch operating handle.

For omitting bell transformer enclosure, and knock-outs, deduct \$1.00. This decreases cabinet height 3 inches on 12-branch circuit units and under.

No. of 15 Amp. Branches	INSIDE BOX DIMEN., IN.	Width	Ht.	Depth	Std. Pkg.	Approx. Wt. Lb. Std. Pkg.	FLUSH MOUNTING		SURFACE MOUNTING	
							No.	Each	No.	Each
2-Wire Mains—30 Amperes										
2	7 1/2	15	3 1/2	3 1/2	6	90	SE322F	\$7.00	SE322S	\$6.50
3	7 1/2	17	3 1/2	3 1/2	6	90	SE323F	7.50	SE323S	7.00
4	7 1/2	17	3 1/2	3 1/2	6	100	SE324F	8.00	SE324S	7.50
3-Wire Mains—30 Amperes										
2	7 1/2	15	3 1/2	3 1/2	6	90	SE332F	\$7.50	SE332S	\$7.00
3	7 1/2	17	3 1/2	3 1/2	6	100	SE333F	8.00	SE333S	7.50
4	7 1/2	17	3 1/2	3 1/2	6	100	SE334F	8.50	SE334S	8.00
5	7 1/2	19	3 1/2	3 1/2	6	132	SE335F	9.50	SE335S	9.00
6	7 1/2	19	3 1/2	3 1/2	2	44	SE336F	10.00	SE336S	9.50
8	7 1/2	19	3 1/2	3 1/2	2	50	SE338F	16.00	SE338S	15.50
3-Wire Mains—60 Amperes										
6	7 1/2	23	3 1/2	3 1/2	2	44	SE636F	\$13.50	SE636S	\$13.00
8	7 1/2	26	3 1/2	3 1/2	2	50	SE638F	20.50	SE638S	19.50
10	7 1/2	26	3 1/2	3 1/2	2	60	SE6310F	24.50	SE6310S	23.00
12	7 1/2	29	3 1/2	3 1/2	2	65	SE6312F	28.50	SE6312S	27.50
3-Wire Mains—100 Amperes										
14	12	40 1/2	4	4	1	85	SE10314F	\$47.50	SE10314S	\$47.50
16	12	40 1/2	4	4	1	85	SE10316F	52.00	SE10316S	52.00
18	12	43 1/2	4	4	1	90	SE10318F	55.00	SE10318S	55.00
20	12	43 1/2	4	4	1	90	SE10320F	58.50	SE10320S	58.50

FA Service Equipment

For New Sequence: Meter—Switch



No. SE3036F

BASES. Made of Sections of Moulded Material.
MAINS. Safety Type Unfused Service Entrance Switch with Solid Neutral Ground Connection for 2-Wire, 125 V. and 3-Wire, 125-250 V. Feeder System.
BRANCHES. 30 Amp., S. P., N. E. C. Plug Type Fuse Connections, 125 V., 2-Wire, Solid Neutral.
BOX. Code Thickness Galvanized Steel, with Enclosure for Bell Transformer.
FRONT. Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush and Surface Mounting. Ring Handle Catch on Door.

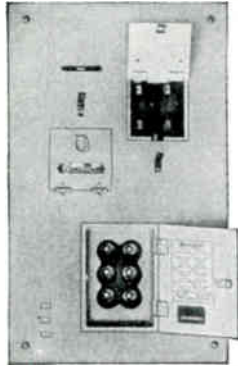
No. of Branches	INSIDE BOX DIMEN., IN.		Approx. Std. Pkg.	Approx. Wt. Lb. Std. Pkg.	FLUSH MOUNTING No. Each	SURFACE MOUNTING No. Each
	Width	Ht.				
2	7½	15	3½	6	90 SE3022F	\$6.50 SE3022S \$6.00
3	7½	15	3½	6	90 SE3023F	7.00 SE3023S 6.50
4	7½	15	3½	6	100 SE3024F	7.50 SE3024S 7.00
2	7½	15	3½	6	90 SE3032F	7.00 SE3032S 6.50
3	7½	15	3½	6	100 SE3033F	7.50 SE3033S 7.00
4	7½	15	3½	6	100 SE3034F	8.00 SE3034S 7.50
5	7½	17	3½	6	132 SE3035F	8.50 SE3035S 8.00
6	7½	17	3½	2	44 SE3036F	9.00 SE3036S 8.50

3-Wire Mains—60 Amperes

6	7½	20	3½	2	44 SE6036F	\$12.25 SE6036S \$11.75
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For New Sequence: Meter—Switch—Fuse

BASES. Made of Sections of Moulded Material.
MAINS. Fuslok Service Entrance Switch with Solid Neutral Ground Connection, for 3-Wire, 125-250 V. Feeder System.
BRANCHES. 30 Amp., S.P., N.E.C. Plug Type Fuse Connections, 125 V., 2-Wire, Solid Neutral and 60 Amp., D.P. Fuslok Safety Type Switches for Range or Sub-feeder Branches.
BOX. Code Thickness Galvanized Steel, 3½ Inches Deep, with Enclosure for Bell Transformer.
FRONT. Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush and Surface Mounting. Ring Handle Catch on Door.



No. SE6366F

No. of Branches	15 Amp. 60 Amp.	INSIDE BOX DIMEN., IN.		Std. Pkg.	60 Amperes		Surface Mounting No.	Each
		Width	Ht.		Approx. Wt. Lb. Std. Pkg.	Flush Mounting No.		
2	1	9	15	2	40	SE6306F	SE6306S	\$18.50
3	1	13	20½	2	70	SE6326F	SE6326S	22.00
4	1	13	20½	2	70	SE6336F	SE6336S	26.50
5	1	13	20½	2	70	SE6346F	SE6346S	28.50
6	1	13	22	2	80	SE6356F	SE6356S	30.00
8	1	13	22	2	80	SE6366F	SE6366S	31.50
8	1	15	31¼	1	85	SE10386F	SE10386S	\$41.00
10	1	15	32¾	1	85	SE103106F	SE103106S	47.50
12	1	15	32¾	1	85	SE103126F	SE103126S	54.00
14	1	15	37	1	90	SE103146F	SE103146S	58.50
16	1	15	37	1	90	SE103166F	SE103166S	63.00
18	1	15	38½	1	95	SE103186F	SE103186S	67.00
20	1	15	38½	1	95	SE103206F	SE103206S	70.50
8	2	16	37	1	120	SE103866F	SE103866S	54.50
10	2	16	38½	1	120	SE1031066F	SE1031066S	63.50
12	2	16	40	1	120	SE1031266F	SE1031266S	68.50
14	2	16	45	1	130	SE1031466F	SE1031466S	72.00
16	2	16	45	1	130	SE1031666F	SE1031666S	76.00

For New Sequence: *Meter—Switch—Fuse

BASES. Made of Sections of Moulded Material.
MAINS. 100 Amp., Lugs Only, for 3-Wire, 125-250 V. Solid Neutral Feeder System; Fuslok Safety Type Switch for Lighting Branch Circuit Main.
BRANCHES. 30 Amp., S.P., N.E.C. Plug Type Fuse Connections, 125 V., 2-Wire, Solid Neutral and 60 Amp., D.P. Fuslok Safety Type Switches for Range or Sub-feeder Branches Connected Ahead of Light Main Switch.
BOX. Code Thickness Galvanized Steel with Enclosure for Bell Transformer.
FRONT. Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush and Surface Mounting.



No. SE63126F-X

No. of Branches	15 Amp. 60 Amp.	INSIDE BOX DIMEN., IN.			Std. Pkg.	60 Amperes		Surface Mounting No.	Each
		Width	Ht.	Depth		Approx. Wt. Lb. Std. Pkg.	Flush Mounting No.		
2	1	9	15	3½	2	40	SE6306F-X	SE6306S-X	\$21.50
3	1	12	22½	4	2	70	SE6326F-X	SE6326S-X	25.00
4	1	12	22½	4	2	70	SE6336F-X	SE6336S-X	29.50
5	1	12	22½	4	2	70	SE6346F-X	SE6346S-X	31.50
6	1	12	24½	4	2	80	SE6356F-X	SE6356S-X	33.00
8	1	12	24½	4	2	85	SE6366F-X	SE6366S-X	34.50
10	1	12	26½	4	1	85	SE6386F-X	SE6386S-X	37.50
12	1	12	28½	4	1	85	SE63106F-X	SE63106S-X	40.50
14	1	12	28½	4	1	85	SE63126F-X	SE63126S-X	43.00
14	1	15	35	4	1	90	SE103146F-X	SE103146S-X	\$61.50
16	1	15	35	4	1	90	SE103166F-X	SE103166S-X	66.00
18	1	15	38	4	1	95	SE103186F-X	SE103186S-X	70.00
20	1	15	38	4	1	95	SE103206F-X	SE103206S-X	73.50
8	2	15	30½	4	1	120	SE63866F-X	SE63866S-X	\$49.50
10	2	15	30½	4	1	120	SE631066F-X	SE631066S-X	58.50
12	2	15	30½	4	1	120	SE631266F-X	SE631266S-X	63.50
14	2	17¾	38½	4	1	130	SE1031466F-X	SE1031466S-X	\$75.00
16	2	17¾	38½	4	1	130	SE1031666F-X	SE1031666S-X	79.00

*These are special service equipments with 100 ampere, 125-250 volt, 3-wire, main lugs for new sequence metering with one meter and with main switch controlling lighting and appliance branches only. Range and/or sub-feeder branches

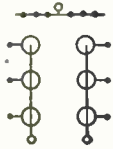
are fed from same main lugs, but they are controlled independently from lighting branches.

Service Equipment furnished without bell transformer, deduct \$1.00.

FA Enclosed Cutouts

Type FBX Safety Type Fuzboxes—One Fuse

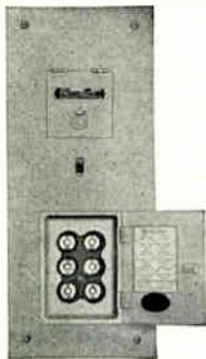
BASES. Made of Sections of Moulded Material.
BRANCHES. 30 Amp., S.P., N.E.C. Plug Type Fuse Connections, 125 V., 2-Wire, Solid Neutral.
MAINS. Lugs Only: 2-Wire, 125 V. for Two and Three Branches; 3-Wire, 125-250 V. for Four Branches and Over.
BOX. Code Thickness Galvanized Steel. Two to 12 Circuits 1½-Inch Gutters; 24 Circuits 3-Inch Gutters, Top and Bottom; 2¼-Inch at Sides.
FRONT. Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush and Surface Mounting. Ring Handle Catch on Door.



No. FBX6F

No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN., IN.			Std. Pkg.	Approx. Wt. Lb. Std. Pkg.	2-Wire Mains		Each
		Width	Ht.	Depth			Flush Mounting No.	Surface Mounting No.	
2	30	7½	8	3	10	50	FBX2F	FBX2S	\$2.20
3	30	7½	8	3	10	60	FBX3F	FBX3S	2.50
3-Wire Mains									
4	30	7½	8	3	6	30	FBX4F	FBX4S	\$2.90
6	42	7½	9½	3	6	40	FBX6F	FBX6S	4.85
8	60	7½	14	3	2	24	FBX8F	FBX8S	7.30
10	60	7½	15½	3	2	28	FBX10F	FBX10S	10.70
12	60	7½	17	3	2	32	FBX12F	FBX12S	14.55
14	100	9½	22	3½	1	45	FBX14F	FBX14S	20.55
16	100	9½	24	3½	1	45	FBX16F	FBX16S	22.10
18	100	9½	26	3½	1	50	FBX18F	FBX18S	23.65
20	100	9½	28	3½	1	50	FBX20F	FBX20S	25.20
22	100	9½	28	3½	1	60	FBX22F	FBX22S	28.10
24	100	9½	30	3½	1	60	FBX24F	FBX24S	31.05

For bell transformer enclosure, switches in any of the above fuzboxes, add \$2.00. This increases the cabinet height 3 inches.



No. FBX66F

With Range Feeder Branch

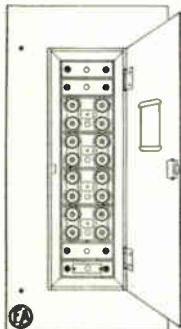
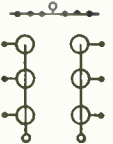
BASES. Made of Sections of Moulded Material.
BRANCHES. 30 Amp., S.P., N.E.C. Plug Type Fuse Connections, 125 V., 2-Wire, Solid Neutral and 60 Amp., D.P., Solid Neutral Safety Fuslok Type Switch for Range Feeder.
MAINS. Lugs Only. 3-Wire, 125-250 V., Solid Neutral.
BOX. Code Thickness Galvanized Steel, 1½-Inch Gutters for 60 Amp.; 3 Inches for 100 Amp. Main Capacity.
FRONT. Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush and Surface Mounting.

No. of Branches	Main Lugs Amp.	Main Lugs Amperes	INSIDE BOX DIMEN., IN.			Std. Pkg.	FLUSH MOUNTING		SURFACE MOUNTING	
			Width	Ht.	Depth		No.	Each	No.	Each
15	60	60	7½	15	3½	2	FL622F	\$8.00	FL622S	\$7.50
2	1	60	7½	19	3½	1	FBX26F	10.40	FBX26S	9.80
4	1	60	7½	19	3½	1	FBX46F	12.00	FBX46S	11.50
6	1	60	7½	20½	3½	1	FBX66F	15.00	FBX66S	14.00
8	1	100	12	28½	4	1	FBX86F	18.50	FBX86S	17.50
10	1	100	12	28½	4	1	FBX106F	24.00	FBX106S	23.00
12	1	100	12	31½	4	1	FBX126F	28.00	FBX126S	27.00

FA Panelboards and Cabinets

Safety Type NR3G—One Fuse

PANELBOARD. Made of Sections of Moulded Material.
BRANCHES. 30 Amp., S.P., N.E.C. Plug Type Fuse Connections for 125 V., 2-Wire, Solid Neutral Circuits.
MAINS. 2 or 3-Wire, 125-250 V., Cable Lugs Only.
BOX. Code Thickness Galvanized Steel, 3-Inch Gutters.
FRONT. Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting unless Surface is Ordered.



No. NR3G16

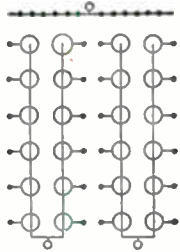
No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN., AND MARKING, IN.			Std. Pkg.	No.	Each
		Width	Ht.	Depth			
4	60	12	13½	4	20	NR3G04	\$16.00
8	60	12	16½	4	25	NR3G08	20.00
12	60	12	19½	4	35	NR3G12	24.00
16	100	12	25½	4	45	NR3G16	30.00
20	100	12	28½	4	50	NR3G20	34.00
24	100	12	34½	4	60	*NR3G24	42.00
28	100	12	37½	4	65	*NR3G28	48.00
32	100	12	40½	4	70	*NR3G32	54.00

*Because of narrow width cabinet, it is recommended that circuit wires be brought into junction box at ceiling and then brought down to cabinet in several large conduits.

FA Safety Type Panelboards and Cabinets

Type N1P-3 and Type N1P-4—One Fuse

Type N1P-3



Type N1P-3

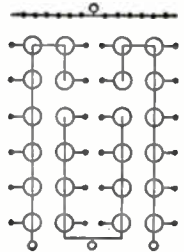
PANELBOARD. BRANCHES.
MAINS. BOX. FRONT.

Made of Sections of Moulded Material. 30 Amp., S.P., N.E.C. Plug Type Fuse Connections Only for 125 V., 2-Wire, Solid Neutral Circuits. 3-Wire, 125-250 V., Solid Neutral. Code Thickness Galvanized Steel, 4 3/8 Inches Deep, 4-Inch Gutters. Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting unless Surface is Ordered.

Type N1P-4

PANELBOARD. BRANCHES.
MAINS. BOX. FRONT.

Made of Sections of Moulded Material. 30 Amp., S.P., N.E.C. Plug Type Fuse Connections Only for 120 V., 2-Wire, Solid Neutral Circuits. 3-Phase, 4-Wire 120-208 V., Solid Neutral. Code Thickness Galvanized Steel, 4 3/8 Inches Deep, 4-Inch Gutters. Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting unless Surface is Ordered.



Type N1P-4

Type N1P-3 Main Cable Lugs Only—Solid Neutral

No. Branches	Main Bus Bar Amperes	INSIDE DIMENSIONS AND MARKING OF BOX		Approx. Wt. Lb.	No.	Each
		Width	Ht.			
4		See Type NR3G Panelboard Prices.				
8		See Type NR3G Panelboard Prices.				
12		See Type NR3G Panelboard Prices.				
16	100	19	21 1/2	85	N1P16-3L100	\$56.00
24	100	19	24 1/2	105	N1P24-3L100	66.00
32	100	19	27 1/2	115	N1P32-3L100	76.00
40	200	19	36 1/2	165	N1P40-3L200	106.00

Type N1P-4 Main Cable Lugs Only—Solid Neutral

No. Branches	Main Bus Bar Amperes	INSIDE DIMENSIONS AND MARKING OF BOX		Approx. Wt. Lb.	No.	Each
		Width	Ht.			
8	60	19	18 1/2	75	N1P08-4L060	\$50.00
16	60	19	24 1/2	105	N1P16-4L060	60.00
24	60	19	27 1/2	115	N1P24-4L060	70.00
32	100	19	30 1/2	135	N1P32-4L100	80.00
40	100	19	36 1/2	165	N1P40-4L100	108.00

Type N1P-3 Switchfuz Safety Type Main Fuse Disconnect—Solid Neutral

No. Branches	Main Bus Bar Amperes	INSIDE DIMENSIONS AND MARKING OF BOX		Approx. Wt. Lb.	No.	Each
		Width	Ht.			
8	60	19	27 1/2	90	N1P08-3F060	\$60.00
16	100	19	36 1/2	125	N1P16-3F100	80.00
24	100	19	39 1/2	140	N1P24-3F100	90.00
32	100	19	42 1/2	150	N1P32-3F100	105.00
40	200	19	51 1/2	195	N1P40-3F200	136.00

Type N1P-4 Switchfuz Safety Type Main Fuse Disconnect—Solid Neutral

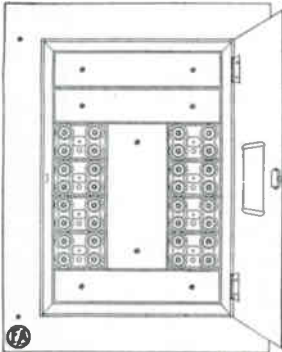
No. Branches	Main Bus Bar Amperes	INSIDE DIMENSIONS AND MARKING OF BOX		Approx. Wt. Lb.	No.	Each
		Width	Ht.			
8	60	19	27 1/2	90	N1P08-4F060	\$70.00
16	60	19	33 1/2	100	N1P16-4F060	84.00
24	60	19	36 1/2	125	N1P24-4F060	94.00
32	100	19	42 1/2	150	N1P32-4F100	110.00
40	100	19	48 1/2	180	N1P40-4F100	140.00

Type N1P-3 Safety Type Fuslok Main Switch—Solid Neutral

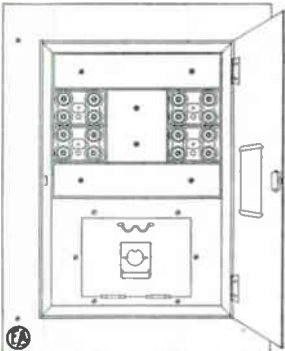
No. Branches	Main Bus Bar Amperes	INSIDE DIMENSIONS AND MARKING OF BOX		Approx. Wt. Lb.	No.	Each
		Width	Ht.			
8	60	19	33 1/2	115	N1P08-3SF060	\$74.00
16	100	19	42 1/2	155	N1P16-3SF100	95.00
24	100	19	45 1/2	170	N1P24-3SF100	108.00
32	100	19	48 1/2	185	N1P32-3SF100	120.00
40	200	19	57 1/2	225	N1P40-3SF200	166.00

Type N1P-4 Safety Type Fuslok Main Switch—Solid Neutral

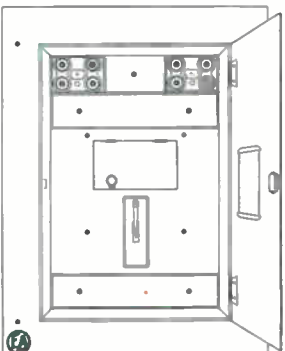
No. Branches	Main Bus Bar Amperes	INSIDE DIMENSIONS AND MARKING OF BOX		Approx. Wt. Lb.	No.	Each
		Width	Ht.			
8	60	19	33 1/2	115	N1P08-4SF060	\$82.00
16	60	19	39 1/2	140	N1P16-4SF060	104.00
24	60	19	42 1/2	155	N1P24-4SF060	120.00
32	100	19	48 1/2	185	N1P32-4SF100	132.00
40	100	19	54 1/2	210	N1P40-4SF100	176.00



Type N1P-3L and Type N1P-4L

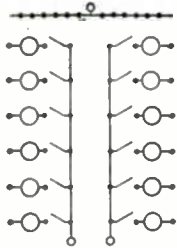


Type N1P-3F and Type N1P-4F



Type N1P-3SF and Type N1P-4SF

FA Safety Type Panelboards and Cabinets
Type LNT1P-3 and Type LNT1P-4—Switch and One Fuse—One Door Construction



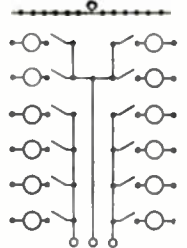
Type LNT1P-3

PANELBOARD. BRANCHES.
MAINS. BOX. FRONT.

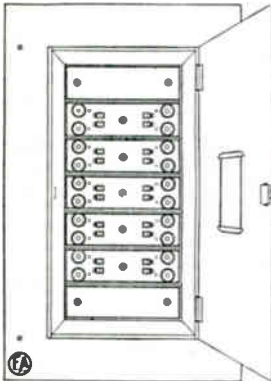
PANELBOARD. BRANCHES.
MAINS. BOX. FRONT.

Type LNT1P-3
 Made of Sections of Brown Bakelite. 30 Amp, S.P. Tumbler Switches with N.E.C. Plug Type Fuse Connection for 125 V., 2-Wire, Solid Neutral Circuits. 3-Wire, 125-250 V., Solid Neutral. Code Thickness Galvanized Steel, 4 3/8 Inches Deep, 4-Inch Gutters. Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting unless Surface is Ordered.

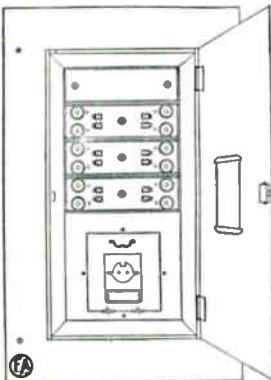
Type LNT1P-4
 Made of Sections of Brown Bakelite. 30 Amp., S.P. Tumbler Switches with N.E.C. Plug Type Fuse Connection for 120 V., 2-Wire, Solid Neutral Circuits. 3-Phase, 4-Wire; 120-208 V., Solid Neutral. Code Thickness Galvanized Steel, 4 3/8 Inches Deep, 4-Inch Gutters. Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting unless Surface is Ordered.



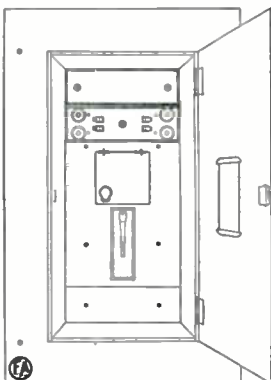
Type LNT1P-4



Type LNT1P-3L and Type LNT1P-4L



Type LNT1P-3F and Type LNT1P-4F



Type LNT1P-3SF and Type LNT1P-4SF

Type LNT1P-3 Main Cable Lugs Only—Solid Neutral

No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. (—AND MARKING, IN.)		Approx. Wt. Lb.	No.	Each
		Width	Ht.			
4	60	19	15 1/2	37	LNT1P04-3L060	\$34.00
8	60	19	18 1/2	44	LNT1P08-3L060	40.00
12	60	19	21 1/2	51	LNT1P12-3L060	50.00
16	100	19	27 1/2	65	LNT1P16-3L100	74.00
20	100	19	30 1/2	72	LNT1P20-3L100	84.00
24	100	19	33 1/2	79	LNT1P24-3L100	94.00
28	100	19	39 1/2	94	LNT1P28-3L100	104.00
32	100	19	42 1/2	100	LNT1P32-3L100	114.00
36	200	19	45 1/2	170	LNT1P36-3L200	140.00
40	200	19	48 1/2	180	LNT1P40-3L200	150.00

Type LNT1P-4 Main Cable Lugs Only—Solid Neutral

8	60	19	21 1/2	50	LNT1P08-4L060	\$52.00
12	60	19	24 1/2	57	LNT1P12-4L060	62.00
16	60	19	27 1/2	65	LNT1P16-4L060	78.00
20	60	19	30 1/2	72	LNT1P20-4L060	88.00
24	60	19	33 1/2	79	LNT1P24-4L060	100.00
28	100	19	39 1/2	94	LNT1P28-4L100	110.00
32	100	19	42 1/2	100	LNT1P32-4L100	120.00
36	100	19	45 1/2	170	LNT1P36-4L100	146.00
40	100	19	48 1/2	180	LNT1P40-4L100	156.00

Type LNT1P-3 Switchfuz Safety Type Main Fuse Disconnect—Solid Neutral

4	60	19	24 1/2	70	LNT1P04-3F060	\$46.00
8	60	19	27 1/2	80	LNT1P08-3F060	58.00
12	60	19	30 1/2	90	LNT1P12-3F060	70.00
16	100	19	36 1/2	115	LNT1P16-3F100	90.00
20	100	19	39 1/2	125	LNT1P20-3F100	102.00
24	100	19	42 1/2	160	LNT1P24-3F100	114.00
28	100	19	48 1/2	185	LNT1P28-3F100	126.00
32	100	19	51 1/2	197	LNT1P32-3F100	138.00
36	200	19	57 1/2	225	LNT1P36-3F200	166.00
40	200	19	60 1/2	255	LNT1P40-3F200	178.00

Type LNT1P-4 Switchfuz Safety Type Main Fuse Disconnect—Solid Neutral

8	60	19	27 1/2	80	LNT1P08-4F060	\$66.00
12	60	19	30 1/2	90	LNT1P12-4F060	78.00
16	60	19	33 1/2	100	LNT1P16-4F060	96.00
20	60	19	36 1/2	115	LNT1P20-4F060	108.00
24	60	19	39 1/2	125	LNT1P24-4F060	120.00
28	100	19	48 1/2	185	LNT1P28-4F100	132.00
32	100	19	51 1/2	197	LNT1P32-4F100	148.00
36	100	19	54 1/2	210	LNT1P36-4F100	170.00
40	100	19	57 1/2	225	LNT1P40-4F100	182.00

Type LNT1P-3 Safety Type Fuslok Main Switch—Solid Neutral

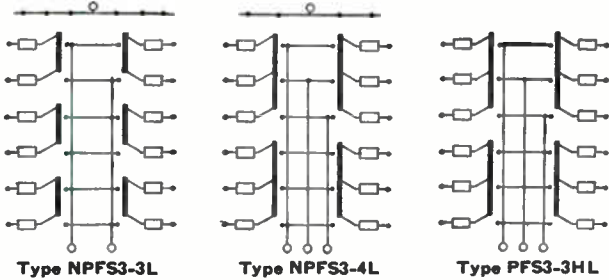
4	60	19	30 1/2	93	LNT1P04-3SF060	\$64.00
8	60	19	33 1/2	103	LNT1P08-3SF060	74.00
12	60	19	36 1/2	113	LNT1P12-3SF060	86.00
16	100	19	42 1/2	160	LNT1P16-3SF100	110.00
20	100	19	45 1/2	172	LNT1P20-3SF100	122.00
24	100	19	48 1/2	183	LNT1P24-3SF100	134.00
28	100	19	54 1/2	207	LNT1P28-3SF100	146.00
32	100	19	57 1/2	220	LNT1P32-3SF100	158.00
36	200	19	66 1/2	283	LNT1P36-3SF200	206.00
40	200	19	69 1/2	297	LNT1P40-3SF200	218.00

Type LNT1P-4 Safety Type Fuslok Main Switch—Solid Neutral

8	60	19	33 1/2	103	LNT1P08-4SF060	\$88.00
12	60	19	36 1/2	113	LNT1P12-4SF060	100.00
16	60	19	39 1/2	125	LNT1P16-4SF060	122.00
20	60	19	42 1/2	160	LNT1P20-4SF060	136.00
24	60	19	45 1/2	172	LNT1P24-4SF060	148.00
28	100	19	54 1/2	207	LNT1P28-4SF100	162.00
32	100	19	57 1/2	220	LNT1P32-4SF100	176.00
36	100	19	60 1/2	240	LNT1P36-4SF100	222.00
40	100	19	63 1/2	260	LNT1P40-4SF100	234.00

FA Safety Type PFS3-L Pulfuzswitch Panelboards and Cabinets

Distribution Type



PANELBOARD. Made of Sections of Brown Bakelite.
BRANCHES. 30 Amp., 250 V. Pulfuzswitch Units with N.E.C. Cartridge Type Fuse Connections.
MAINS. Cable Lugs Only.
BOX. Code Thickness Galvanized Steel, 4-Inch Gutters for 200-Amp. Mains or Less; 6-Inch for 400-Amp. Mains.
FRONT. Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Surface Mounting unless Flush is Ordered.

*Type NPFS3-3L 125/250 V., 3-Wire, Solid Neutral Mains and Branches

Single Branch										
No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. (AND MARKING, IN.)			Approx. Wt. Lb.	No.	Each			
		Width	Ht.	Depth						
4	100	12	19½	4	35	NPFS304-3L100	\$58.00			
5	100	12	22½	4	40	NPFS305-3L100	66.50			
6	200	12	25½	4	45	NPFS306-3L200	75.00			
7	200	12	28½	4	50	NPFS307-3L200	83.50			
Double Branch										
8	200	19	24½	4¾	70	NPFS308-3L200	\$92.00			
10	200	19	27½	4¾	80	NPFS310-3L200	109.00			
12	400	24	33	5	100	NPFS312-3L400	147.00			
14	400	24	36	5	115	NPFS314-3L400	164.00			
16	400	24	39	5	130	NPFS316-3L400	181.00			

Type NPFS3-4L 120/208 V., 3-Phase, 4-Wire, Solid Neutral Mains and Branches

Single Branch										
No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. (AND MARKING, IN.)			Approx. Wt. Lb.	No.	Each			
		Width	Ht.	Depth						
4	100	12	25½	4	45	NPFS304-4L100	\$58.00			
5	100	12	28½	4	50	NPFS305-4L100	66.50			
6	200	12	31½	4	55	NPFS306-4L200	75.00			
7	200	12	37½	4	65	NPFS307-4L200	83.50			
Double Branch										
8	200	19	30½	4¾	90	NPFS308-4L200	\$92.00			
10	200	19	33½	4¾	100	NPFS310-4L200	109.00			
12	400	26	42	5	135	NPFS312-4L400	147.00			
14	400	26	45	5	145	NPFS314-4L400	164.00			
16	400	26	48	5	155	NPFS316-4L400	181.00			

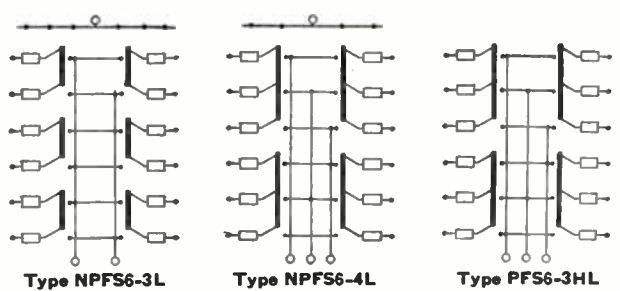
Type PFS3-3HL 230 V., 3-Phase, 3-Wire Mains and Branches

Single Branch										
No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. (AND MARKING, IN.)			Approx. Wt. Lb.	No.	Each			
		Width	Ht.	Depth						
4	60	12	22½	4	40	PFS304-3HL060	\$44.00			
5	100	12	25½	4	45	PFS305-3HL100	52.50			
6	100	12	31½	4	55	PFS306-3HL100	61.00			
7	100	12	34½	4	60	PFS307-3HL100	69.50			
Double Branch										
8	100	19	27½	4¾	80	PFS308-3HL100	\$78.00			
10	200	19	30½	4¾	90	PFS310-3HL200	95.00			
12	200	19	33½	4¾	100	PFS312-3HL200	112.00			
14	200	19	36½	4¾	115	PFS314-3HL200	129.00			
16	200	19	39½	4¾	125	PFS316-3HL200	146.00			

*Can also be used for 250 v., 3-phase mains and branches with one phase grounded.

FA Safety Type PFS6-L Pulfuzswitch Panelboards and Cabinets

Convertible Distribution Type



PANELBOARD. Made of Sections of Brown Bakelite.
BRANCHES. 60 Amp., 250 V. Pulfuzswitch Units with N.E.C. Cartridge Type Fuse Connections.
MAINS. Cable Lugs Only.
BOX. Code Thickness Galvanized Steel, 4-Inch Gutters for 200-Amp. Mains or Less; 6-Inch for 400-Amp. Mains; 8-Inch for 600-Amp. Mains.
FRONT. Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Surface Mounting unless Flush is Ordered.

*Type NPFS6-3L 125/250 V., 3-Wire, Solid Neutral Mains and Branches

Single Branch										
No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. (AND MARKING, IN.)			Approx. Wt. Lb.	No.	Each			
		Width	Ht.	Depth						
4	200	12	22½	4	40	NPFS604-3L200	\$72.00			
5	200	12	25½	4	45	NPFS605-3L200	84.00			
6	400	15¾	36	5	85	NPFS606-3L400	117.00			
7	400	15¾	39	5	95	NPFS607-3L400	129.00			
Double Branch										
8	400	25	36	5	115	NPFS608-3L400	\$141.00			
10	600	30	43	6	135	NPFS610-3L600	190.00			
12	600	30	46	6	150	NPFS612-3L600	214.00			
14	600	30	49	6	165	NPFS614-3L600	238.00			
16	600	30	52	6	180	NPFS616-3L600	262.00			

Type NPFS6-4L 120/208 V., 3-Phase, 4-Wire, Solid Neutral Mains and Branches

Single Branch										
No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. (AND MARKING, IN.)			Approx. Wt. Lb.	No.	Each			
		Width	Ht.	Depth						
4	200	12	28½	4	50	NPFS604-4L200	\$90.00			
5	200	12	34½	4	60	NPFS605-4L200	106.50			
6	400	15¾	45	5	80	NPFS606-4L400	144.00			
7	400	15¾	51	5	90	NPFS607-4L400	160.50			
Double Branch										
8	400	27	42	5	130	NPFS608-4L400	\$177.00			
10	600	32	49	6	150	NPFS610-4L600	235.00			
12	600	32	55	6	165	NPFS612-4L600	268.00			
14	600	32	58	6	175	NPFS614-4L600	301.00			
16	600	32	64	6	190	NPFS616-4L600	334.00			

Type PFS6-3HL 230 V., 3-Phase, 3-Wire Mains and Branches

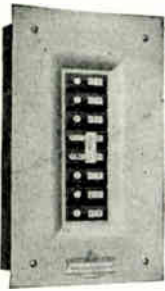
Single Branch										
No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. (AND MARKING, IN.)			Approx. Wt. Lb.	No.	Each			
		Width	Ht.	Depth						
4	100	12	28½	4	50	PFS604-3HL100	\$76.00			
5	100	12	31½	4	55	PFS605-3HL100	92.50			
6	200	12	37½	4	65	PFS606-3HL200	109.00			
7	200	12	43½	4	75	PFS607-3HL200	125.50			
Double Branch										
8	200	19	30½	4¾	90	PFS608-3HL200	\$142.00			
10	200	19	36½	4¾	100	PFS610-3HL200	175.00			
12	200	19	39½	4¾	115	PFS612-3HL200	208.00			
14	400	27	51	5	170	PFS614-3HL400	251.00			
16	400	27	54	5	185	PFS616-3HL400	284.00			

*Can also be used for 250 v., 3-phase mains and branches with one phase grounded.

For 30-ampere circuits on Type NPFS-3L, deduct \$3.50 each; for Types NPFS-4L and PFS-3HL, deduct \$8.00 each.

FA Service Equipment

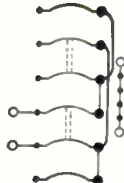
Type A.C. Circuit Breakers



No. LC60-3B5F



With All S.P. Branches



With S.P. and 1 D.P. Branches

- BASE.** Steel Mounting Back with Adjustment.
MAINS. Type A.C. 120 V. Main Breaker, with Insulated, Groundable Solid Neutral. S.P. for 2-Wire, 115 V., A.C. and Double Pole, Individual Trip, for 3-Wire 115-230 V., A.C. Feeder Systems.
BRANCHES. Type A.C. 120 V. Circuit Breakers. 15 Amp. S.P. for 2-Wire Solid Neutral Circuits and 35 Amp. D.P., Individual Trip, for 3-Wire Solid Neutral Circuits.
BOX. Code Thickness Galvanized Steel.
COVER. Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting, F, unless Surface Mounting, S, is Ordered.

2-Wire, 115 V., A.C., Solid Neutral Feeder Main Breakers

No. of Branches	15		Mains Amp.	INSIDE BOX DIMEN., IN.			Approx. Wt. Lb.	No.	Each
	Total	S.P.		D.P.	Width	Ht.				Depth
2	1	1	35	7 1/2	9	3 1/2	8	LC20-2B3F	\$8.50
3	3	3	35	7 1/2	9	3 1/2	8	LC30-2B3F	9.50
4	4	4	35	7 1/2	11	3 1/2	10	LC40-2B3F	10.50

3-Wire, 115-230 V., A.C. Solid Neutral Feeder Main Breakers

No. of Branches	15		Mains Amp.	INSIDE BOX DIMEN., IN.			Approx. Wt. Lb.	No.	Each
	Total	S.P.		D.P.	Width	Ht.				Depth
2	1	1	35	7 1/2	11	3 1/2	10	LC11-3B3F	\$11.50
		2	50	7 1/2	11	3 1/2	10	LC02-3B5F	12.50
3	3	3	35	7 1/2	11	3 1/2	10	LC30-3B3F	11.00
	2	1	50	7 1/2	11	3 1/2	10	LC21-3B5F	12.00
	1	2	50	7 1/2	13	3 1/2	12	LC12-3B5F	13.50
4	4	4	35	7 1/2	11	3 1/2	10	LC40-3B3F	11.50
	3	1	50	7 1/2	11	3 1/2	12	LC31-3B5F	13.00
5	5	5	50	7 1/2	13	3 1/2	12	LC50-3B5F	12.50
	4	1	50	7 1/2	13	3 1/2	12	LC41-3B5F	14.00
6	6	6	50	7 1/2	13	3 1/2	12	LC60-3B5F	13.50
8	8	8	50	7 1/2	15	3 1/2	14	LC80-3B5F	19.55

*Change F to S for surface mounting.

All s.p. branches will be furnished with 15-amp., calibration breakers and all d.p. branches will be furnished with 35-amp., calibration, individual trip breakers, unless order calls for other capacities (20, 25, or 35-amp., s.p. instead of 15 amp. and 15, 20, 25, or 50-amp., d.p. instead of 35 amp.) in which case no extra charge will be made.

Main breaker capacity is limited to 50 amp. maximum.

Service Equipment with Type A.C. Circuit Breakers and Bonded Solid Neutral

(Box and Cover Specifications Above)

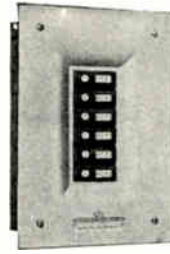
Total	BRANCHES		Mains Amp.	INSIDE BOX DIMEN., IN.			Approx. Wt. Lb.	No.	Each
	15 Amp., S.P.	15 Amp., D.P.		Width	Ht.	Depth			
1	15 Amp., S. P.		4 1/2	7	3	5	LC10-15F	\$5.00	
2	15 Amp., S. P.		4 1/2	7	3	5	LC20-15F	6.00	
1	15 Amp., D.P., Ind. Trip		4 1/2	7	3	5	LC01-15F	6.00	
3	15 Amp., S. P.		4 1/2	7	3	6	LC30-15F	7.00	

Deduct 50 cents if neutral is omitted.

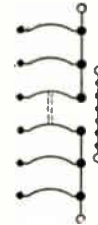
Circuit breakers for 20 and 25 amp. furnished at same prices; 35 and 50 amp. breakers, in 7 1/2x7x3 1/2-inch box.

FA Service Equipment

Type A.C. Circuit Breakers



No. SE60-3L7F



With All S.P. or S.P. and 1 D.P. Branch



With S.P. and 2 D.P. Branches



With S.P. and 3 or More D.P. or All D.P. Branches

- BASE.** Steel Mounting Back with Adjustment.
MAINS. Lugs Only, with Solid Neutral Bonded to Mounting Back. For 2-Wire, 115 V., A.C. and 3-Wire, 115-230 V., A.C. Feeder Systems.
BRANCHES. Type A.C. 120 V. Circuit Breakers. 15 Amp. S.P. for 2-Wire Solid Neutral Circuits and 35 Amp. D.P., Individual Trip, for 3-Wire Solid Neutral Circuits.
BOX. Code Thickness Galvanized Steel.
COVER. Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting, F, unless Surface Mounting, S, is Ordered.

2-Wire, 115 V., A.C., Solid Neutral Feeder Main Lugs

No. of Branches	15		Mains Amp.	INSIDE BOX DIMEN., IN.			Approx. Wt. Lb.	*No.	Each
	Total	S.P.		D.P.	Width	Ht.				Depth
2	2	2	35	7 1/2	7	3 1/2	6	SE20-2L3F	\$7.00
3	3	3	35	7 1/2	9	3 1/2	8	SE30-2L3F	8.00
4	4	4	35	7 1/2	9	3 1/2	8	SE40-2L3F	9.00

3-Wire, 115-230 V., A.C. Solid Neutral Feeder Main Lugs

No. of Branches	15		Mains Amp.	INSIDE BOX DIMEN., IN.			Approx. Wt. Lb.	*No.	Each
	Total	S.P.		D.P.	Width	Ht.				Depth
2	2	2	70	7 1/2	9	3 1/2	6	SE20-3L7F	\$8.00
	1	1	70	7 1/2	9	3 1/2	8	SE11-3L7F	9.00
	2	2	70	7 1/2	9	3 1/2	8	SE02-3L7F	9.50
3	3	3	70	7 1/2	9	3 1/2	8	SE30-3L7F	9.00
	2	1	70	7 1/2	9	3 1/2	8	SE21-3L7F	9.00
	1	2	70	7 1/2	11	3 1/2	10	SE12-3L7F	10.50
	3	3	70	9	14	3 1/2	12	SE03-3L7F	11.65
	3	3	100	9	16	3 1/2	14	SE03-3L10F	23.50
4	4	4	70	7 1/2	9	3 1/2	8	SE40-3L7F	9.00
	3	1	70	7 1/2	11	3 1/2	10	SE31-3L7F	10.00
	2	2	70	7 1/2	11	3 1/2	10	SE22-3L7F	11.50
	1	3	70	9	16	3 1/2	14	SE13-3L7F	12.65
	1	3	100	9	18	3 1/2	16	SE13-3L10F	24.50
	4	4	70	9	16	3 1/2	14	SE04-3L7F	13.80
	4	4	100	9	18	3 1/2	16	SE04-3L10F	25.50
5	5	5	70	7 1/2	11	3 1/2	10	SE50-3L7F	10.00
	4	1	70	7 1/2	11	3 1/2	10	SE41-3L7F	11.00
	3	2	70	7 1/2	13	3 1/2	12	SE32-3L7F	12.50
	2	3	70	9	16	3 1/2	14	SE23-3L7F	13.65
	2	3	100	9	18	3 1/2	16	SE23-3L10F	25.50
	1	4	100	9	20	3 1/2	18	SE14-3L10F	27.00
	5	5	100	9	20	3 1/2	18	SE05-3L10F	28.15
6	6	6	70	7 1/2	11	3 1/2	10	SE60-3L7F	11.00
	5	1	70	7 1/2	13	3 1/2	12	SE51-3L7F	12.00
	4	2	70	7 1/2	13	3 1/2	12	SE42-3L7F	13.50
	3	3	100	9	20	3 1/2	18	SE33-3L10F	27.00
	2	4	100	9	20	3 1/2	18	SE24-3L10F	28.00
	1	5	100	9	22	3 1/2	24	SE15-3L10F	29.15
	6	6	100	9	22	3 1/2	24	SE06-3L10F	30.30

*Change F to S for surface mounting.

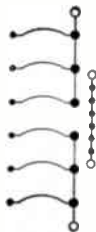
All s.p. branches will be furnished with 15-amp., calibration breakers and all d.p. branches will be furnished with 35 amp., calibration, individual trip breakers, unless order calls for other capacities (20, 25, or 35-amp., s.p. instead of 15 amp. and 15, 20, 25, or 50-amp., d.p. instead of 35 amp.) in which case no extra charge will be made, unless increased capacity main bus bar (100 amp., maximum) is required.

FA Circuit Breaker Panelboards

Type A.C. Load Centers



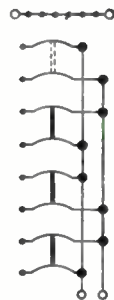
No. LC060-3L7F



With All S.P. or S.P. and 1 D.P. Branch



With S.P. and 2 D.P. Branches



With S.P. and 3 or More D.P. or All D.P. Branches



No. LC100-3L7F

- BASE.** Steel Mounting Back with Adjustment.
- MAINS.** Lugs Only, with Insulated, groundable Solid Neutral.
- BRANCHES.** Type A.C. 120 V. Circuit Breakers. 15 Amp., S.P. for 2-Wire Solid Neutral Circuits and 35 Amp., D.P., Individual Trip, for 3-Wire Solid Neutral Circuits.
- BOX.** Code Thickness Galvanized Steel.
- COVER.** Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting, F, unless Surface Mounting, S, is Ordered.

2-Wire, 115 V., A.C. Solid Neutral Feeder Main Lugs

Total	No. of BRANCHES			INSIDE BOX DIMEN., IN.			Approx. Wt. Lb.	No.	Each
	15 Amp. S.P.	35 Amp. D.P.	Mains Amp.	Width	Ht.	Depth			
2	2		35	7 1/2	7	3 1/2	6	LC020-2L3F	\$7.00
3	3		35	7 1/2	9	3 1/2	8	LC030-2L3F	8.00
4	4		35	7 1/2	9	3 1/2	8	LC040-2L3F	9.00

3-Wire, 115-230 V., A.C. Solid Neutral Feeder Main Lugs

Total	No. of BRANCHES			INSIDE BOX DIMEN., IN.			Approx. Wt. Lb.	No.	Each
	15 Amp. S.P.	35 Amp. D.P.	Mains Amp.	Width	Ht.	Depth			
7	7		70	7 1/2	13	3 1/2	12	LC070-3L7F	\$12.00
	6	1	70	7 1/2	13	3 1/2	12	LC061-3L7F	13.00
	5	2	70	7 1/2	15	3 1/2	14	LC052-3L7F	14.50
	4	3	100	9	20	3 1/2	18	LC043-3L10F	28.00
		7	100	9	24	3 1/2	22	LC007-3L10F	33.45

3-Wire, 115-230 V., A.C. Solid Neutral Feeder Main Lugs

Total	No. of BRANCHES			INSIDE BOX DIMEN., IN.			Approx. Wt. Lb.	No.	Each
	15 Amp. S.P.	35 Amp. D.P.	Mains Amp.	Width	Ht.	Depth			
2	2		70	7 1/2	7	3 1/2	6	LC020-3L7F	\$8.00
	1	1	70	7 1/2	9	3 1/2	8	LC011-3L7F	9.00
		2	70	7 1/2	9	3 1/2	8	LC002-3L7F	9.50
3	3		70	7 1/2	9	3 1/2	8	LC030-3L7F	9.00
	2	1	70	7 1/2	9	3 1/2	8	LC021-3L7F	9.00
	1	2	70	7 1/2	11	3 1/2	10	LC012-3L7F	10.50
		3	70	9	14	3 1/2	12	LC003-3L7F	11.65
		3	100	9	16	3 1/2	14	LC003-3L10F	24.00
4	4		70	7 1/2	9	3 1/2	8	LC040-3L7F	9.00
	3	1	70	7 1/2	11	3 1/2	10	LC031-3L7F	10.00
	2	2	70	7 1/2	11	3 1/2	10	LC022-3L7F	11.50
	1	3	70	9	16	3 1/2	14	LC013-3L7F	12.65
		4	70	9	16	3 1/2	14	LC004-3L7F	13.80
		4	100	9	18	3 1/2	16	LC004-3L10F	26.00

3-Wire, 115-230 V., A.C. Solid Neutral Feeder Main Lugs

Total	No. of BRANCHES			INSIDE BOX DIMEN., IN.			Approx. Wt. Lb.	No.	Each
	15 Amp. S.P.	35 Amp. D.P.	Mains Amp.	Width	Ht.	Depth			
8	8		70	7 1/2	13	3 1/2	12	LC080-3L7F	13.00
	7	1	70	7 1/2	15	3 1/2	14	LC071-3L7F	14.50
	6	2	70	7 1/2	15	3 1/2	14	LC062-3L7F	15.50
	6	2	100	9	20	3 1/2	18	LC062-3L10F	28.00
	5	3	100	9	22	3 1/2	20	LC053-3L10F	29.00
	4	4	100	9	22	3 1/2	20	LC044-3L10F	30.00
		8	100	9	26	3 1/2	25	LC008-3L10F	35.60
10	10		70	7 1/2	15	3 1/2	14	LC100-3L7F	19.55
	10		100	9	18	3 1/2	16	LC100-3L10F	28.00
	8	2	100	9	20	3 1/2	22	LC082-3L10F	30.00
	6	4	100	9	24	3 1/2	22	LC064-3L10F	33.00

4-Wire, 115-230 V., A.C. Solid Neutral Feeder Main Lugs

Total	No. of BRANCHES			INSIDE BOX DIMEN., IN.			Approx. Wt. Lb.	No.	Each
	15 Amp. S.P.	35 Amp. D.P.	Mains Amp.	Width	Ht.	Depth			
5	5		70	7 1/2	11	3 1/2	10	LC050-3L7F	10.00
	4	1	70	7 1/2	11	3 1/2	10	LC041-3L7F	11.00
	3	2	70	7 1/2	13	3 1/2	12	LC032-3L7F	12.50
	2	3	70	9	16	3 1/2	14	LC023-3L7F	13.65
	2	3	100	9	18	3 1/2	16	LC023-3L10F	26.00
		5	100	9	20	3 1/2	18	LC005-3L10F	28.15
6	6		70	7 1/2	11	3 1/2	10	LC060-3L7F	11.00
	5	1	70	7 1/2	13	3 1/2	12	LC051-3L7F	12.00
	4	2	70	7 1/2	13	3 1/2	12	LC042-3L7F	13.50
	3	3	100	9	20	3 1/2	18	LC033-3L10F	27.00
	2	4	100	9	20	3 1/2	18	LC24-3L10F	28.00
		6	100	9	22	3 1/2	20	LC006-3L10F	30.30

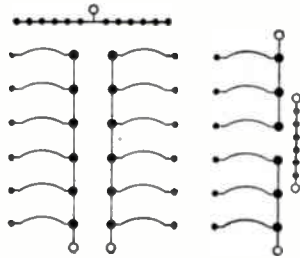
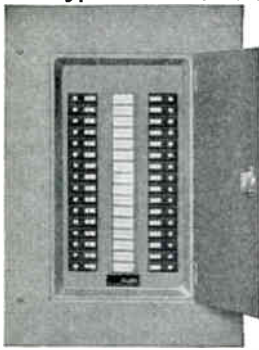
4-Wire, 120-208 V., A.C. Solid Neutral Feeder Main Lugs

Total	No. of BRANCHES			INSIDE BOX DIMEN., IN.			Approx. Wt. Lb.	No.	Each
	15 Amp. S.P.	35 Amp. D.P.	Mains Amp.	Width	Ht.	Depth			
6	6		70	7 1/2	13	3 1/2	12	LC060-4L7F	\$26.00
	9	9	70	7 1/2	17	3 1/2	16	LC090-4L7F	29.00
	10	10	70	7 1/2	17	3 1/2	16	LC100-4L7F	30.00
	12	12	70	7 1/2	19	3 1/2	18	LC120-4L7F	32.00
	15	15	70	9	22	3 1/2	20	LC150-4L7F	36.00
	16	16	70	9	24	3 1/2	22	LC160-4L7F	37.00

All items are listed and approved by Underwriters' Laboratories as panelboards suitable for use as service equipment.

All s.p. branches will be furnished with 15 amp., calibration breakers and all d.p. branches will be furnished with 35 amp., calibration, individual trip breakers, unless order calls for other capacities (20, 25, or 35 amp., s.p. instead of 15 amp. and 15, 20, 25, or 50 amp., d.p. instead of 35 amp.) in which case no extra charge will be made, unless increased capacity main bus bar (100 amp., maximum) is required.

FA Safety Type NAC1B-3 Circuit Breaker
Panelboards and Cabinets
 Type A.C. One Pole Breaker—Solid Neutral



Type NAC1B-3L
BASE. Mounting Back with Standard Adjustment.
MAINS. For 3-Wire, 115-230 V., A.C. Feeder Systems with Insulated Solid Neutral Plate on Mounting Back.
BRANCHES. Type A.C. 120 V. Circuit Breaker. 15 Amp., S.P. for 2-Wire Solid Neutral Circuits.
BOX. Code Thickness Galvanized Steel. Gutters as Noted.
FRONT. Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting unless Surface Is Ordered.

Main Cable Lugs Only—Solid Neutral
 Single Row—3-Inch Gutters

No.	Main Branch Amperes	INSIDE BOX DIMEN. (AND MARKING, IN.)			Wt. Lb.	No.	Each
		Width	Ht.	Depth			
4	70	12	12 1/2	4	26	NAC1B04-3L07	\$38.00
6	70	12	14 1/2	4	30	NAC1B06-3L07	42.00
8	70	12	16 1/2	4	34	NAC1B08-3L07	48.00
10	70	12	18 1/2	4	38	NAC1B10-3L07	54.00
*12	100	12	20 1/2	4	45	NAC1B12-3L10	62.00
*14	100	12	22 1/2	4	50	NAC1B14-3L10	68.00
*16	100	12	24 1/2	4	55	NAC1B16-3L10	74.00
*18	100	12	26 1/2	4	60	NAC1B18-3L10	80.00
Double Row—4-Inch Gutters							
*12	100	19	18 1/2	4 3/4	58	NAC1B12-3L10	62.00
*14	100	19	18 1/2	4 3/4	59	NAC1B14-3L10	68.00
*16	100	19	21 1/2	4 3/4	67	NAC1B16-3L10	74.00
*18	100	19	21 1/2	4 3/4	68	NAC1B18-3L10	80.00
20	100	19	21 1/2	4 3/4	69	NAC1B20-3L10	84.00
22	100	19	24 1/2	4 3/4	76	NAC1B22-3L10	90.00
24	100	19	24 1/2	4 3/4	77	NAC1B24-3L10	94.00
26	100	19	27 1/2	4 3/4	85	NAC1B26-3L10	100.00
28	100	19	30 1/2	4 3/4	86	NAC1B28-3L10	104.00
30	100	19	30 1/2	4 3/4	94	NAC1B30-3L10	110.00
32	100	19	30 1/2	4 3/4	95	NAC1B32-3L10	114.00
34	200	19	33 1/2	4 3/4	98	NAC1B34-3L20	136.00
36	200	19	33 1/2	4 3/4	103	NAC1B36-3L20	140.00
38	200	19	33 1/2	4 3/4	104	NAC1B38-3L20	146.00
40	200	19	36 1/2	4 3/4	105	NAC1B40-3L20	150.00

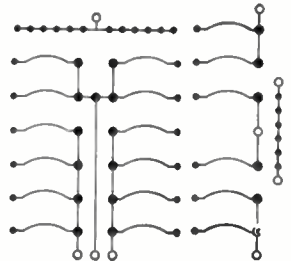
Main Automatic Circuit Breaker—Solid Neutral
 Single Row—3-Inch Gutters

No.	Main Branch Amperes	INSIDE BOX DIMEN. (AND MARKING, IN.)			Wt. Lb.	No.	Each
		Width	Ht.	Depth			
4	50	12	14 1/2	4	30	NAC1B04-3AB05	54.00
6	50	12	16 1/2	4	34	NAC1B06-3AB05	58.00
8	50	12	18 1/2	4	38	NAC1B08-3AB05	64.00
10	50	12	20 1/2	4	42	NAC1B10-3AB05	70.00
Double Row—4-Inch Gutters							
12	100	19	30 1/2	5 1/2	85	NAC1B12-3AB10	97.00
14	100	19	33 1/2	5 1/2	94	NAC1B14-3AB10	103.00
16	100	19	33 1/2	5 1/2	95	NAC1B16-3AB10	109.00
18	100	19	33 1/2	5 1/2	96	NAC1B18-3AB10	115.00
20	100	19	36 1/2	5 1/2	103	NAC1B20-3AB10	119.00
22	100	19	36 1/2	5 1/2	104	NAC1B22-3AB10	125.00
24	100	19	36 1/2	5 1/2	105	NAC1B24-3AB10	129.00
26	100	19	39 1/2	5 1/2	112	NAC1B26-3AB10	135.00
28	100	19	42 1/2	5 1/2	121	NAC1B28-3AB10	139.00
30	100	19	42 1/2	5 1/2	122	NAC1B30-3AB10	145.00
32	100	19	42 1/2	5 1/2	123	NAC1B32-3AB10	149.00
34	200	19	51 1/2	7	175	NAC1B34-3AB20	242.00
36	200	19	51 1/2	7	176	NAC1B36-3AB20	246.00
38	200	19	51 1/2	7	177	NAC1B38-3AB20	252.00
40	200	19	54 1/2	7	190	NAC1B40-3AB20	256.00

*Furnished in single row type, unless two-row is specified.
 Prices are based on 15-amp. s.p. breakers; 20, 25, 35, and 50-amp. s.p. breakers supplied at same prices except when increased capacity bus bars are required.

For each d.p. breaker substituted for not more than two pair of s.p. breakers, add \$1.00 each. D.p. breakers have individual trip.

FA Safety Type NAC1B-4 Circuit Breaker
Panelboards and Cabinets
 Type A.C. One Pole Breaker—Solid Neutral



Type NAC1B-4AB
BASE. Mounting Back with Standard Adjustment.
MAINS. For 4-Wire, 120-208 V., A.C. Feeder Systems with Insulated Solid Neutral Plate on Mounting Back.
BRANCHES. Type A.C. 120 V. Circuit Breaker. 15 Amp., S.P. for 2-Wire Solid Neutral Circuits.
BOX. Code Thickness Galvanized Steel. Gutters as Noted.
FRONT. Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting unless Surface Is Ordered.

Main Cable Lugs Only—Solid Neutral
 Single Row—3-Inch Gutters

No.	Main Branch Amperes	INSIDE BOX DIMEN. (AND MARKING, IN.)			Wt. Lb.	No.	Each
		Width	Ht.	Depth			
6	70	12	16 1/2	4	30	NAC1B06-4L07	\$46.00
9	70	12	20 1/2	4	34	NAC1B09-4L07	57.00
*12	70	12	22 1/2	4	45	NAC1B12-4L07	66.00
*14	70	12	24 1/2	4	50	NAC1B14-4L07	72.00
*16	100	12	26 1/2	4	55	NAC1B16-4L10	78.00
Double Row—4-Inch Gutters							
*12	70	19	18 1/2	4 3/4	58	NAC1B12-4L07	66.00
*14	70	19	21 1/2	4 3/4	59	NAC1B14-4L07	72.00
*16	100	19	21 1/2	4 3/4	67	NAC1B16-4L10	78.00
18	100	19	21 1/2	4 3/4	68	NAC1B18-4L10	84.00
20	100	19	24 1/2	4 3/4	69	NAC1B20-4L10	88.00
22	100	19	24 1/2	4 3/4	76	NAC1B22-4L10	94.00
24	100	19	24 1/2	4 3/4	77	NAC1B24-4L10	100.00
26	100	19	30 1/2	4 3/4	85	NAC1B26-4L10	106.00
28	100	19	30 1/2	4 3/4	86	NAC1B28-4L10	110.00
30	100	19	30 1/2	4 3/4	94	NAC1B30-4L10	116.00
32	100	19	30 1/2	4 3/4	95	NAC1B32-4L10	120.00
34	100	19	33 1/2	4 3/4	98	NAC1B34-4L10	140.00
36	100	19	33 1/2	4 3/4	103	NAC1B36-4L10	146.00
38	100	19	36 1/2	4 3/4	104	NAC1B38-4L10	152.00
40	100	19	36 1/2	4 3/4	105	NAC1B40-4L10	156.00

Main Automatic Circuit Breaker—Solid Neutral
 Double Row—4-Inch Gutters

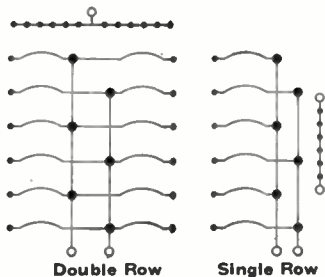
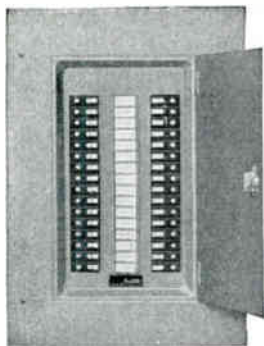
No.	Main Branch Amperes	INSIDE BOX DIMEN. (AND MARKING, IN.)			Wt. Lb.	No.	Each
		Width	Ht.	Depth			
4	50	19	24 1/2	4 3/4	30	NAC1B04-4AB05	\$64.00
6	50	19	24 1/2	4 3/4	34	NAC1B06-4AB05	68.00
8	50	19	27 1/2	4 3/4	38	NAC1B08-4AB05	74.00
10	50	19	27 1/2	4 3/4	42	NAC1B10-4AB05	80.00
12	50	19	27 1/2	4 3/4	85	NAC1B12-4AB05	88.00
14	50	19	30 1/2	4 3/4	94	NAC1B14-4AB05	94.00
16	100	19	36 1/2	5 1/2	95	NAC1B16-4AB10	120.00
18	100	19	36 1/2	5 1/2	96	NAC1B18-4AB10	126.00
20	100	19	39 1/2	5 1/2	103	NAC1B20-4AB10	130.00
22	100	19	39 1/2	5 1/2	104	NAC1B22-4AB10	136.00
24	100	19	39 1/2	5 1/2	105	NAC1B24-4AB10	142.00
26	100	19	42 1/2	5 1/2	112	NAC1B26-4AB10	148.00
28	100	19	45 1/2	5 1/2	121	NAC1B28-4AB10	152.00
30	100	19	45 1/2	5 1/2	122	NAC1B30-4AB10	158.00
32	100	19	45 1/2	5 1/2	123	NAC1B32-4AB10	162.00
34	100	19	48 1/2	5 1/2	175	NAC1B34-4AB10	182.00
36	100	19	48 1/2	5 1/2	176	NAC1B36-4AB10	188.00
38	100	19	48 1/2	5 1/2	177	NAC1B38-4AB10	194.00
40	100	19	51 1/2	5 1/2	190	NAC1B40-4AB10	198.00

*Furnished in single row type, unless two-row is specified.
 Prices are based on 15-amp. s.p. breakers; 20, 25, 35, and 50-amp. s.p. breakers supplied at same prices except when increased capacity bus bars are required.

For each d.p. breaker substituted for not more than two pair of s.p. breakers, add \$1.00 each. D.p. breakers have individual trip.

FA Safety Type NAC12B-3 Circuit Breaker Panelboards and Cabinets

Type A.C. One and Two Pole Breaker—Solid Neutral



Type NAC12B-3L
BASE. Mounting Back with Standard Adjustment.
MAINS. For 3-Wire, 115-230 V., A.C. Feeder Systems with Insulated Neutral Plate on Mounting Back.
BRANCHES. Type A.C. 120 V. Circuit Breaker. 15 Amp., S.P. for 2-Wire Solid Neutral Circuits. So Connected to Main Bus Bar that Any Two Adjacent Pair May Be Used for a 3-Wire Branch Circuit.
BOX. Code Thickness Galvanized Steel. Gutters as Noted.
FRONT. Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting unless Surface Is Ordered.

Main Cable Lugs Only—Solid Neutral Single Row—3-Inch Gutters

No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
4	70	12 14 1/2	4	26	NAC12B04-3L07 \$44.00
6	70	12 16 1/2	4	30	NAC12B06-3L07 51.00
8	70	12 18 1/2	4	34	NAC12B08-3L07 58.00
10	70	12 20 1/2	4	38	NAC12B10-3L07 65.00
*12	100	12 22 1/2	4	45	NAC12B12-3L10 72.00
*14	100	12 24 1/2	4	50	NAC12B14-3L10 79.00
*16	100	12 26 1/2	4	55	NAC12B16-3L10 86.00
Double Row—4-Inch Gutters					
*12	100	19 18 1/2	4 3/4	58	NAC12B12-3L10 \$72.00
*14	100	19 18 1/2	4 3/4	59	NAC12B14-3L10 79.00
*16	100	19 21 1/2	4 3/4	67	NAC12B16-3L10 86.00
18	100	19 21 1/2	4 3/4	68	NAC12B18-3L10 93.00
20	100	19 21 1/2	4 3/4	69	NAC12B20-3L10 100.00
22	100	19 24 1/2	4 3/4	76	NAC12B22-3L10 107.00
24	100	19 24 1/2	4 3/4	77	NAC12B24-3L10 114.00
26	100	19 27 1/2	4 3/4	85	NAC12B26-3L10 121.00
28	100	19 30 1/2	4 3/4	86	NAC12B28-3L10 128.00
30	100	19 30 1/2	4 3/4	94	NAC12B30-3L10 135.00
32	100	19 30 1/2	4 3/4	95	NAC12B32-3L10 142.00
34	200	19 33 1/2	4 3/4	98	NAC12B34-3L20 149.00
36	200	19 33 1/2	4 3/4	103	NAC12B36-3L20 156.00
38	200	19 33 1/2	4 3/4	104	NAC12B38-3L20 163.00
40	200	19 36 1/2	4 3/4	105	NAC12B40-3L20 170.00

Main Automatic Circuit Breaker—Solid Neutral Double Row—4-Inch Gutters

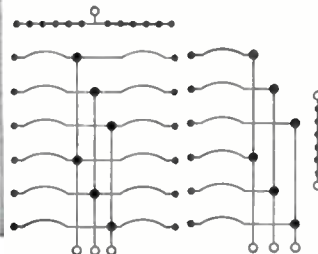
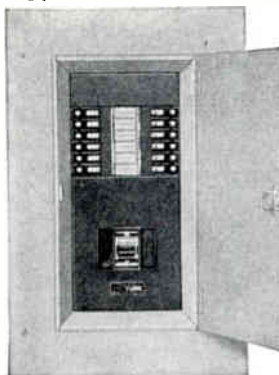
No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
4	50	19 21 1/2	4 3/4	30	NAC12B04-3AB05 \$60.00
6	50	19 21 1/2	4 3/4	34	NAC12B06-3AB05 67.00
8	50	19 21 1/2	4 3/4	38	NAC12B08-3AB05 74.00
10	50	19 24 1/2	4 3/4	42	NAC12B10-3AB05 81.00
12	100	19 30 1/2	5 1/2	85	NAC12B12-3AB10 107.00
14	100	19 30 1/2	5 1/2	94	NAC12B14-3AB10 114.00
16	100	19 33 1/2	5 1/2	95	NAC12B16-3AB10 121.00
18	100	19 33 1/2	5 1/2	96	NAC12B18-3AB10 128.00
20	100	19 33 1/2	5 1/2	103	NAC12B20-3AB10 135.00
22	100	19 36 1/2	5 1/2	104	NAC12B22-3AB10 142.00
24	100	19 36 1/2	5 1/2	105	NAC12B24-3AB10 149.00
26	100	19 39 1/2	5 1/2	112	NAC12B26-3AB10 156.00
28	100	19 42 1/2	5 1/2	121	NAC12B28-3AB10 163.00
30	100	19 42 1/2	5 1/2	122	NAC12B30-3AB10 170.00
32	100	19 42 1/2	5 1/2	123	NAC12B32-3AB10 177.00
34	200	19 51 1/2	7	175	NAC12B34-3AB20 255.00
36	200	19 51 1/2	7	176	NAC12B36-3AB20 262.00
38	200	19 51 1/2	7	177	NAC12B38-3AB20 269.00
40	200	19 54 1/2	7	190	NAC12B40-3AB20 276.00

*Furnished in single row type, unless two row is specified.
 Prices are based on 15-amp. s.p. breakers; 20, 25, 35, and 50-amp. s.p. breakers supplied at same prices except when increased capacity bus bars are required.

For each d.p. breaker substituted for a pair of s.p. breakers, add \$1.00 each. D.p. breakers have individual trip.

FA Safety Type NAC12B-4 Circuit Breaker Panelboards and Cabinets

Type A.C. One and Two Pole Breaker—Solid Neutral



Type NAC12B-4AB
BASE. Mounting Back with Standard Adjustment.
MAINS. For 4-Wire, 120-208 V., A.C. Feeder Systems with Insulated Neutral Plate on Mounting Back.
BRANCHES. Type A.C. 120 V. Circuit Breaker. 15 Amp., S.P. for 2-Wire Solid Neutral Circuits. So Connected to Main Bus Bar that Any Two Adjacent Pair May Be Used for a 3-Wire Branch Circuit.
BOX. Code Thickness Galvanized Steel. Gutters as Noted.
FRONT. Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting unless Surface Is Ordered.

Main Cable Lugs Only—Solid Neutral Single Row—3-Inch Gutters

No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
6	70	12 16 1/2	4	30	NAC12B06-4L07 \$51.00
9	70	12 20 1/2	4	34	NAC12B09-4L07 64.00
*12	70	12 22 1/2	4	45	NAC12B12-4L07 72.00
*14	70	12 24 1/2	4	50	NAC12B14-4L07 79.00
*16	100	12 26 1/2	4	55	NAC12B16-4L10 86.00
Double Row—4-Inch Gutters					
*12	70	19 18 1/2	4 3/4	58	NAC12B12-4L07 \$72.00
*14	70	19 21 1/2	4 3/4	59	NAC12B14-4L07 79.00
*16	100	19 21 1/2	4 3/4	67	NAC12B16-4L10 86.00
18	100	19 21 1/2	4 3/4	68	NAC12B18-4L10 93.00
20	100	19 24 1/2	4 3/4	69	NAC12B20-4L10 100.00
22	100	19 24 1/2	4 3/4	76	NAC12B22-4L10 107.00
24	100	19 24 1/2	4 3/4	77	NAC12B24-4L10 114.00
26	100	19 30 1/2	4 3/4	85	NAC12B26-4L10 121.00
28	100	19 30 1/2	4 3/4	86	NAC12B28-4L10 128.00
30	100	19 30 1/2	4 3/4	94	NAC12B30-4L10 135.00
32	100	19 33 1/2	4 3/4	95	NAC12B32-4L10 142.00
34	100	19 33 1/2	4 3/4	98	NAC12B34-4L10 149.00
36	100	19 33 1/2	4 3/4	103	NAC12B36-4L10 156.00
38	100	19 36 1/2	4 3/4	104	NAC12B38-4L10 163.00
40	100	19 36 1/2	4 3/4	105	NAC12B40-4L10 170.00

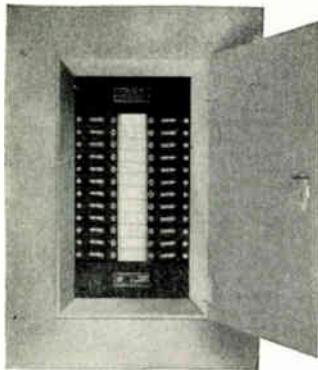
Main Automatic Circuit Breaker—Solid Neutral Double Row—4-Inch Gutters

No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
6	50	19 24 1/2	4 3/4	34	NAC12B06-4AB05 \$73.00
8	50	19 24 1/2	4 3/4	38	NAC12B08-4AB05 80.00
10	50	19 27 1/2	4 3/4	42	NAC12B10-4AB05 87.00
12	50	19 27 1/2	4 3/4	85	NAC12B12-4AB05 94.00
14	50	19 27 1/2	4 3/4	94	NAC12B14-4AB05 101.00
16	100	19 33 1/2	5 1/2	95	NAC12B16-4AB10 128.00
18	100	19 33 1/2	5 1/2	96	NAC12B18-4AB10 135.00
20	100	19 33 1/2	5 1/2	103	NAC12B20-4AB10 142.00
22	100	19 36 1/2	5 1/2	104	NAC12B22-4AB10 149.00
24	100	19 36 1/2	5 1/2	105	NAC12B24-4AB10 156.00
26	100	19 39 1/2	5 1/2	112	NAC12B26-4AB10 163.00
28	100	19 42 1/2	5 1/2	121	NAC12B28-4AB10 170.00
30	100	19 42 1/2	5 1/2	122	NAC12B30-4AB10 177.00
32	100	19 42 1/2	5 1/2	123	NAC12B32-4AB10 184.00
34	100	19 45 1/2	5 1/2	175	NAC12B34-4AB10 191.00
36	100	19 45 1/2	5 1/2	176	NAC12B36-4AB10 198.00
38	100	19 45 1/2	5 1/2	177	NAC12B38-4AB10 205.00
40	100	19 48 1/2	5 1/2	190	NAC12B40-4AB10 212.00

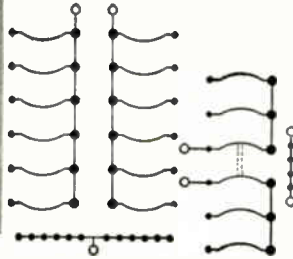
*Furnished in single row type, unless two row is specified.
 Prices are based on 15-amp. s.p. breakers; 20, 25, 35, and 50-amp. s.p. breakers supplied at same prices except when increased capacity bus bars are required.

For each d.p. breaker substituted for a pair of s.p. breakers, add \$1.00 each. D.p. breakers have individual trip.

FA Safety Type NA1B-3 Circuit Breaker
Panelboards and Cabinets
 One Pole Breaker—Solid Neutral



Type NA1B-3L



Double Row Single Row

PANELBOARD. Made of Sections of Moulded Material.
BRANCHES. 15 Amp., S.P. Dublbrak Thermal Type Automatic Circuit Breakers for 125 V., 2-Wire, Solid Neutral Circuits.

MAINS. BOX. 3-Wire, 125-250 V., Solid Neutral. Code Thickness Galvanized Steel, 4-Inch Gutters, except as Noted.

FRONT. Code Thickness Furniture Steel, Rust-Proof and Pearl Grey Finish. Flush Mounting unless Surface Is Ordered.

Main Cable Lugs Only—Solid Neutral
 Single Row—3-Inch Gutters

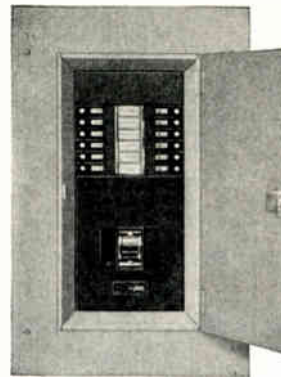
No. Bran-	Main Bus Bar	INSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
ches	Amperes	Width	Ht.	Depth	
4	50	12 12 1/2	4	26	NA1B04-3L05 \$49.00
6	50	12 14 1/2	4	30	NA1B06-3L05 59.00
8	50	12 16 1/2	4	34	NA1B08-3L05 70.00
10	50	12 18 1/2	4	38	NA1B10-3L05 81.00
Double Row—4 Inch Gutters					
12	100	19 21 1/2	4 3/4	58	NA1B12-3L10 95.00
14	100	19 21 1/2	4 3/4	59	NA1B14-3L10 107.00
16	100	19 24 1/2	4 3/4	67	NA1B16-3L10 119.00
18	100	19 24 1/2	4 3/4	68	NA1B18-3L10 131.00
20	100	19 24 1/2	4 3/4	69	NA1B20-3L10 143.00
22	100	19 27 1/2	4 3/4	76	NA1B22-3L10 155.00
24	100	19 27 1/2	4 3/4	77	NA1B24-3L10 167.00
26	100	19 30 1/2	4 3/4	85	NA1B26-3L10 179.00
28	100	19 30 1/2	4 3/4	86	NA1B28-3L10 191.00
30	100	19 33 1/2	4 3/4	94	NA1B30-3L10 203.00
32	100	19 33 1/2	4 3/4	95	NA1B32-3L10 215.00
34	200	19 33 1/2	4 3/4	98	NA1B34-3L20 238.00
36	200	19 36 1/2	4 3/4	103	NA1B36-3L20 251.00
38	200	19 36 1/2	4 3/4	104	NA1B38-3L20 264.00
40	200	19 36 1/2	4 3/4	105	NA1B40-3L20 277.00
42	200	19 39 1/2	4 3/4	111	NA1B42-3L20 290.00

Main Automatic Circuit Breaker—Solid Neutral

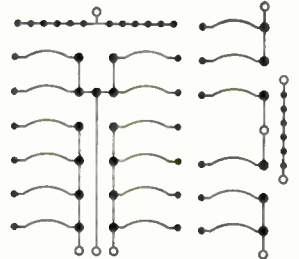
Single Row—3-Inch Gutters					
No. Bran-	Main Bus Bar	INSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
ches	Amperes	Width	Ht.	Depth	
4	50	12 14 1/2	4	30	NA1B04-3AB05 \$71.00
6	50	12 16 1/2	4	34	NA1B06-3AB05 81.00
8	50	12 18 1/2	4	38	NA1B08-3AB05 92.00
10	50	12 20 1/2	4	42	NA1B10-3AB05 103.00
Double Row—4 Inch Gutters					
12	100	19 30 1/2	5 1/2	85	NA1B12-3AB10 138.00
14	100	19 33 1/2	5 1/2	94	NA1B14-3AB10 150.00
16	100	19 33 1/2	5 1/2	95	NA1B16-3AB10 162.00
18	100	19 33 1/2	5 1/2	96	NA1B18-3AB10 174.00
20	100	19 36 1/2	5 1/2	103	NA1B20-3AB10 186.00
22	100	19 36 1/2	5 1/2	104	NA1B22-3AB10 202.00
24	100	19 36 1/2	5 1/2	105	NA1B24-3AB10 214.00
26	100	19 39 1/2	5 1/2	112	NA1B26-3AB10 226.00
28	100	19 42 1/2	5 1/2	121	NA1B28-3AB10 238.00
30	100	19 42 1/2	5 1/2	122	NA1B30-3AB10 250.00
32	100	19 42 1/2	5 1/2	123	NA1B32-3AB10 262.00
34	200	19 51 1/2	7	175	NA1B34-3AB20 345.00
36	200	19 51 1/2	7	176	NA1B36-3AB20 358.00
38	200	19 51 1/2	7	177	NA1B38-3AB20 371.00
40	200	19 54 1/2	7	190	NA1B40-3AB20 384.00
42	200	19 54 1/2	7	192	NA1B42-3AB20 397.00

Prices are based on 15-amp. breakers, 20 and 25-amp. breakers supplied at same prices except when increased capacity bus bars are required; 35 and 50-amp. breakers, \$1.00 extra per circuit plus extra list for increased main.

FA Safety Type NA1B-4 Circuit Breaker
Panelboards and Cabinets
 One Pole Breaker—Solid Neutral



Type NA1B-4AB



Double Row Single Row

PANELBOARD. Made of Sections of Moulded Material.
BRANCHES. 15 Amp., S.P. Dublbrak Thermal Type Automatic Circuit Breakers for 120 V., 2-Wire, Solid Neutral Circuits.

MAINS. BOX. 3-Phase, 4-Wire; 120-208 V., Solid Neutral. Code Thickness Galvanized Steel, 4-Inch Gutters, except as Noted.

FRONT. Code Thickness Furniture Steel, Rust-proof and Pearl Grey Finish. Flush Mounting unless Surface Is Ordered.

Main Cable Lugs Only—Solid Neutral
 Single Row—3-Inch Gutters

No. Main Bran-	Bus Bar	INSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
ches	Amperes	Width	Ht.	Depth	
6	50	12 16 1/2	4	35	NA1B06-4L05 \$62.00
9	50	12 19 1/2	4	40	NA1B09-4L05 79.00
Double Row—4-Inch Gutters					
12	50	19 21 1/2	4 3/4	58	NA1B12-4L05 96.00
14	50	19 24 1/2	4 3/4	67	NA1B14-4L05 108.00
16	100	19 24 1/2	4 3/4	68	NA1B16-4L10 122.00
18	100	19 24 1/2	4 3/4	69	NA1B18-4L10 134.00
20	100	19 27 1/2	4 3/4	76	NA1B20-4L10 146.00
22	100	19 27 1/2	4 3/4	77	NA1B22-4L10 158.00
24	100	19 27 1/2	4 3/4	78	NA1B24-4L10 170.00
26	100	19 30 1/2	4 3/4	85	NA1B26-4L10 182.00
28	100	19 33 1/2	4 3/4	94	NA1B28-4L10 194.00
30	100	19 33 1/2	4 3/4	95	NA1B30-4L10 206.00
32	100	19 33 1/2	4 3/4	96	NA1B32-4L10 218.00
34	100	19 36 1/2	4 3/4	103	NA1B34-4L10 238.00
36	100	19 36 1/2	4 3/4	104	NA1B36-4L10 251.00
38	100	19 36 1/2	4 3/4	105	NA1B38-4L10 264.00
40	100	19 39 1/2	4 3/4	111	NA1B40-4L10 277.00
42	100	19 39 1/2	4 3/4	112	NA1B42-4L10 290.00

Main Automatic Circuit Breaker—Solid Neutral

Double Row—4-Inch Gutters					
No. Bran-	Main Bus Bar	INSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
ches	Amperes	Width	Ht.	Depth	
4	50	19 24 1/2	4 3/4	67	NA1B04-4AB05 \$79.00
6	50	19 24 1/2	4 3/4	68	NA1B06-4AB05 90.00
8	50	19 27 1/2	4 3/4	76	NA1B08-4AB05 101.00
10	50	19 27 1/2	4 3/4	77	NA1B10-4AB05 113.00
12	50	19 27 1/2	4 3/4	78	NA1B12-4AB05 124.00
14	50	19 30 1/2	4 3/4	85	NA1B14-4AB05 136.00
16	100	19 36 1/2	5 1/2	110	NA1B16-4AB10 180.00
18	100	19 36 1/2	5 1/2	112	NA1B18-4AB10 191.00
20	100	19 39 1/2	5 1/2	122	NA1B20-4AB10 203.00
22	100	19 39 1/2	5 1/2	123	NA1B22-4AB10 219.00
24	100	19 39 1/2	5 1/2	124	NA1B24-4AB10 231.00
26	100	19 42 1/2	5 1/2	133	NA1B26-4AB10 243.00
28	100	19 45 1/2	5 1/2	142	NA1B28-4AB10 255.00
30	100	19 45 1/2	5 1/2	143	NA1B30-4AB10 267.00
32	100	19 45 1/2	5 1/2	144	NA1B32-4AB10 279.00
34	100	19 48 1/2	5 1/2	153	NA1B34-4AB10 296.00
36	100	19 48 1/2	5 1/2	154	NA1B36-4AB10 309.00
38	100	19 48 1/2	5 1/2	155	NA1B38-4AB10 322.00
40	100	19 51 1/2	5 1/2	164	NA1B40-4AB10 335.00
42	100	19 51 1/2	5 1/2	165	NA1B42-4AB10 348.00

Prices are based on 15-amp. breakers, 20 and 25-amp. breakers supplied at same prices except when increased capacity bus bars are required; 35 and 50-amp. breakers, \$1.00 extra per circuit plus extra list for increasing mains from 50 to 100 amp.

Maximum bus bar capacity is 100 amp., sub-feeders cannot be supplied on these panelboards.

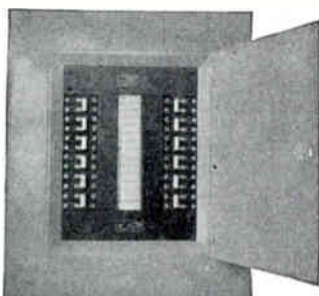
FA Safety Type NA2B-3 Circuit Breaker Panelboards and Cabinets

Two Pole Breaker—Solid Neutral



PANELBOARD. Made of Sections of Moulded Material.
BRANCHES. 15 Amp., D.P., Individual Trip, Dublbrak Thermal Type Automatic Circuit Breakers for 125/250 V., 3-Wire, Solid Neutral Circuits.
MAINS. 3-Wire, 125/250 V., Solid Neutral.
BOX. Code Thickness Galvanized Steel, 4-Inch Gutters.
FRONT. Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting unless Surface is Ordered.

Main Cable Lugs Only—Solid Neutral

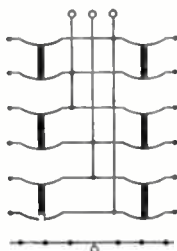


Type NA2B-3L

No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. AND MARKING, IN.			Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth			
4	50	23½	18½	4¾	60	NA2B04-3L05	\$71.00
6	100	23½	21½	4¾	70	NA2B06-3L10	97.00
8	100	23½	24½	4¾	80	NA2B08-3L10	121.00
10	100	23½	24½	4¾	81	NA2B10-3L10	147.00
12	200	23½	27½	4¾	90	NA2B12-3L20	176.00
14	200	23½	30½	4¾	100	NA2B14-3L20	202.00
16	200	23½	30½	4¾	101	NA2B16-3L20	228.00
18	200	23½	33½	4¾	110	NA2B18-3L20	258.00
20	200	23½	36½	4¾	120	NA2B20-3L20	284.00

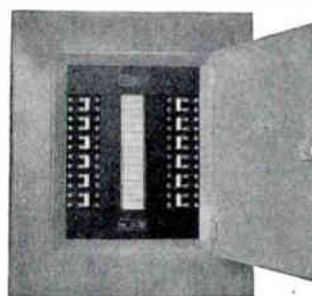
FA Safety Type NA2B-4 Circuit Breaker Panelboards and Cabinets

Two Pole Breaker—Solid Neutral



PANELBOARD. Made of Sections of Moulded Material.
BRANCHES. 15 Amp., D.P., Individual Trip, Dublbrak Thermal Type Automatic Circuit Breakers for 120-208 V., 3-Wire, Solid Neutral Circuits.
MAINS. 3-Phase, 4-Wire; 120-208 V., Solid Neutral.
BOX. Code Thickness Galvanized Steel, 4-Inch Gutters.
FRONT. Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting unless Surface is Ordered.

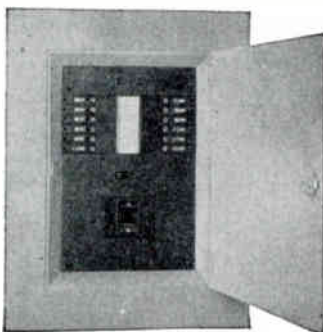
Main Cable Lugs Only—Solid Neutral



Type NA2B-4L

No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. AND MARKING, IN.			Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth			
4	50	23½	21½	4¾	70	NA2B04-4L05	\$73.00
6	50	23½	21½	4¾	71	NA2B06-4L05	96.00
8	50	23½	24½	4¾	80	NA2B08-4L05	120.00
10	50	23½	27½	4¾	81	NA2B10-4L05	144.00
12	50	23½	27½	4¾	90	NA2B12-4L05	168.00
14	50	23½	30½	4¾	100	NA2B14-4L05	192.00
16	100	23½	33½	4¾	110	NA2B16-4L10	224.00
18	100	23½	33½	4¾	111	NA2B18-4L10	253.00
20	100	23½	36½	4¾	120	NA2B20-4L10	279.00

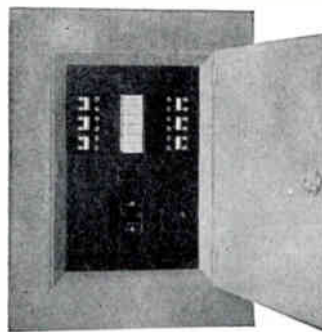
Main Automatic Circuit Breaker—Solid Neutral



Type NA2B-3AB

No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. AND MARKING, IN.			Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth			
4	50	23½	24½	4¾	80	NA2B04-3AB05	\$93.00
6	100	23½	30½	5½	100	NA2B06-3AB10	140.00
8	100	23½	33½	5½	110	NA2B08-3AB10	164.00
10	100	23½	36½	5½	120	NA2B10-3AB10	190.00
12	200	23½	42½	7	150	NA2B12-3AB20	286.00
14	200	23½	45½	7	160	NA2B14-3AB20	312.00
16	200	23½	48½	7	170	NA2B16-3AB20	338.00
18	200	23½	48½	7	175	NA2B18-3AB20	364.00
20	200	23½	51½	7	180	NA2B20-3AB20	390.00

Main Automatic Circuit Breaker—Solid Neutral



Type NA2B-4AB

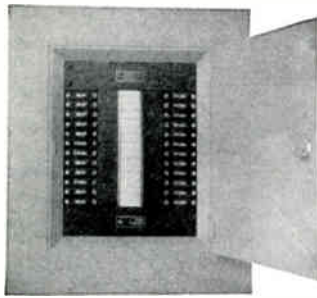
No. Branches	Main Bus Bar Amperes	INSIDE BOX DIMEN. AND MARKING, IN.			Approx. Wt. Lb.	No.	Each
		Width	Ht.	Depth			
4	50	23½	24½	4¾	80	NA2B04-4AB05	\$101.00
6	50	23½	24½	4¾	85	NA2B06-4AB05	124.00
8	50	23½	27½	4¾	90	NA2B08-4AB05	148.00
10	50	23½	30½	4¾	100	NA2B10-4AB05	172.00
12	50	23½	30½	4¾	110	NA2B12-4AB05	196.00
14	50	23½	33½	4¾	120	NA2B14-4AB05	220.00
16	100	23½	42½	5½	150	NA2B16-4AB10	284.00
18	100	23½	42½	5½	155	NA2B18-4AB10	310.00
20	100	23½	45½	5½	165	NA2B20-4AB10	336.00

Prices are based on 15-amp. breakers, 20 and 25-amp. breakers supplied at same prices except when increased capacity bus bars are required; 35 and 50-amp. breakers, \$2.00 extra per circuit plus extra list for increased main.

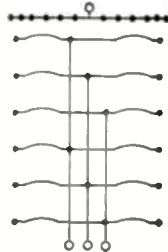
Prices are based on 15-amp. breakers, 20 and 25-amp. breakers supplied at same prices except when increased capacity bus bars are required; 35 and 50-amp. breakers, \$2.00 extra per circuit, plus increased capacity bus bars and/or main circuit breaker, if necessary.

FA Safety Type NA1BS-4 Circuit Breaker Panelboards and Cabinets

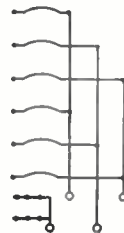
One Pole Breaker—Connected A-B-C Sequence



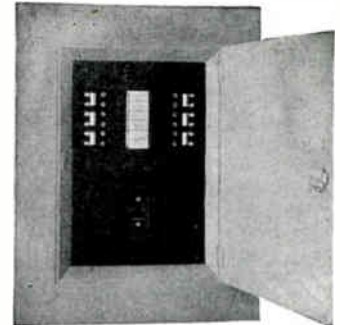
Type NA1BS-4L



Double Row



Single Row



Type NA1BS-4AB

PANELBOARD. Made of Sections of Moulded Material.

BRANCHES. 15 Amp., S.P., Dubbrak Thermal Type Automatic Circuit Breakers for 120 V., 2 Wire, Solid Neutral Circuits.

MAINS. 3-Phase, 4-Wire, 120-208 V., Solid Neutral.

BOX. Code Thickness Galvanized Steel, 4-Inch Gutters.

FRONT. Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Flush Mounting unless Surface Is Ordered.

It is standard practice to assemble 3-phase, 4-wire lighting and appliance branch circuit panelboards so that all branch circuits on each phase are grouped together.

Ordinarily this scheme of connection meets all requirements, and since it is possible to make panelboards of this type somewhat narrower, a saving of space is effected. When panelboards are mounted on columns in industrial plants, the matter of additional width might be objectionable.

However, specifications occasionally specify the adjacent circuit branches to be connected in the sequence of phase A, B, and C, repeating this connection all the way from the top to the bottom of the panelboard.

The cost of the A, B, C, sequence arrangement is slightly higher than that of the group-phase arrangement, because a wider box is required and branch circuits require copper connecting straps between the main bus bar and circuit branches.

Main Cable Lugs Only—Solid Neutral

Main Automatic Circuit Breaker—Solid Neutral

Single Row—3-Inch Gutters

Double Row—4-Inch Gutters

No. Branches	Main Bus Bar—Amps.	INSIDE BOX DIMEN.—AND MARKING, IN.—	Approx. Wt. Lb.	No.	Each
		Ht. Width Depth			
6	50	12 16½ 4	70	NA1BS06-4L050	\$68.00
9	50	12 19½ 4	71	NA1BS09-4L050	87.00

No. Branches	Main Bus Bar—Amps.	INSIDE BOX DIMEN.—AND MARKING, IN.—	Approx. Wt. Lb.	No.	Each
		Ht. Width Depth			
4	50	23½ 21½ 4¾	70	NA1BS04-4AB05	\$86.00
6	50	23½ 21½ 4¾	71	NA1BS06-4AB05	97.00
8	50	23½ 24½ 4¾	80	NA1BS08-4AB05	108.00
10	50	23½ 24½ 4¾	81	NA1BS10-4AB05	120.00

Double Row—4-Inch Gutters

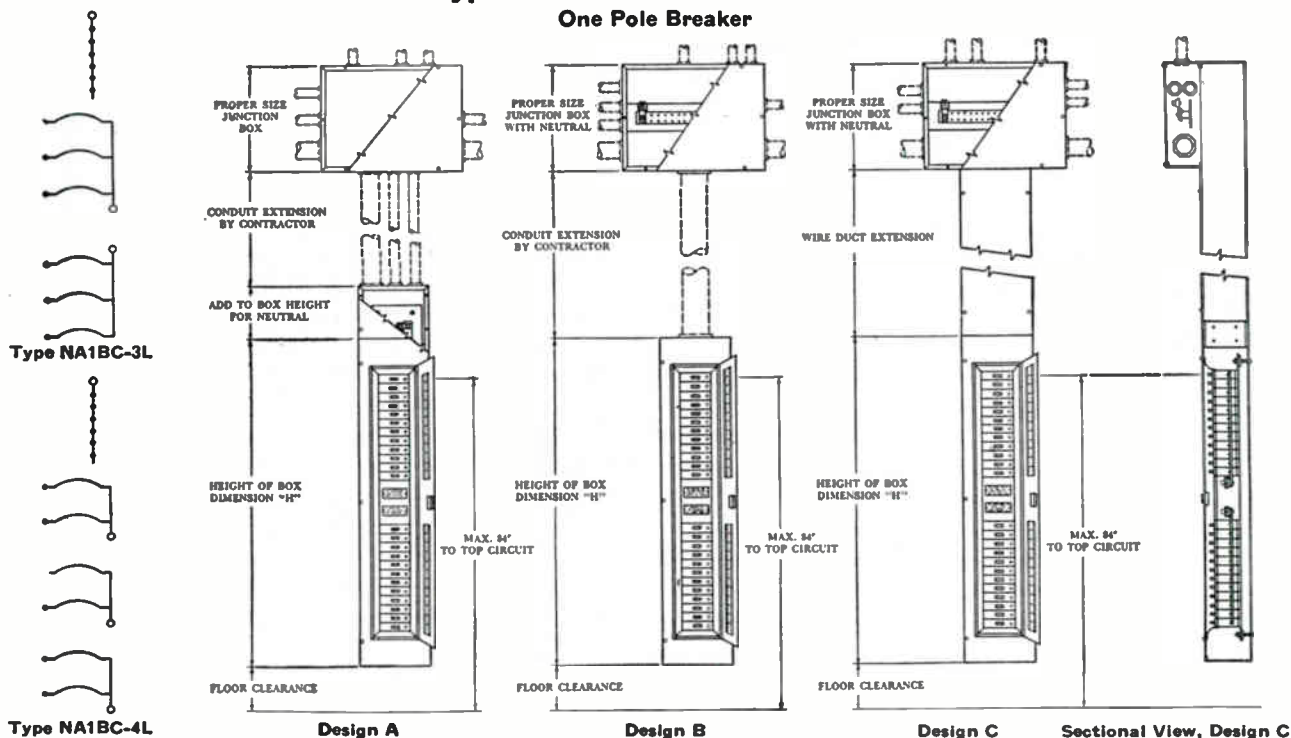
12	50	23½ 21½ 4¾	72	NA1BS12-4L05	106.00
14	50	23½ 24½ 4¾	85	NA1BS14-4L05	119.00
16	100	23½ 24½ 4¾	86	NA1BS16-4L10	133.00
18	100	23½ 24½ 4¾	87	NA1BS18-4L10	145.00
20	100	23½ 27½ 4¾	96	NA1BS20-4L10	159.00
22	100	23½ 27½ 4¾	97	NA1BS22-4L10	172.00
24	100	23½ 27½ 4¾	98	NA1BS24-4L10	185.00
26	100	23½ 30½ 4¾	107	NA1BS26-4L10	197.00
28	100	23½ 30½ 4¾	108	NA1BS28-4L10	209.00
30	100	23½ 30½ 4¾	109	NA1BS30-4L10	221.00
32	100	23½ 33½ 4¾	120	NA1BS32-4L10	233.00
34	100	23½ 36½ 4¾	130	NA1BS34-4L10	253.00
36	100	23½ 36½ 4¾	132	NA1BS36-4L10	266.00
38	100	23½ 36½ 4¾	133	NA1BS38-4L10	279.00
40	100	23½ 39½ 4¾	142	NA1BS40-4L10	294.00
42	100	23½ 39½ 4¾	143	NA1BS42-4L10	308.00

12	50	23½ 24½ 4¾	82	NA1BS12-4AB05	134.00
14	50	23½ 27½ 4¾	90	NA1BS14-4AB05	147.00
16	100	23½ 33½ 5½	110	NA1BS16-4AB10	191.00
18	100	23½ 33½ 5½	111	NA1BS18-4AB10	202.00
20	100	23½ 36½ 5½	120	NA1BS20-4AB10	216.00
22	100	23½ 36½ 5½	121	NA1BS22-4AB10	233.00
24	100	23½ 36½ 5½	122	NA1BS24-4AB10	246.00
26	100	23½ 39½ 5½	130	NA1BS26-4AB10	258.00
28	100	23½ 39½ 5½	131	NA1BS28-4AB10	270.00
30	100	23½ 39½ 5½	132	NA1BS30-4AB10	282.00
32	100	23½ 42½ 5½	140	NA1BS32-4AB10	294.00
34	100	23½ 45½ 5½	150	NA1BS34-4AB10	311.00
36	100	23½ 45½ 5½	151	NA1BS36-4AB10	324.00
38	100	23½ 45½ 5½	152	NA1BS38-4AB10	337.00
40	100	23½ 48½ 5½	160	NA1BS40-4AB10	352.00
42	100	23½ 48½ 5½	162	NA1BS42-4AB10	366.00

Prices are based on 15-amp. breakers, 20 and 25-amp. breakers supplied at same prices except when increased capacity bus bars are required; 35 and 50-amp. breakers, \$1.00 extra per circuit, plus extra list for increased main.

FA Industrial Column Type NA1BC Circuit Breaker Panelboards and Cabinets

One Pole Breaker



PANELBOARD BRANCHES. Made of Section of Moulded Material. 15 Amp. S.P. Dubbrak Thermal Type Automatic Circuit Breakers for 120 V., 2-Wire, Solid Neutral Circuits.

MAINS BOX. FRONT. Cable Lugs Only with Solid Neutral. Code Thickness Galvanized Steel with Side and Rear Wiring Gutters. Code Thickness Furniture Steel. Rust-proof and Pearl Grey Finish. Surface Mounting unless Flush is Ordered.

JUNCTION BOX. Code Thickness Galvanized Steel. Neutral Plate Included. Size and Design as Shown Above.

Designed to be mounted between the flanges of a 10-inch H column; it may also be used to advantage in any other location where the available space will not accommodate a standard width panelboard.

Design A has the neutral plate located in an extension of the panelboard box. This extension has a removable screw cover which is separate from the panelboard front. There is also furnished a junction box for mounting on the ceiling directly above the panelboard location.

Design B is the same as Design A, except that the neutral plate is mounted in the junction box on the ceiling. In both

designs, A and B, the contractor must furnish one or more riser conduits between the junction box and the panelboard.

Design C is similar to Design B, except that the connection between the junction box and the panelboard box is made by means of a wire duct instead of riser conduits.

Wire and cable duct is furnished extra as follows:

Height Duct..... inches	12	24	36	48	60
Each.....	\$5.00	8.00	11.00	14.00	17.00
Width Duct..... inches	8	8	8	8	8
Depth Duct..... inches	5	5	5	5	5

Over 60 inches high, add \$3.50 per lineal foot.

3-Wire—125/250 V., Solid Neutral

No. Branches	Main Amperes	OUTSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
		Width Ht. Depth			
4	50	8 13 5	25	NA1BC04-3L05	\$62.00
6	50	8 15 5	30	NA1BC06-3L05	73.50
8	50	8 17 5	35	NA1BC08-3L05	86.00
10	50	8 19 5	40	NA1BC10-3L05	98.50
12	100	8 25 5	45	NA1BC12-3L10	114.00
14	100	8 27 5	50	NA1BC14-3L10	127.00
16	100	8 29 5	55	NA1BC16-3L10	141.00
18	100	8 31 5	60	NA1BC18-3L10	154.50
20	100	8 33 5	65	NA1BC20-3L10	168.00
22	100	8 35 5	70	NA1BC22-3L10	181.50
24	100	8 37 5	75	NA1BC24-3L10	195.00
26	100	8 39 5	80	NA1BC26-3L10	208.50
28	100	8 41 5	85	NA1BC28-3L10	222.00
30	100	8 43 5	90	NA1BC30-3L10	235.50
32	100	8 45 5	95	NA1BC32-3L10	249.00
34	200	8 47 5	105	NA1BC34-3L20	273.50
36	200	8 49 5	110	NA1BC36-3L20	288.00
38	200	8 51 5	120	NA1BC38-3L20	302.50
40	200	8 53 5	125	NA1BC40-3L20	317.00
42	200	8 55 5	125	NA1BC42-3L20	331.50

3-Phase—4-Wire—120/208 V., Solid Neutral

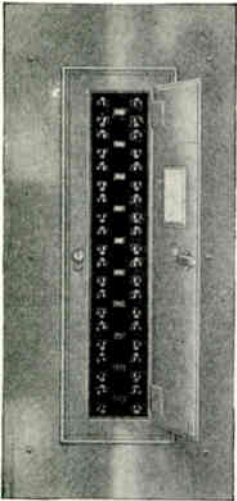
No. Branches	Main Amperes	OUTSIDE BOX DIMEN. AND MARKING, IN.	Approx. Wt. Lb.	No.	Each
		Width Ht. Depth			
6	50	8 17 5	35	NA1BC06-4L05	\$76.50
8	50	8 19 5	40	NA1BC08-4L05	89.00
10	50	8 21 5	45	NA1BC10-4L05	102.50
12	50	8 23 5	50	NA1BC12-4L05	115.00
14	50	8 25 5	55	NA1BC14-4L05	128.50
16	100	8 31 5	60	NA1BC16-4L10	144.00
18	100	8 33 5	65	NA1BC18-4L10	157.50
20	100	8 35 5	70	NA1BC20-4L10	171.00
22	100	8 37 5	75	NA1BC22-4L10	184.50
24	100	8 39 5	80	NA1BC24-4L10	198.00
26	100	8 41 5	85	NA1BC26-4L10	211.50
28	100	8 43 5	90	NA1BC28-4L10	225.00
30	100	8 45 5	95	NA1BC30-4L10	238.50
32	100	8 47 5	100	NA1BC32-4L10	252.00
34	100	8 49 5	105	NA1BC34-4L10	273.50
36	100	8 51 5	110	NA1BC36-4L10	288.00
38	100	8 53 5	115	NA1BC38-4L10	302.50
40	100	8 55 5	120	NA1BC40-4L10	317.00
42	100	8 57 5	125	NA1BC42-4L10	331.50

Prices are based on 15-amp. breakers, 20 and 25-amp. breakers supplied at same prices except when increased capacity bus bars are required; 35 and 50-amp. breakers, \$1.00 extra per circuit, plus extra list for increased main.

When Design A is specified add to box height as follows: 4 to 24 branches, 6 inches; 26 to 42 branches, 10 inches. No additional charge.

Trumbull Unit Lighting Panelboards

125 Volts D.C., 125-250 Volts A.C. or D.C., and 250 Volts A.C.



A unit lighting panelboard of the sectional type, which is an essential part of the interior distribution system, provides for multiple grouping of many small circuits or branches; facilitates their control and allows for convenient renewal of protective devices.

This type of panelboard is available in two types: Standard, with 20-inch width box, and the narrow type panel with a 12½-inch width box. The latter is particularly suitable for mounting in areas limited or restricted.

APPLICATION.—A unit lighting panelboard is designed for low voltage lighting distribution, 125 volts d.c., 125-250 volts a.c. or d.c. and 250 volts a.c. where the capacity in all branch circuits does not exceed 30 amperes.

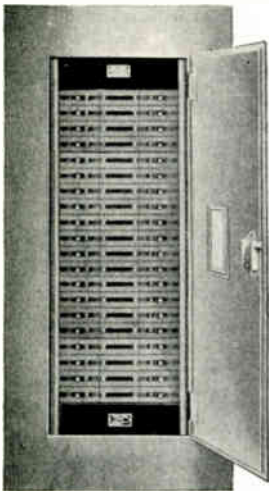
CONSTRUCTION.—This panel is constructed of standardized parts,

thereby providing additional features of flexibility and interchangeability.

Dead front type, consisting of an assembly of moulded bakelite sections, each containing a maximum of four tumbler switches, with fuses of the plug or cartridge type. Tumbler switches are available in both single and double pole, having a rating of 30 amperes, 250 volts. Panel is furnished complete with box of code gage galvanized sheet steel and trim. Solderless lugs standard in the mains of all panelboards.

Trumbull Circuit Breaker Lighting Panelboards

125 Volts D.C., 125-250 Volts or 250 Volts A.C.



A circuit breaker lighting panelboard is particularly adaptable when automatic overload protection and flexibility are important factors of the installation.

This type of panelboard incorporates the Type AT Circuit Breaker with improved electrical and mechanical features.

APPLICATION.—This panelboard is designed for low voltage, branch circuit lighting and power distribution, 125 volts d.c., 125-250 volts or 250 volts a.c. where the capacity of any branch circuit does not exceed 50 amperes, although one subfeed up to 225 amperes can be furnished.

CONSTRUCTION.—Breakers are assembled on a heavy black enamel steel back plate, to

accommodate the mounting of either 1, 2 or 3-pole breakers of 15, 20, 25, 35 or 50-ampere rating. This provides a feature of interchangeability which may be desirable at some later date to accommodate changes within the electrical wiring system.

Breakers are calibrated and sealed at the factory to prevent unauthorized tampering or changes.

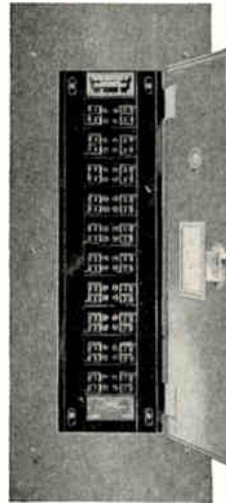
Panelboard boxes are 4½ inches deep, with the exception of where main breakers are of 100 or 225 amperes, frame size, which require a box 3¼ inches deep.

Solderless lugs standard in the mains of all panelboards.

This panelboard is also available in the narrow type construction for use in areas where space may be a limiting factor.

Trumbull Multi-Breaker Lighting Panelboards

115-230 Volts A.C.



This type of panelboard is particularly suitable for restricted space, usually encountered in modern homes, stores and office buildings.

APPLICATION.—Designed for 115-230 volts a.c.

Branch circuit breakers are available in 15, 20, 25, 35 and 50-ampere, single and double-pole.

CONSTRUCTION.—Panel is assembled with molded unit blocks, each of which houses a number of unit pole breakers. The entire unit is rivet sealed with metal cover at the factory to prevent unauthorized changes.

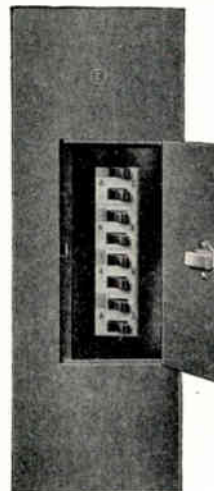
Available with two types of breakers: one, utilizing the Type MB breaker, which can house as many as four single pole units in one block, and the other the Type M breaker, which houses two single pole units in one block.

The latter is particularly advantageous where added flexibility may be desired.

Solderless lugs standard in the mains of all panelboards.

Trumbull Column Type Lighting Panelboards

Single-Phase, 115-230 Volts A.C., 3-Phase, 4-Wire 115-208 Volts A.C.



A new type of panelboard, which has been particularly designed for use in factory buildings where it may be desirable to assemble panelboards in the web of H columns.

APPLICATION.—Available for single-phase, 115-230 volts a.c., 3-phase, 4-wire 115-208 volts a.c. with branch circuits ranging from 15 to 50 amperes inclusive, single and double pole.

CONSTRUCTION.—This type of panelboard incorporates the use of Type M breaker, consisting of 2 unit pole breakers, assembled in a moulded unit block and rivet sealed to prevent any tampering. This panel is furnished in two widths, 8¾-inch designed for a 10-inch H beam, and a 7¼-inch maximum width panel designed for an 8-inch beam.

Solderless lugs standard in the mains of all panelboards.

WHEN ORDERING PANELBOARDS

specify Surface or Flush Mounting. Flush mounting will be furnished unless Surface is specified. Standard drilling furnished on all Lighting Panelboard Boxes unless otherwise specified on order.

For complete information regarding additions for special features, ask the nearest GRAYBAR office.

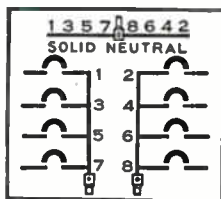
Trumbull Circuit Breaker Panelboards

Standard Type

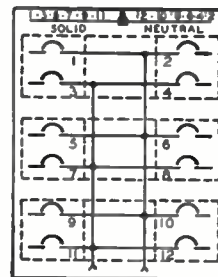
*Types NAB and NMM

Single-Phase and 3-Phase, 4-Wire

*No. NAB-3 and No. NAB-4 equipped with Type AT breaker. Price is for 15, 20 or 25-ampere rating. For 35 or 50 amperes, single pole add \$1.00; for 2 poles add \$2.00. No. NMM-3L and No. NMM-4L equipped with Multi-Breaker for a.c. service only. Price is for 15, 20, 25, 35 and 50-ampere rating. For each double pole breaker when substituted for 2 single poles add \$1.00.



Type NAG

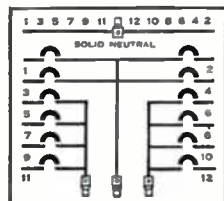


Type NMM

3-Wire Mains, 115-230 Volts

2-Wire Branches, 115 Volts

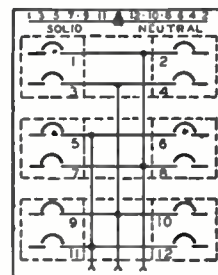
No. Circuits	Cap. of Mains Amperes	Mains with Lugs Only				Mains with Circuit Breaker							
		No.	Each	No. of Box Only	No.	Each	No. of Box Only	No.	Each	No. of Box Only			
4	50	NAB304L	\$52.00	51200	NMM04-3L	\$44.00	51200	NAB304AB	\$68.00	51202	NMM04-3AB	\$56.00	51202
6	50	NAB306L	63.00	51201	NMM06-3L	51.00	51201	NAB306AB	79.00	51203	NMM06-3AB	63.00	51203
8	50	NAB308L	74.00	51201	NMM08-3L	58.00	51201	NAB308AB	90.00	51203	NMM08-3AB	70.00	51203
10	50	NAB310L	85.00	51202	NMM10-3L	65.00	51201	NAB310AB	101.00	51204	NMM10-3AB	77.00	51203
12	100	NAB312L	96.00	51202	NMM12-3L	72.00	51201	NAB312AB	134.00	51206Y	NMM12-3AB	107.00	51203
14	100	NAB314L	107.00	51203	NMM14-3L	79.00	51202	NAB314AB	145.00	51207Y	NMM14-3AB	114.00	51204
16	100	NAB316L	118.00	51203	NMM16-3L	86.00	51202	NAB316AB	156.00	51207Y	NMM16-3AB	121.00	51204
18	100	NAB318L	129.00	51204	NMM18-3L	93.00	51203	NAB318AB	167.00	51208Y	NMM18-3AB	128.00	51205
20	100	NAB320L	140.00	51204	NMM20-3L	100.00	51203	NAB320AB	178.00	51208Y	NMM20-3AB	135.00	51205
22	100	NAB322L	151.00	51205	NMM22-3L	107.00	51203	NAB322AB	189.00	51209Y	NMM22-3AB	142.00	51205
24	100	NAB324L	162.00	51205	NMM24-3L	114.00	51203	NAB324AB	200.00	51209Y	NMM24-3AB	149.00	51205
26	100	NAB326L	173.00	51206	NMM26-3L	121.00	51204	NAB326AB	211.00	51210Y	NMM26-3AB	156.00	51206
28	100	NAB328L	184.00	51206	NMM28-3L	128.00	51204	NAB328AB	222.00	51210Y	NMM28-3AB	163.00	51206
30	100	NAB330L	195.00	51207	NMM30-3L	135.00	51205	NAB330AB	233.00	51211Y	NMM30-3AB	170.00	51207
32	100	NAB332L	206.00	51207	NMM32-3L	142.00	51205	NAB332AB	244.00	51211Y	NMM32-3AB	177.00	51207
34	200	NAB334L	217.00	51208	NMM34-3L	149.00	51205	NAB334AB	317.00	51214Y	NMM34-3AB	245.00	61211
36	200	NAB336L	228.00	51208	NMM36-3L	156.00	51205	NAB336AB	328.00	51214Y	NMM36-3AB	252.00	61211
38	200	NAB338L	239.00	51209	NMM38-3L	163.00	51206	NAB338AB	339.00	51215Y	NMM38-3AB	259.00	61212
40	200	NAB340L	250.00	51209	NMM40-3L	170.00	51206	NAB340AB	350.00	51215Y	NMM40-3AB	266.00	61212
42	200	NAB342L	261.00	51210	NMM42-3L	177.00	51207	NAB342AB	361.00	51216Y	NMM42-3AB	273.00	61213



Type NAB

4-Wire Mains, 3-Phase, 120-208 Volts

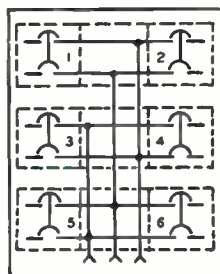
2-Wire Branches, 115 Volts



Type NMM

No. Circuits	Cap. of Mains Amperes	Mains with Lugs Only				Mains with Circuit Breaker				
		No.	Each	No. of Box Only	No.	Each	No. of Box Only	No.	Each	No. of Box Only
4	50	NAB404L	\$52.00	51200	NAB404AB	\$75.00	51202	NMM06-4AB	\$69.00	51203
6	50	NAB406L	63.00	51201	NAB406AB	86.00	51203	NMM08-4AB	76.00	51203
8	50	NAB408L	74.00	51201	NAB408AB	97.00	51203	NMM10-4AB	83.00	51203
10	50	NAB410L	85.00	51202	NAB410AB	108.00	51204	NMM12-4AB	90.00	51203
12	50	NAB412L	96.00	51202	NAB412AB	119.00	51204	NMM14-4AB	97.00	51204
14	50	NAB414L	107.00	51203	NAB414AB	130.00	51205	NMM16-4AB	128.00	51204
16	100	NAB416L	118.00	51203	NAB416AB	168.00	51207	NMM18-4AB	135.00	51205
18	100	NAB418L	129.00	51204	NAB418AB	179.00	51208	NMM20-4AB	142.00	51205
20	100	NAB420L	140.00	51204	NAB420AB	190.00	51208	NMM22-4AB	149.00	51205
22	100	NAB422L	151.00	51205	NAB422AB	201.00	51209	NMM24-4AB	156.00	51205
24	100	NAB424L	162.00	51205	NAB424AB	212.00	51209	NMM26-4AB	163.00	51206
26	100	NAB426L	173.00	51206	NAB426AB	223.00	51210	NMM28-4AB	170.00	51206
28	100	NAB428L	184.00	51206	NAB428AB	234.00	51210	NMM30-4AB	177.00	51207
30	100	NAB430L	195.00	51207	NAB430AB	245.00	51211	NMM32-4AB	184.00	51207
32	100	NAB432L	206.00	51207	NAB432AB	256.00	51211	NMM34-4AB	191.00	51207
34	100	NAB434L	217.00	51208	NAB434AB	267.00	51212	NMM36-4AB	198.00	51207
36	100	NAB436L	228.00	51208	NAB436AB	278.00	51212	NMM38-4AB	205.00	51208
38	100	NAB438L	239.00	51209	NAB438AB	289.00	51213	NMM40-4AB	212.00	51208
40	100	NAB440L	250.00	51209	NAB440AB	300.00	51213	NMM42-4AB	219.00	51209
42	100	NAB442L	261.00	51210	NAB442AB	311.00	51214			

Double Pole Circuit Breakers—15 Amperes in Branches—Mains with Lugs Only



No. NM2M-3L

No. AB3—Type AT Breaker 3-Wire Mains, 125-250 Volts 2-Wire Branches, 125 Volts

No. Circuits	Cap. of Mains Amperes	No.	Each	No. of Box Only
4	50	AB304L	\$69.00	51201
6	50	AB306L	91.00	51202
8	50	AB308L	113.00	51203
10	50	AB310L	135.00	51204
12	100	AB312L	157.00	51205
14	100	AB314L	179.00	51206
16	100	AB316L	201.00	51207
18	100	AB318L	223.00	51208
20	100	AB320L	245.00	51209

No. AB2—Type AT Breaker 2-Wire Mains, 125 Volts 2-Wire Branches, 125 Volts Mains with Lugs Only

Cap. of Mains Amperes	No.	Each	No. of Box Only
50	AB204L	\$69.00	51201
50	AB206L	91.00	51202
100	AB208L	113.00	51203
100	AB210L	135.00	51204
200	AB212L	157.00	51205
200	AB214L	179.00	51206
200	AB216L	201.00	51207
200	AB218L	223.00	51208
200	AB220L	245.00	51209

No Neutral Bar No. NM2M-3L—Multi-Breaker 3-Wire Mains, 115 or 230 Volts 2-Wire Branches, 115 Volts

Cap. of Mains Amperes	No.	Each	No. of Box Only
50	NM2M04-3L	\$62.00	51201
100	NM2M06-3L	78.00	51201
100	NM2M08-3L	94.00	51202
100	NM2M10-3L	110.00	51203
200	NM2M12-3L	126.00	51203
200	NM2M14-3L	142.00	51204
200	NM2M16-3L	158.00	51205
200	NM2M18-3L	174.00	51205
200	NM2M20-3L	190.00	51206

Double Pole Circuit Breakers—15 Amperes in Branches—Mains with Circuit Breaker

No. Circuits	Cap. of Mains Amperes	No.	Each	No. of Box Only
4	50	AB304AB	\$92.00	51203
6	50	AB306AB	114.00	51204
8	50	AB308AB	136.00	51205
10	50	AB310AB	158.00	51206
12	100	AB312AB	207.00	61209
14	100	AB314AB	229.00	61210
16	100	AB316AB	251.00	61211
18	100	AB318AB	273.00	61212
20	100	AB320AB	285.00	61213
50	50	AB204AB	\$85.00	51203
100	50	AB206AB	129.00	61206
100	100	AB208AB	151.00	61207
100	100	AB210AB	173.00	61208
200	200	AB212AB	257.00	61211
200	200	AB214AB	279.00	61212
200	200	AB216AB	301.00	61213
200	200	AB218AB	323.00	61214
200	200	AB220AB	345.00	61215
50	50	NM2M04-3AB	\$80.00	51203
100	100	NM2M06-3AB	96.00	51203
100	100	NM2M08-3AB	112.00	51204
100	100	NM2M10-3AB	128.00	51205
200	200	NM2M12-3AB	168.00	61207
200	200	NM2M14-3AB	184.00	61207
200	200	NM2M16-3AB	200.00	61208
200	200	NM2M18-3AB	216.00	61209
200	200	NM2M20-3AB	232.00	61209

Solderless lugs furnished in standard mains.

Trumbull Switch and Fuse Lighting Panelboards

Standard Type

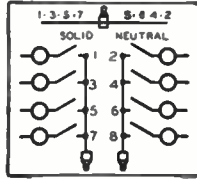
Nos. NTP3 and NTC3

3-Wire Mains, 125-250 Volts

2-Wire Branches, 125 Volts

30-Ampere S. P. Tumbler Switches

Single Fuse in One Leg—Solid Neutral Bar in Other Leg



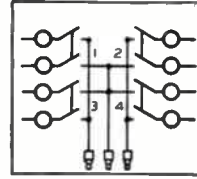
Nos. TP3 and TC3

3-Wire Mains, 125-250 Volts

2-Wire Branches, 125 Volts

30-Ampere D. P. Tumbler Switches

Two Fuses—No Neutral Bar



Cap. of No. of No. of		Mains with Lugs Only			Door-In-Door			
No. Mains	Box	Plug Fuses	Cart. Fuses	Each	Plug Fuses	Cart. Fuses	Each	
Cir. Amps.	Only	No.	No.		No.	No.		
4	30	51200	NTP304L	NTC304L	\$34.00	NTP304LD	NTC304LD	\$50.00
8	60	51201	NTP308L	NTC308L	40.00	NTP308LD	NTC308LD	60.00
12	60	51202	NTP312L	NTC312L	50.00	NTP312LD	NTC312LD	70.00
16	100	51203	NTP316L	NTC316L	74.00	NTP316LD	NTC316LD	86.00
20	100	51204	NTP320L	NTC320L	84.00	NTP320LD	NTC320LD	96.00
24	100	51205	NTP324L	NTC324L	94.00	NTP324LD	NTC324LD	106.00
28	100	51206	NTP328L	NTC328L	104.00	NTP328LD	NTC328LD	116.00
32	100	51207	NTP332L	NTC332L	114.00	NTP332LD	NTC332LD	126.00
36	200	51208	NTP336L	NTC336L	140.00	NTP336LD	NTC336LD	152.00
40	200	51209	NTP340L	NTC340L	150.00	NTP340LD	NTC340LD	162.00

Cap. of No. of No. of		Mains with Safety Fuse			
No. Mains	Box	Plug Fuses	Cart. Fuses	Each	
Cir. Amps.	Only	No.	No.		
4	30	51202	NTP304F	NTC304FD	\$62.00
8	60	51203	NTP308F	NTC308FD	74.00
12	60	51204	NTP312F	NTC312FD	86.00
16	100	51205	NTP316F	NTC316FD	102.00
20	100	51206	NTP320F	NTC320FD	114.00
24	100	51207	NTP324F	NTC324FD	125.00
28	100	51208	NTP328F	NTC328FD	138.00
32	100	51209	NTP332F	NTC332FD	150.00
36	200	51211	NTP336F	NTC336FD	178.00
40	200	51212	NTP340F	NTC340FD	190.00

Cap. of No. of No. of		Mains with Lugs Only			Door-In-Door			
No. Mains	Box	Plug Fuses	Cart. Fuses	Each	Plug Fuses	Cart. Fuses	Each	
Cir. Amps.	Only	No.	No.		No.	No.		
4	30	51203	TP304F	TC304F	\$52.00	TP304FD	TC304FD	\$68.00
6	60	51204	TP306F	TC306F	62.00	TP306FD	TC306FD	78.00
8	60	51205	TP308F	TC308F	72.00	TP308FD	TC308FD	88.00
10	60	51206	TP310F	TC310F	82.00	TP310FD	TC310FD	98.00
12	60	51207	TP312F	TC312F	92.00	TP312FD	TC312FD	108.00
14	100	51208	TP314F	TC314F	112.00	TP314FD	TC314FD	128.00
16	100	51209	TP316F	TC316F	122.00	TP316FD	TC316FD	138.00
18	100	51210	TP318F	TC318F	132.00	TP318FD	TC318FD	148.00
20	100	51211	TP320F	TC320F	142.00	TP320FD	TC320FD	158.00

Cap. of No. of No. of		Mains with Safety Fuse			
No. Mains	Box	Plug Fuses	Cart. Fuses	Each	
Cir. Amps.	Only	No.	No.		
4	30	51201	TP304L	TC304L	\$38.00
6	60	51202	TP306L	TC306L	48.00
8	60	51203	TP308L	TC308L	58.00
10	60	51204	TP310L	TC310L	68.00
12	60	51205	TP312L	TC312L	78.00
14	100	51206	TP314L	TC314L	90.00
16	100	51207	TP316L	TC316L	100.00
18	100	51208	TP318L	TC318L	110.00
20	100	51209	TP320L	TC320L	124.00

Narrow Type

3-Wire Mains, 125-250 Volts 2-Wire Branches, 125 Volts

Single Fuse in One Leg—Solid Neutral in Other Leg
Single Door

30-Ampere Fuses Only in Branches—Mains; Lugs Only

No. Cir.	Cap. of Mains Amps.	No. of Box Only	Plug Fuses No.	Each
4	30		NRP3G04	\$16.00
8	60		NRP3G08	20.00
12	60		NRP3G12	24.00
16	100		NRP3G16	30.00
20	100		NRP3G20	34.00
24	100		NRP3G24	42.00
28	100		NRP3G28	48.00
32	100		NRP3G32	54.00

Single Door

30-Ampere S. P. Tumbler Switches in Branches—Mains; Lugs Only

No. Cir.	Cap. of Mains Amps.	No. of Box Only	Plug Fuses No.	Each
4	30		NRTP3G04	\$34.00
6	60		NRTP3G06	37.00
8	60		NRTP3G08	40.00
10	60		NRTP3G10	45.00
12	60		NRTP3G12	50.00
14	100		NRTP3G14	62.00
16	100		NRTP3G16	74.00

3-Wire Mains, 125-250 Volts 2-Wire Branches, 125 Volts

Two Fuses—No Neutral Bar
Single Door

30-Ampere Fuses Only in Branches—Mains; Lugs Only

No. Cir.	Cap. of Mains Amps.	No. of Box Only	Plug Fuses No.	Each
4	30		RP3G04	\$16.00
6	60		RP3G06	22.00
8	60		RP3G08	26.00
10	60		RP3G10	30.00
12	60		RP3G12	34.00
14	100		RP3G14	40.00
16	100		RP3G16	44.00
18	100		RP3G18	50.00
20	100		RP3G20	54.00

Single Door

30-Ampere D. P. Tumbler Switches in Branches—Mains; Lugs Only

No. Cir.	Cap. of Mains Amps.	No. of Box Only	Plug Fuses No.	Each
2	30		RTP3G02	\$32.00
4	30		RTP3G04	42.00
6	60		RTP3G06	52.00
8	60		RTP3G08	62.00
..
..
..

Numbers and price include combined panel, barriers, code gage steel cabinet and tumbler switches. Fuses not included in price.

Standard drilling furnished on all lighting panelboard boxes unless otherwise specified on order.

For combination panels having some circuits tumbler switched and some with fuses only in branch circuits requiring only one door opening, price should be determined

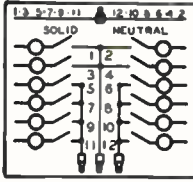
by figuring the panel as occupying the same space as an equivalent panel with tumbler switches in all circuits less a deduction of \$1.00 each for each tumbler switch omitted. If split bus bars are required between two sections add \$6.00 to the price.

Solderless lugs standard in the mains.
When ordering panelboards, specify surface or flush mounting. Flush mounting will be furnished unless surface is specified.

Trumbull Switch and Fuse Lighting Panelboards

Standard Type

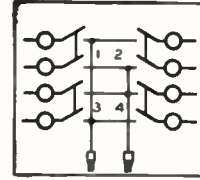
Nos. NTP4 and NTC4
4-Wire Mains, 3-Phase, 125-250 Volts
2-Wire Branches, 125 Volts
 30-Ampere S. P. Tumbler Switches
 Single Fuse in One Leg
 Solid Neutral Bar in Other Leg



Mains with Lugs Only

No. Mains Cir. Amps.	Cap. of Box Only	No. of Fuses	Single Door			Door-In-Door		
			*Plug Fuses No.	Cart. Fuses No.	Each	*Plug Fuses No.	Cart. Fuses No.	Each
4	60	51201	TP204L	TC204L	\$42.00	TP204LD	TC204LD	\$62.00
6	100	51202	TP206L	TC206L	52.00	TP206LD	TC206LD	68.00
8	100	51203	TP208L	TC208L	62.00	TP208LD	TC208LD	78.00
10	100	51204	TP210L	TC210L	72.00	TP210LD	TC210LD	88.00
12	200	51205	TP212L	TC212L	82.00	TP212LD	TC212LD	98.00
14	200	51206	TP214L	TC214L	94.00	TP214LD	TC214LD	110.00
16	200	51207	TP216L	TC216L	104.00	TP216LD	TC216LD	120.00
18	200	51208	TP218L	TC218L	114.00	TP218LD	TC218LD	130.00
20	200	51209	TP220L	TC220L	124.00	TP220LD	TC220LD	140.00

***Nos. TP2 and TC2**
2-Wire Mains, 125 Volts
2-Wire Branches, 125 Volts
 30-Ampere D. P. Tumbler Switches
 Two Fuses in Branches
 No Neutral Bar



Mains with Lugs Only

No. Mains Cir. Amps.	Cap. of Box Only	No. of Fuses	Single Door			Door-In-Door		
			Plug Fuses No.	Cart. Fuses No.	Each	Plug Fuses No.	Cart. Fuses No.	Each
4	30	51202	NTP404F	NTC404F	\$54.00	NTP404FD	NTC404FD	\$66.00
8	60	51203	NTP408F	NTC408F	66.00	NTP408FD	NTC408FD	78.00
12	60	51204	NTP412F	NTC412F	78.00	NTP412FD	NTC412FD	90.00
16	60	51205	NTP416F	NTC416F	96.00	NTP416FD	NTC416FD	108.00
20	60	51206	NTP420F	NTC420F	108.00	NTP420FD	NTC420FD	120.00
24	60	51207	NTP424F	NTC424F	120.00	NTP424FD	NTC424FD	132.00
28	100	51208	NTP428F	NTC428F	132.00	NTP428FD	NTC428FD	144.00
32	100	51209	NTP432F	NTC432F	148.00	NTP432FD	NTC432FD	160.00
36	100	51210	NTP436F	NTC436F	170.00	NTP436FD	NTC436FD	180.00
40	100	51211	NTP440F	NTC440F	182.00	NTP440FD	NTC440FD	194.00

Mains with Safety Fuse

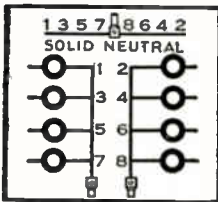
4	60	51203	TP204F	TC204F	\$58.00	TP204FD	TC204FD	\$74.00
6	100	51204	TP206F	TC206F	70.00	TP206FD	TC206FD	86.00
8	100	51205	TP208F	TC208F	80.00	TP208FD	TC208FD	96.00
10	100	51206	TP210F	TC210F	90.00	TP210FD	TC210FD	106.00
12	200	51208	TP212F	TC212F	110.00	TP212FD	TC212FD	126.00
14	200	51209	TP214F	TC214F	120.00	TP214FD	TC214FD	136.00
16	200	51210	TP216F	TC216F	130.00	TP216FD	TC216FD	146.00
18	200	51211	TP218F	TC218F	140.00	TP218FD	TC218FD	156.00
20	200	51212	TP220F	TC220F	150.00	TP220FD	TC220FD	166.00

Mains with Safety Fuse

4	30	51200	NTP404L	NTC404L	\$40.00	NTP404LD	NTC404LD	\$52.00
8	60	51201	NTP408L	NTC408L	52.00	NTP408LD	NTC408LD	64.00
12	60	51202	NTP412L	NTC412L	62.00	NTP412LD	NTC412LD	74.00
16	60	51203	NTP416L	NTC416L	78.00	NTP416LD	NTC416LD	90.00
20	60	51204	NTP420L	NTC420L	88.00	NTP420LD	NTC420LD	100.00
24	60	51205	NTP424L	NTC424L	100.00	NTP424LD	NTC424LD	112.00
28	100	51206	NTP428L	NTC428L	110.00	NTP428LD	NTC428LD	122.00
32	100	51207	NTP432L	NTC432L	120.00	NTP432LD	NTC432LD	132.00
36	100	51208	NTP436L	NTC436L	146.00	NTP436LD	NTC436LD	154.00
40	100	51209	NTP440L	NTC440L	156.00	NTP440LD	NTC440LD	164.00

Plug Fuse Type

No. NP3
3-Wire Mains, 125 or 250 Volts
2-Wire Branches, 125 Volts
 Single Plug Fuse in One Leg of Branches
 Solid Neutral Bar in Other Leg
 Single Door Construction



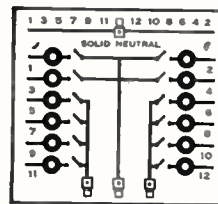
Mains with Lugs Only

Plug Fuses No.	No. Cir.	Each	Cap. of Mains Amps.	No. of Box Only	Approx. Ship. Wt. Lb.
NP316L	16	\$56.00	100	51201	56
NP324L	24	66.00	100	51202	63
NP332L	32	76.00	100	51203	68
NP340L	40	106.00	200	51204	85

Mains with Converti-Fuse

NP308F	8	\$60.00	60	51202	65
NP316F	16	80.00	100	51203	75
NP324F	24	90.00	100	51204	84
NP332F	32	105.00	100	51205	94
NP340F	40	136.00	200	51207	105

No. NP4
4-Wire Mains, 3-Phase, 125 or 250 Volts
2-Wire Branches, 125 Volts
 Single Plug Fuse in One Leg of Branches
 Solid Neutral Bar in Other Leg
 Single Door Construction



Mains with Lugs Only

Plug Fuses No.	No. Cir.	Each	Cap. of Mains Amps.	No. of Box Only	Approx. Ship. Wt. Lb.
NP416L	16	\$60.00	60	51201	56
NP424L	24	70.00	60	51202	63
NP432L	32	80.00	100	51203	68
NP440L	40	108.00	100	51204	85

Mains with Converti-Fuse

NP408F	8	\$70.00	30	51202	65
NP416F	16	84.00	60	51203	75
NP424F	24	94.00	60	51204	84
NP432F	32	110.00	100	51205	94
NP440F	40	140.00	100	51206	105

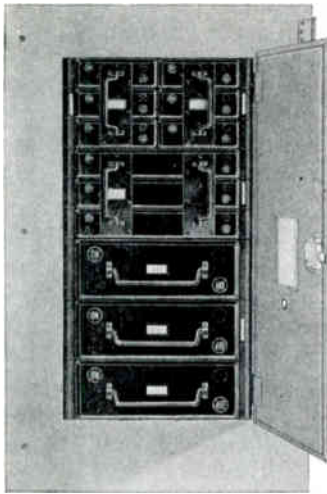
Numbers and price include combined panel, barriers, code gage steel cabinet and tumbler switches. Fuses not included in prices.

Standard drilling furnished on all lighting panelboard boxes unless otherwise specified on order. Solderless lugs standard in the mains. When ordering panelboards specify surface or flush mounting. Flush mounting will be furnished unless surface is specified.

*For combination panels having some circuits tumbler switched and some with fuses only in branch circuits requiring only one door opening, prices should be determined by figuring the panel as occupying the same space as an equivalent panel with tumbler switches in all circuits less a deduction of \$1.00 each for each tumbler switch omitted. If split bus bars are required between two sections add \$6.00 to the price as per above.

Trumbull Converte-Fuse Power Panelboards

With Enclosing Steel Cabinets



This panel is particularly adaptable where space is a limiting factor and rugged design and simplicity are desirable features.

APPLICATION—This type of panelboard is designed for 125-250 volts or 600-volt service. Branch circuits are available in 1, 2 or 3-pole, from 30 to 600 amperes, inclusive.

CONSTRUCTION—This panel consists of an assembly of unit bakelite sections mounted on a steel back plate, or channel iron construction.

Complete dead front design is provided—the individual base sections and removable caps being

made of bakelite. Sections are interchangeable. The caps not only serve as holders for the fuse, but when pulled, may act as a disconnect switch.

This panelboard is adaptable in either vertical or horizontal assembly. Solderless lugs standard in mains.

Base Prices—Main Capacity

Base price includes main lugs (either 2, 3 or 4-wire), top and bottom gutter, with respective sections of bus, box and front to circuit edge. Remaining equipment for complete panelboard included in circuit prices.

125 or 250 Volts Only

For Main or Branch Cir. Amperes	AMPERES				
	200	400	600	800	1200
200 and Under	\$20.00	\$30.00	\$50.00	\$80.00	\$125.00
400 and Under		50.00	70.00	110.00	150.00
600 and Under			90.00	150.00	190.00

600 Volts or Less

For Main or Branch Cir. Amperes	AMPERES				
	200	400	600	800	1200
200 and Under	\$37.00	\$47.00	\$67.00	\$93.00	\$137.00
400 and Under		69.00	87.00	124.00	162.00
600 and Under			100.00	162.00	200.00

For 250-volt panel only with 30, 60 or 100-ampere circuits only, no larger, requiring cabinets not over 6 inches deep with maximum 4-inch gutters and not exceeding 24X in height, (73-inch), mains not over 600 amperes, deduct \$10.00 from base price.

Circuit Prices

Includes circuit sections complete and portions of busbars, box and trim. All circuits interchangeable or convertible (fusible) downward.

X = 2 3/8 inches x full panel width.

1-Pole Branch Circuits											
Cap. Amps.	Comp. Sec. Each	*Space Only for Each Sec.	Ht. of Sec.	Type of Sec.	Cap. Amps.	Comp. Sec. Each	*Space Only for Each Sec.	Ht. of Sec.	Type of Sec.		
										125 or 250 V. Only, For 2 Circuits, Double Branch	
30-30	\$18.00	\$5.80	1X	A	100	\$9.00	\$5.80	1X	1/2A		
60-60	18.00	5.80	1X	A	200	21.00	5.80	1X	B		
100-100	18.00	5.80	1X	A	400	49.00	8.75	2X	C		
.....	.....	.....	.....	.....	600	110.00	56.00	2X	C		

800 V. or Less, For 2 Circuits, Double Branch												800 V. or Less, For 1 Circuit, Single Branch											
30-30	\$25.00	\$5.80	1X	A	100	\$25.00	\$5.80	1X	B														
60-60	25.00	5.80	1X	A	200	51.00	8.75	1 1/2X	BC														
.....	.....	.....	.....	.....	400	103.00	56.00	2X	C										

2-Pole Branch Circuits											
Cap. Amps.	Comp. Sec. Each	*Space Only for Each Sec.	Ht. of Sec.	Type of Sec.	Cap. Amps.	Comp. Sec. Each	*Space Only for Each Sec.	Ht. of Sec.	Type of Sec.		
										125 or 250 V. Only, For 2 Circuits, Double Branch	
30-30	\$17.00	\$5.80	1X	2B	100	\$18.00	\$11.50	2X	1/2A		
60-60	24.00	8.75	1X	2A	200	42.00	11.50	2X	B		
100-100	36.00	11.50	2X	A	400	97.00	16.75	4X	C		
.....	.....	.....	.....	.....	600	160.00	56.00	4X	C		

800 V. or Less, For 2 Circuits, Double Branch												800 V. or Less, For 1 Circuit, Single Branch											
30-30	\$37.00	\$11.50	2X	A	100	\$37.00	\$11.50	2X	B														
60-60	37.00	11.50	2X	A	200	81.00	16.75	3X	BC														
.....	.....	.....	.....	.....	400	152.00	56.00	4X	C										

3-Pole Branch Circuits											
Cap. Amps.	Comp. Sec. Each	*Space Only for Each Sec.	Ht. of Sec.	Type of Sec.	Cap. Amps.	Comp. Sec. Each	*Space Only for Each Sec.	Ht. of Sec.	Type of Sec.		
										125 or 250 V. Only, For 2 Circuits, Double Branch	
30-30	\$17.00	\$5.80	1X	3B	100	\$27.00	\$16.75	3X	1/2A		
60-60	33.00	11.50	1X	3A	200	63.00	16.75	3X	B		
100-100	54.00	16.75	3X	A	400	146.00	25.50	6X	C		
.....	.....	.....	.....	.....	600	210.00	56.00	6X	C		

800 V. or Less, For 2 Circuits, Double Branch												800 V. or Less, For 1 Circuit, Single Branch											
30-30	\$48.00	\$16.75	3X	A	100	\$48.00	\$16.75	3X	B														
60-60	48.00	16.75	3X	A	200	95.00	25.50	4 1/2X	BC														
.....	.....	.....	.....	.....	400	190.00	56.00	6X	C										

*This price is used where blank metal filler plates are desired to allow for future additions; or when required to make panel any definite height.

Additional Prices for Special Features

Neutral Bars, 3-Wire, Single Phase, 110 or 220 Volts, Solid Neutral Service

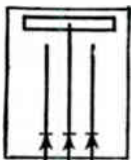
Neutral Bars, 4-Wire, 3-Phase, 120 or 208 Volts, Solid Neutral Service

MAIN SWITCHES.—Figure same as a single branch circuit, (1/2 of double branch) from circuit price after adding base price considering main switch as largest branch circuit.

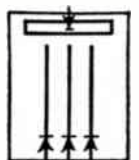
Additions for Neutral Bars

Price includes neutral bar, main lug, lug for each branch circuit, part of back plate, box and trim.

Capacity of Main Lug.....amperes	200	400	600	800	1200
Panel Complete with Cabinet.....each	\$14.00	25.00	30.00	40.00	63.00



3-Wire



4-Wire

†Unfused Meter Loop or Split Bus

Cap. of Main Lug.....amperes	200	400	600
Panel Complete with Cabinet... each	\$21.00	23.00	30.00

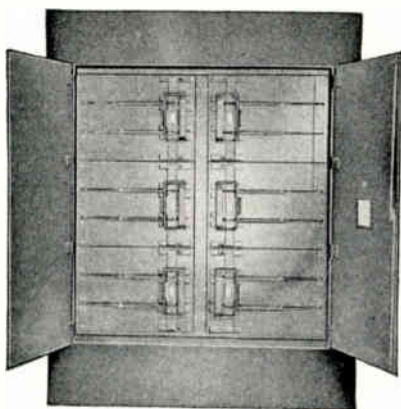
‡Sub-Feed, Through-Feed or Double Lugs

Cap. of Main Lug...amperes	200	400	600	800	1200
Panel Com. with Cabinet. ea.	\$12.00	24.00	36.00	48.00	60.00

†Price includes lugs and portion of busbars, back plate, box and trim that may be necessary.

Specify flush or surface mounting. Blank box-ends furnished unless knockout information accompanies order. Solderless lugs standard in the mains.

Trumbull Swing-Wa Power Panelboards



Swing-Wa type of construction provides a dead front safety type panelboard for heavy duty, light and power applications.

APPLICATION—This type of panelboard is available for 575 volts a.c. and 250 volts d.c. service. Branch circuits can be furnished in 1, 2 or 3-pole construction, 30 to 400 amperes inclusive.

CONSTRUCTION—Individual units are enclosed in their own protective steel compartment and possess common dimensions allowing for the maximum of interchangeability, flexibility and rearrangement of circuits. The individual units provide an ingenious simplified switching system, built into the cover and easily operated by hand. Equipped with a newly developed operating handle.

Full floating contacts and thermostatic contact reinforcements. Solderless lugs standard in mains.

Base Prices—Main Capacity

Base price includes main lugs (either single or 3-phase), top and bottom gutter, with respective sections of bus, box and front to circuit edge. Remaining equipment for complete panelboard included in circuit prices.

125 or 250 Volts Only

For Main or Branch Cir. Amperes	AMPERES				
	200	400	600	800	1200
200 and Under	\$22.00	\$33.00	\$55.00	\$90.00	\$140.00
400 and Under	.....	55.00	80.00	120.00	165.00

For Main or Branch Cir. Amperes	AMPERES				
	200	400	600	800	1200
200 and Under	\$40.00	\$50.00	\$75.00	\$100.00	\$150.00
400 and Under	.....	75.00	95.00	135.00	180.00

Circuit Prices

Reinforced spring type clips and silvered contact surfaces standard. Includes circuit sections complete and portions of busbars, box and trim.

X dimensions = 2 1/4 inches.

2-Pole Branch Circuits

Cap. Amps.	Comp. Sec. Each	Space Only For Sec. Each	Ht. of Sec.	Type of Sec.	Space Only For Sec. Each				
					Cap. Amps.	Comp. Sec. Each	Ht. of Sec.	Type of Sec.	
230 V. A.C., 250 V. D.C. Only, For 2 Circuits, Double Branch					230 V. A.C., 250 V. D.C. Only, For 1 Circuit, Single Branch				
60-60*	\$27.00	\$9.50	2X	SWD1-222	100	\$20.00	\$12.50	2X	SW2-223
100-100	40.00	12.50	2X	SWD5-223	200	46.00	12.50	3X	SW3-224
.....	.....	.....	.....	.....	400	107.00	18.50	4X	SW4-225

575 V. A.C. or Less, For 2 Circuits, Double Branch					575 V. A.C. or Less, For 1 Circuit, Single Branch				
30-30	\$42.00	\$12.50	2X	SWD5-261	100	\$42.00	\$12.50	2X	SW2-263
60-60	42.00	12.50	2X	SWD5-262	200	105.00	18.50	3X	SW3-264
.....	.....	.....	.....	.....	400	170.00	62.00	4X	SW4-265

3-Pole Branch Circuits

230 V. A.C., 250 V. D.C. Only For 2 Circuits, Double Branch					230 V. A.C., 250 V. D.C. Only For 1 Circuit, Single Branch				
60-60*	\$36.00	\$12.50	3X	SWD1-322	100	\$30.00	\$18.50	3X	SW2-323
100-100	60.00	18.50	3X	SWD5-323	200	69.00	18.50	4 1/2 X	SW3-324
.....	.....	.....	.....	.....	400	161.00	28.00	6X	SW4-325

575 V. A.C. or Less, For 2 Circuits, Double Branch					575 V. A.C. or Less, For 1 Circuit, Single Branch				
30-30	\$53.00	\$18.50	3X	SWD5-361	100	\$53.00	\$18.50	3X	SW2-363
60-60	53.00	18.50	3X	SWD5-362	200	105.00	28.00	4 1/2 X	SW3-364
.....	.....	.....	.....	.....	400	209.00	62.00	6X	SW4-365

*Available with 30-ampere fuse clips.

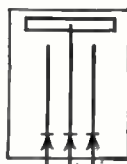
Prices for Connecting Busses on Multi-Section Panels

Panelboards whose circuit section in height exceeds 60 inches should be ordered as two separate panels of equal height, mounted in one box. Double lugs can be supplied on one of these panels to permit facilities for cable connection by the contractor. This combination is priced as two separate panels with addition for double lugs on one panel. When desired the two panels may be furnished with insulated and tapped bus bar connections in accordance with the following:

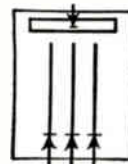
Total Amp. Cap. Mains	400	600	800	1200
2-Wire..... each	\$58.00	\$63.00	\$66.00	\$74.00
3-Wire..... each	83.00	90.00	95.00	106.00

Additional Prices for Special Features

Neutral Bars, 3-Wire, Single Phase, 110 or 220 Volts, Solid Neutral Service
 Neutral Bars, 4-Wire, 3-Phase, 120 or 208 Volts, Solid Neutral Service



3-Wire



4-Wire

MAIN SWITCHES.—Figure same as a single branch circuit, (1/2 of double branch) from circuit price after adding base price considering main switch as largest branch circuit.

Additions for Neutral Bars

Price includes neutral bar, main lug, lug for each branch circuit, part of plate, box and trim.

Cap. of Main Lug..... amps.	200	400	600	800	1200
Panel Comp. with Cabinet	.....	.....	.....	.....	.....
..... ea.	\$14.00	25.00	30.00	40.00	63.00

*Unfused Meter Loop or Split Bus

Cap. of Main Lug..... amperes	200	400	600
Panel Complete with Cabinet..... each	\$21.00	23.00	30.00

*Sub-Feed, Through-Feed or Double Lugs

Cap. of Main Lug..... amps.	200	400	600	800	1200
Panel Com. with Cabinet..... ea.	\$12.00	24.00	36.00	48.00	60.00

*Price includes lugs and portion of busbars, back plate, box and trim necessary.

Specify flush or surface mounting. Blank box-ends furnished unless knockout information accompanies order. Solderless lugs standard in the mains.

Trumbull Circuit Breaker Convertible Distribution Power Panelboards

Base Prices—Main Capacity (Up to 600 Volts A.C.)



This particular type of panelboard is adaptable where automatic overload current protection is desired for heavy duty light and power distribution.

APPLICATION— Available for 125-250 volts a.c. and d.c. systems and 600 volts a.c. Branch circuits are available from 15 to 600 amperes inclusive, 1 and 3-pole.

CONSTRUCTION— This type of panelboard is of the sectionalized type with breakers mounted on steel back plates, thereby making it readily possible to provide space in the cabinet for future additional circuits, or to interchange circuits when the occasion arises. The larger size circuit breakers above 50-ampere frame equipped with

removable trip units, thus allowing in certain instances desirable changes in capacity without removing the unit itself. Because of standard breaker dimensions, it is also possible to interchange units of different poles or capacities. Solderless lugs standard in mains.

NOTE—When ordering panelboards specify flush or surface mounting. Boxes without knockouts unless arrangement specified on order

Base price includes main lugs (either single or 3-phase), top and bottom gutter, with respective sections of bus, box and front to circuit edge. Remaining equipment for complete panelboard included in circuit prices.

MAIN BREAKERS—Figure same as branch circuit from circuit prices after adding base price considering main breaker as largest branch circuit.

X = 1 3/8 inches.

	Dimensions			
	30 inches	35 inches	40 inches	
Box Width.....	inches	9 1/4	11 1/4	11 1/4
Box Depth.....	inches	5	6 1/2	9
Gutter Width.....	inches			

	Prices				
	AMPERES				
	225	400	600	800	1000
225 and Under....	\$35.00	\$45.00	\$60.00	\$75.00	\$95.00
400 and Under....		60.00	75.00	90.00	110.00
600 and Under....			90.00	105.00	125.00

Branch Circuit Prices

Cap. Amps.	No. of Poles	Breaker Frame Size		*Space Only Each
		250 V. A.C. or 125 V. D.C. Each	600 V. A.C. and 250 V. D.C. Each	
15	1	\$7.00		\$3.00
20	1	7.00		3.00
25	1	7.00		3.00
35	1	8.00		3.00
50	1	8.00		3.00
50-Ampere, 2-Pole (2X), Breaker Frame Size				
15	2	\$13.00		\$4.00
20	2	13.00		4.00
25	2	13.00		4.00
35	2	15.00		4.00
50	2	15.00		4.00
50-Ampere, 3-Pole (3X), Breaker Frame Size				
15	3	\$19.00		\$6.00
20	3	19.00		6.00
25	3	19.00		6.00
35	3	22.00		6.00
50	3	22.00		6.00
50-Ampere, 2-Pole (2X), Breaker Frame Size				
15	2	\$16.00	\$26.00	\$4.00
20	2	16.00	26.00	4.00
25	2	16.00	26.00	4.00
35	2	18.00	28.00	4.00
50	2	18.00	28.00	4.00
50-Ampere, 3-Pole (3X), Breaker Frame Size				
15	3	\$22.00	\$33.00	\$6.00
20	3	22.00	33.00	6.00
25	3	22.00	33.00	6.00
35	3	25.00	36.00	6.00
50	3	25.00	36.00	6.00

Branch Circuit Prices

Cap. Amps.	No. of Poles	Breaker Frame Size		*Space Only Each
		250 V. A.C. or 125 V. D.C. Each	600 V. A.C. and 250 V. D.C. Each	
150	2	\$37.00	\$45.00	\$8.00
70	2	37.00	45.00	8.00
90	2	37.00	45.00	8.00
100	2	37.00	45.00	8.00
100-Ampere, 3-Pole (6X), Breaker Frame Size				
150	3	\$49.00	\$60.00	\$12.00
70	3	49.00	60.00	12.00
90	3	49.00	60.00	12.00
100	3	49.00	60.00	12.00
225-Ampere, 2-Pole (4X), Breaker Frame Size				
170	2	\$99.00	\$116.00	\$14.00
90	2	99.00	116.00	14.00
100	2	99.00	116.00	14.00
125	2	99.00	116.00	14.00
150	2	99.00	116.00	14.00
175	2	99.00	116.00	14.00
200	2	99.00	116.00	14.00
225	2	99.00	116.00	14.00
225-Ampere, 3-Pole (6X), Breaker Frame Size				
170	3	\$123.00	\$159.00	\$18.00
90	3	123.00	159.00	18.00
100	3	123.00	159.00	18.00
125	3	123.00	159.00	18.00
150	3	123.00	159.00	18.00
175	3	123.00	159.00	18.00
200	3	123.00	159.00	18.00
225	3	123.00	159.00	18.00
400-Ampere, 2-Pole (6X), Breaker Frame Size				
225	2	\$249.00	\$266.00	\$25.00
250	2	249.00	266.00	25.00
275	2	249.00	266.00	25.00
300	2	249.00	266.00	25.00
325	2	249.00	266.00	25.00
350	2	249.00	266.00	25.00
400	2	249.00	266.00	25.00
400-Ampere, 3-Pole (6X), Breaker Frame Size				
225	3	\$320.00	\$344.00	\$30.00
250	3	320.00	344.00	30.00
275	3	320.00	344.00	30.00
300	3	320.00	344.00	30.00
325	3	320.00	344.00	30.00
350	3	320.00	344.00	30.00
400	3	320.00	344.00	30.00
600-Ampere, 2-Pole (6X), Breaker Frame Size				
450	2	\$285.00	\$302.00	\$25.00
500	2	285.00	302.00	25.00
550	2	285.00	302.00	25.00
600	2	285.00	302.00	25.00
600-Ampere, 3-Pole (6X), Breaker Frame Size				
450	3	\$369.00	\$391.00	\$30.00
500	3	369.00	391.00	30.00
550	3	369.00	391.00	30.00
600	3	369.00	391.00	30.00

*Space Only price is used when circuits do not evenly balance; also when space is left for future additions.

†This rating to be used only when circuit is later to be changed to a rating of 70, 90, or 100 amperes.

‡These ratings to be used only when circuit is later to be changed to a rating of 125 to 225 amperes.

§This rating to be used only when circuit is later to be changed to a rating of 250 to 600 amperes.

||These circuits are non-convertible.

Pricing Information

In pricing there are six important steps: to avoid mistakes each one should be checked.

1. Select proper base price from table.
2. Add correct price for each branch circuit required as per first two columns of prices. Be sure to have correct ampere capacity, frame size and voltage rating.
3. Separate spaces per last column must be added when circuits do not evenly balance because of double branch construction for 50 and 100 ampere frame sizes or when future additions are to be provided for.
4. If solid neutral bar is required, add price additions as per following table:

Additions for Solid Neutral Bars					
Ampere Cap. of Neutral Bar.....	200	400	600	800	1000
Each.....	\$12.00	16.00	20.00	28.00	36.00

Price includes neutral bar, main lug, lug for each branch circuit, and portion of back plate, box and trim.

5. Extra features may be required such as lugs for feed-thru tables.

6. If panel is too large (over 72 inches high) to be built as a single panel, divide into two or more sections and price each section as a separate and distinct panelboard.

Additions for Single-Pole Breaker

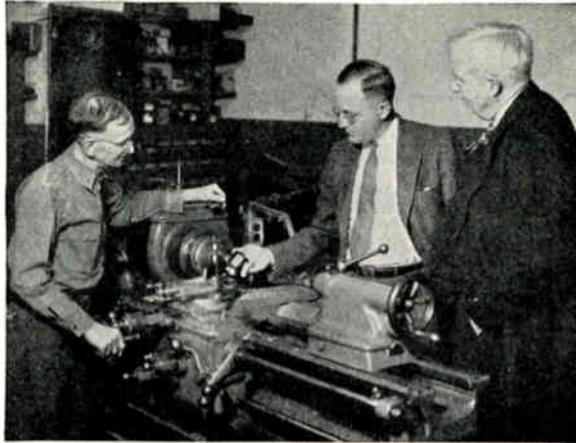
Solderless lugs—mains standard. Branch circuits available at following additions.

No. of Volts.....	600	250 or 600
Additions.....	each \$1.50	1.75 6.00
Amp. Frame.....	*50	100 225 600

*For 50 amperes, 250 volts all ratings and 50 amperes, 600 volts, 15, 20, 25 and 35-ampere ratings washer head screws are standard—solderless lugs not required.

Specify flush or surface mounting. Blank box-ends furnished unless knockout information accompanies order.

G-E Mazda Lamps



Graybar Lighting Service Prescribes Amount and Quality of Light for Real Light Conditioning

Light Conditioning is Profitable Lighting

Select G-E Mazda Lamps with the four basic principles of Light Conditioning firmly in mind:

1. Enough light.
2. Freedom from glare.
3. No sharp contrasts.
4. Light in enough places.

Light Conditioning is the business technique of fitting the lighting system to the work to be done; not the work to the system. It is smart, the sensible way to spend your lighting dollar because it stresses the importance of lighting efficiency and lamp efficiency.

Remember that when buying lamps, you are purchasing all those factors of profit and efficiency dependent on light. Think them over carefully, before spending a dollar to save a penny.

Ask for facts and figures on Light Conditioning.

Check How Light Conditioning Pays for Itself

In Manufacturing . . . increases efficiency . . . speeds up production . . . decreases spoilage and rejects . . . improves employee morale . . . reduces accidents . . . permits utilizing maximum floor space . . . allows better supervision . . . increases productive capacity of employees and equipment.

In Selling . . . attracts new customers . . . holds old ones . . . increases display effectiveness . . . enhances merchandise, makes selection easier . . . draws traffic to inactive departments . . . results in fewer returns, increased customer satisfaction . . . marks store as modern and progressive.

In Offices . . . increases property values . . . improves employee efficiency and morale . . . reduces costly errors and mistakes . . . creates more pleasant surroundings . . . reduces nervous and muscular

fatigue . . . eliminates a major cause of eyestrain . . . conserves eyesight, health and energy.

Cheap Lighting Demands Quality Lamps Operated at Proper Voltage

Figure it on the basis of Cheap Lighting, and you will always specify the best lamps, Mazda lamps bearing the G-E monogram.

That makes sound common sense when recalling that current costs from 10 to 20 times the price of the lamps. And that is why the real measure of a lamp cost is how efficiently the lamp converts the electrical energy into light. Yet slight variations in purity of materials, in design and in procedure can make a great deal of difference in efficiency, and what is more important, in whether you are getting your money's worth from your lighting dollar.

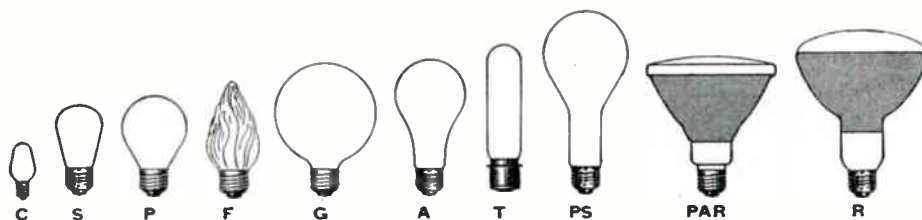
Mazda research and G-E manufacture are the best guarantee that you are receiving every bit of light that you pay for. The mark Mazda stands for years of continuing research and a constant check on processes throughout manufacture to insure high quality. At G-E factories the lamps are subjected to continuous tests and checks by inspectors of the Electrical Testing Laboratories, the largest independent laboratories of this type in the world.

When you add to G-E research and G-E manufacturing, Graybar distribution, you have a combination that is hard to equal. The result is the finest in lamps, readily available from adequate stocks plus intelligent understanding of your lighting needs.

When you burn lamps under their rated voltage, you waste useful electrical energy. Or if you burn them above their proper voltage, life is materially shortened. Make certain you get all the light you pay for by using lamps of the proper voltage.

G-E Mazda Lamps

Bulb Shapes



Base Designations



How to Order Lamps

All orders should give the following information:
QUANTITY.—Number of lamps desired. Purchasers will avoid delays and get best discount by ordering standard package quantities.
SIZE OF LAMPS.—Specify wattage of multiple lamps and lumens of street series lamps.
VOLTAGE.—For multiple lamps.
AMPERES.—For series lamps.
BULB.—For example; A-19, G-25, T-8, P-19, PS-30, etc. The letter in the bulb designation indicates its shape and the

figure its approximate diameter in eighths of an inch. Thus a PS-30 bulb is pear shaped and is approximately 30/8 or 3 3/4 inches in diameter. G indicates a round (globular), and T a tubular bulb. The letter A indicates the standard line bulb shape with inside frost, unless otherwise noted.
FINISH OF BULB.—Clear, inside frosted, white owl, daylight, white, etc.
BASE.—Medium screw, mogul screw, candelabra screw, etc.
SERVICE.—For example; projection, floodlight, locomotive headlight, etc.

Special Lamps

Any Mazda lamp requiring a change in construction from the standard, in voltage, bulb shape or finish, basing or special etching will take a special price, which may be obtained upon application. All orders for special lamps except special etching may be filled either short or in excess, within the limits of 10

per cent, except that on orders for ten lamps or less there will not be any shortage or excess. Orders for Mazda lamps with special etching may be filled either short or in excess by 5 per cent; except that on orders for less than forty lamps the shortage or excess may equal but not exceed two lamps.

Discount Schedule for Large Lamp Purchasers

Standard Package Discounts

A. LARGE MAZDA LAMPS.—Standard package discounts may be allowed on the purchase of any quantity of any large Mazda lamps for delivery at one time at one place, provided such purchase includes at least one standard package quantity defined as follows:

1. A standard package quantity is that No. in Standard Package, designated for each lamp in the manufacturer's price schedules, and the lamps in such a standard package quantity may be only of one voltage and finish.

2. An assortment of different large Mazda lamps which have the same designated No. in Standard Package, provided the total quantity of lamps in the assortment is equal to the designated No. in Standard Package, and lamps in such a standard package quantity may be of different voltages and finishes of bulb.

B. TYPE D LAMPS.—Standard package discounts may be allowed only on any purchase of an exact No. in Standard Package (or multiple thereof) as designated for each lamp in the manufacturer's price schedules, and the lamps in such a standard package quantity may be only of one wattage, voltage, and finish of bulb. However, Type D lamps of different finishes may be assorted to make a standard package quantity provided the quantity of lamps of any one finish is a multiple of six and provided all lamps are of the same wattage and voltage.

C. Under no circumstances may Type D lamps and large Mazda lamps be combined for the purpose of allowing standard package discounts.

To Purchasers without Contract

Any Purchase of Less than \$5.00 List Value.....	per cent	0
Any Purchase of \$5.00 List Value, but Less Than Standard Package Quantities for Delivery at One Time to One Place.....	per cent	15
Any Purchase of at Least One Standard Package Quantity as Provided Above for Delivery at One Time to One Place.....	per cent	20

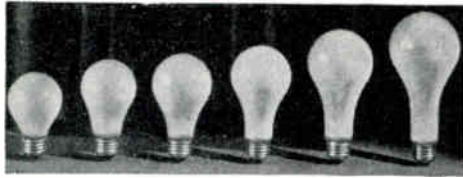
To Purchasers Under Forms E and CE Contract

Basis of Form E or CE Contract	Standard Package Discount as Provided Above	Broken Package Discount	Minimum Net Purchases Under Each Basis to Reach Next Higher Basis
Less Than \$150.00	20%	15%	\$153.85
150.00	22%	17%	256.58
250.00	24%	19%	513.52
500.00	26%	21%	1,027.78
1,000.00	28%	23%	2,571.43
2,500.00	30%	25%	5,147.06
5,000.00	32%	27%	10,149.25
10,000.00	33%	28%	20,303.03
20,000.00	34%	29%	30,461.54
30,000.00	35%	30%	50,781.25
50,000.00	36%	31%	101,587.30
100,000.00	37%	32%	152,419.35
150,000.00	38%	33%	228,688.53
225,000.00	39%	34%	305,000.00
300,000.00	40%	35%	.....

Provision is made for contracts on less than the \$150.00 basis in order that purchasers not at the time eligible to at least the \$150.00 basis, may obtain the greatest discounts justified by their total purchases within a year, in case purchases amount to \$150.00 or more.

G-E Mazda General Lighting Service Lamps

110, 115, and 120 Volts



A-19 A-19 A-19 A-21 A-23 A-25



T-24

For ordinary use in homes, stores, offices, schools and factories. The light maintenance, particularly in the lamps of higher wattage, is best when lamps are burned vertically, base up.

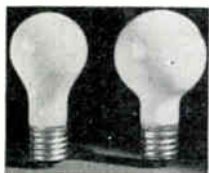
Finishes: clear, inside frosted for diffusion; white bowl for open type equipment.

Medium bipost base lamp is made of hard glass in a small bulb permitting smaller size lighting equipment. Resistant to bulb failure resulting from contact with rain or snow.

Medium Screw Base

No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
15	\$.10	A-15, Inside Frosted	15A15	120
25	.10	A-19, Inside Frosted	25A	120
40	.13	A-19, Inside Frosted	40A	120
50	.13	A-19, Inside Frosted	50A	120
60	.13	A-19, Inside Frosted	60A	120
75	.15	A-21, Inside Frosted	75A	120
100	.15	A-23, Inside Frosted	100A	120
150	.20	A-25, Inside Frosted	150A	60
150	.20	A-25, Clear	150A/CL	60
150	.25	A-25, Inside White Bowl	150A/WB	60
200	.27	PS-30, Clear	200	60
200	.27	PS-30, Inside Frosted	200/IF	60
200	.32	PS-30, Inside White Bowl	200/WB	60
300	.45	PS-35, Clear (750 Hours)	300M	24
300	.50	PS-35, Inside Frosted (750 Hours)	300M/IF	24
300	.50	PS-35, Inside White Bowl (750 Hours)	300M/WB	24
Mogul Screw Base				
300	\$.65	PS-35, Clear (1000 Hours)	300	24
300	.70	PS-35, Inside Frosted (1000 Hours)	300/IF	24
300	.70	PS-35, Inside White Bowl (1000 Hours)	300/WB	24
500	1.10	PS-40, Clear	500	12
500	1.20	PS-40, Inside Frosted	500/IF	12
500	1.20	PS-40, Inside White Bowl	500/WB	12
750	3.25	PS-52, Clear	750	6
750	3.45	PS-52, Inside Frosted	750/IF	6
750	3.45	PS-52, Inside White Bowl	750/WB	6
1000	3.50	PS-52, Clear	1000	6
1000	3.70	PS-52, Inside Frosted	1000/IF	6
1000	3.70	PS-52, Inside White Bowl	1000/WB	6
1500	5.25	PS-52, Clear	1500	6
1500	5.55	PS-52, Inside Frosted	1500/IF	6
1500	5.55	PS-52, Inside White Bowl	1500/WB	6
Medium Bipost Base				
750	\$3.50	T-24, Inside Frosted	750T24	6
1000	3.75	T-24, Inside Frosted	1M/T24	6

G-E Mazda Three-Lite Lamps



PS-25 G-30

Mogul Screw Base

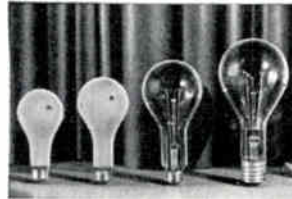
110, 115, and 120 Volts

Has two separate filaments in a single bulb. Each filament of different wattage may be lighted separately or in combination with the other to produce three levels of illumination.

No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
50-100-150	\$.45	PS-25, Inside Frosted	50/150	60
100-200-300	.60	G-30, Inside Frosted Indirect	100/300	24

G-E Mazda Daylight Lamps

110, 115, and 120 Volts



A-23 A-25 PS-30 PS-35

Due to its blue bulb, this lamp emits a whiter light which is a partial step toward natural daylight.

Has many industrial and commercial applications.

Medium Screw Base

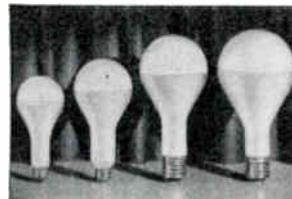
No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
60	\$.25	A-19, Inside Frosted	60A/D	120
100	.25	A-23, Inside Frosted	100A/D	120
150	.40	A-25, Clear	150A/DCL	60
150	.45	A-25, Inside Frosted	150A/D	60
200	.70	PS-30, Clear	200/D	60
200	.75	PS-30, Inside Frosted	200/DIF	60

Mogul Screw Base

No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
300	\$1.10	PS-35, Clear	300/D	24
300	1.20	PS-35, Inside Frosted	300/DIF	24
500	1.85	PS-40, Clear	500/D	12
500	1.95	PS-40, Inside Frosted	500/DIF	12

G-E Mazda Silvered Bowl Lamps

110, 115, and 120 Volts



A-25 PS-30 PS-35 PS-40

For indirect lighting applications. The permanent coating of mirror silver on the bowl is a highly efficient reflecting surface, built right into the lamp itself. The silver is protected from peeling or tarnishing by coatings of copper and aluminum.

Medium Screw Base

No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
60	\$.23	A-19, Inside Frosted	60A/SB	120
100	.25	A-23, Inside Frosted	100A/SB	120
*150	.45	A-25, Inside Frosted	150A/SB	60
*200	.62	PS-30, Inside Frosted	200/SBIF	60

Mogul Screw Base

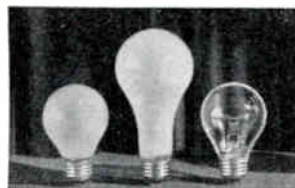
No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
*300	\$1.10	PS-35, Inside Frosted	300/SBIF	24
*500	1.70	PS-40, Inside Frosted	500/SBIF	12
*750	4.75	PS-52, Inside Frosted	750/SBIF	6
*1000	5.00	PS-52, Inside Frosted	1000/SBIF	6

*Should be used only in porcelain sockets and in fixtures so designed that the temperatures of the lamp and fixture do not exceed limits for satisfactory operation.

G-E Mazda Vibration and Rough Service Lamps

Medium Screw Base

110, 115, and 120 Volts



A-19 A-23 P-19

Rough service lamp withstands severe shock and bumps, as with extension cords.

Vibration service lamp designed to withstand high frequency vibration such as is produced by high-speed machinery.

Rough Service

No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
50	\$.25	A-19, Inside Frosted	50A/RS	120
100	.35	A-23, Inside Frosted	100A/RS	120

Vibration Service

50	\$.20	P-19, Clear	50P	120
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G-E Mazda High Voltage Service Lamps

220, 230, 240, 250, and 260 Volts

Less rugged and less efficient than the 110-120-volt lamps, but are available for use in the few locations where only the higher voltage is obtainable.

Medium Screw Base

No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
25	\$.22	A-19, Inside Frosted	25A	120
*50	.22	A-21, Inside Frosted	50A21	120
100	.31	A-23, Inside Frosted	100A	120
200	.60	PS-30, Clear	200	60
200	.65	PS-30, Inside Frosted	200/IF	60

Mogul Screw Base

300	\$1.00	PS-35, Clear	300	24
300	1.10	PS-35, Inside Frosted	300/IF	24
500	1.80	PS-40, Clear	500	12
500	1.90	PS-40, Inside Frosted	500/IF	12
750	4.25	PS-52, Clear	750	6
750	4.50	PS-52, Inside Frosted	750/IF	6
1000	4.75	PS-52, Clear	1000	6
1000	5.00	PS-52, Inside Frosted	1000/IF	6

*Can be obtained in 275 and 300 volts for mine lighting service, 33 cents each.

G-E Mazda Country Home Service Lamps

Medium Screw Base

28-32 Volts

Designed for battery-generator sets as used on farms.

Prices apply only to lamps which are designed for operation on 28-32-volt circuits, and not to individual voltages within this range.

When ordering, specify—Country Home, 28-32 volts.

No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
15	\$.20	A-17, Inside Frosted	15A	120
25	.20	A-19, Inside Frosted	25A	120
50	.20	A-21, Inside Frosted	50A21	120
100	.33	A-23, Inside Frosted	100A	120

G-E Type D Lamps

Medium Screw Base

110, 115, and 120 Volts

A good quality lamp for use in the home. It is not subject to as rigid inspection as the Mazda lamp.

No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
30	\$.10	G-19, Inside Frosted	D30	60
†‡30	.10	G-19, Outside Colored	D30/†	60
60	.10	A-19, Inside Frosted	D60	60
†60	.10	A-19, White	D60/W	60

Three Lite—Medium Screw Base

30-70-100	\$.25	A-21, Inside Frosted	D30/100	60
50-100-150	.30	A-25, Inside Frosted	D50/150	60

†Not recommended for outdoor use.

‡Furnished in red (R), blue (B), green (G), amber-orange (AO), rose (RO), white (W), ivory (V), or flametint (FT). Substitute color symbol in place of † in ordering abbreviation, thus: D30/W.

G-E Mazda Night Light Lamps

Candelabra Screw Base

110-125 Volts



C-7

Designed for small plug-in receptacles to be used as night lights in homes.

Packed 120 in a standard package.

No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
7	\$.10	C-7, Clear	7C7	120
7	.10	C-7, White	7C7/W	120

G-E Mazda Glow Lamps



S-14 S-14 G-10 G-10 T-4 1/2

A glow lamp produces light through the agency of electrically excited rare gases. Has no filaments and is not seriously affected by vibration and voltage fluctuation. Operates directly from commercial lighting circuits without the use of accessory devices. Used as pilots, indicators, and signals; as a stroboscopic source; as oscillators; in the home as night lights; in public buildings as exit lights.

The 2 1/2-watt lamp is adapted for use as a fluorescent exciter where simplicity and low cost are important.

Medium Screw Base

No. of Watts	Each	No. of Volts	Bulb	Light Characteristics	No. in Std. Pkg.
3	\$.60	115	S-14, Clear	Neon	10
3	.65	115	S-14, Sprayed Red	Neon	10
2 1/2	.50	115	S-14, Clear	Argon	10
2	.50	115	S-14, Clear	Neon	10
2	.55	115	S-14, Sprayed Red	Neon	10
1	.40	115	G-10, Clear	Neon	10
1	.40	220	G-10, Clear	Neon	10
1/2	.40	115	G-10, Clear	Neon	10

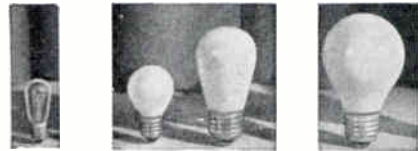
Candelabra Screw Base

1/4	.40	115	T-4 1/2, Clear	Neon	10
1/4	.50	115	T-4 1/2, Clear	Argon	10

G-E Mazda Lamps

For Display Lighting

110, 115, and 120 Volts



S-6 S-11 S-14 A-19

The inside colored lamps are particularly adaptable to exposed lamp signs and colorful displays where the lamps themselves are visible and form the pattern of the display.

Medium Screw Base

No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
6	\$.15	S-14, Clear	6S14	120
6	.15	S-14, Inside Frosted	6S14/IF	120
6	.20	S-14, Inside Colored	6S14/§	120
7 1/2	.10	G-11, Outside White	7 1/2 G/W	120
7 1/2	.10	G-11, Outside Red	7 1/2 G/R	120
10	.13	S-14, Clear	10S14	120
10	.13	S-14, Inside Frosted	10S14/IF	120
10	.18	S-14, Inside Colored	10S14/§	120
11 25	.19	A-19, Inside Colored	25A/	120

Candelabra Screw Base

6	\$.15	S-6, Clear	6S6	120
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Intermediate Screw Base

10	\$.15	S-11, Clear	10S11N	120
¶10	.20	S-11, Inside Colored	10S11N/¶	120

§Furnished in red (R), blue (B), green (G), yellow (Y), amber-orange (AO), or old rose (RO). Substitute color symbol in place of § in ordering abbreviation, thus: 6S14/R.

¶Furnished in red (R), blue (B), green (G), yellow (Y), amber-orange (AO), flametint (FT), ivory (V), or old rose (RO). Substitute color symbol in place of ¶ in ordering abbreviation, thus: 25A/FT.

¶Furnished in red (R), blue (B), green (G), yellow (Y), amber-orange (AO), flametint (FT), or white (W). Substitute color symbol in place of ¶ in ordering abbreviation, thus: 10S11N/FT.

G-E Mazda Luminline Lamps
Disc Base
110, 115, and 120 Volts



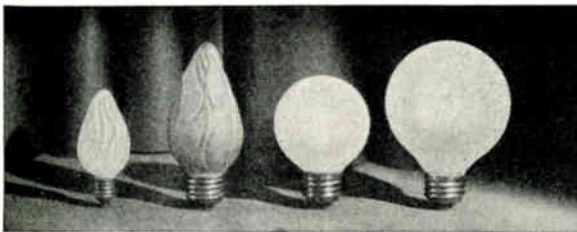
T-8

Provides continuous lines of clear or colored light of low brightness. Ideally suited to modern decorative concepts for built-in illumination or application decoration; for lighted displays, niches, mirrors, etc.

No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	Over-all Lgth. In.	No. in Std. Pkg.
30	\$.85	T-8, Clear	L30	17 3/4	24
30	.85	T-8, Inside Frosted	L30/IF	17 3/4	24
*†30	.95	T-8, Colored	L30/†	17 3/4	24
40	.75	T-8, Clear	L40	11 3/4	24
40	.75	T-8, Inside Frosted	L40/IF	11 3/4	24
*†40	.85	T-8, Colored	L40/†	11 3/4	24
60	.85	T-8, Clear	L60	17 3/4	24
60	.85	T-8, Inside Frosted	L60/IF	17 3/4	24
*†60	.95	T-8, Colored	L60/†	17 3/4	24

*Not recommended for outdoor use.
†Inside colored in white (W), straw (ST), orange (O), moonlight blue (MB), surprise pink (SPK), or emerald (EM). Substitute color symbol in place of † in ordering abbreviation, thus: L30/SPK.

G-E Mazda Decorative Lamps
110, 115, and 120 Volts



F-10 F-15 G-18 1/2 G-25

Used in homes, clubs, lobbies, and public buildings, where the bulb shape is related to the artistic design of the luminaire. Not recommended for outdoor use.

Medium Screw Base

No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
25	\$.15	F-15	25F/★	120
25	.30	G-18 1/2	25G18 1/2/★	120
25	.35	G-25	25G25/★	60
40	.35	G-25	40G/★	60

Candelabra Base

15	\$.20	F-10	15FC/★	60
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★Furnished in flametint (FT), white (W), or ivory (V). Substitute color symbol in place of ★ in ordering abbreviation, thus: 25F/V.

G-E Mazda Natural Colored Lamps

Medium Screw Base
110, 115, and 120 Volts

No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
110	\$.40	S-14	10S14/N†	120
110	.50	S-14	10S14/NR	120
125	.40	A-19	25A/N†	120
125	.50	A-19	25A/NR	120
140	.40	A-21	40A/N†	120
140	.50	A-21	40A/NR	120
160	.45	A-21	60A21/N†	120
160	.55	A-21	60A21/NR	120

†Furnished in amber (A), blue (B), or green (G). Amber regularly furnished in light shade. Dark shade amber, used in photographic work, can be furnished at same price. Blue shade does not include daylight blue or photographic blue. Green comes in one shade only. Substitute color symbol in place of † in ordering abbreviation, thus: 10S14/NG.

‡Ruby color (R) furnished in light shade. Dark shade ruby, used in photographic work, can be furnished at same price.

G-E Mazda Projector and Reflector Lamps
110, 115 and 120 Volts



PAR-38, Projector Flood PAR-38, Projector Spot R-40, Reflector

The projector flood and spot lamps may be used indoors or outdoors; wherever reflectors must be free from the effects of weather, vapor, dust and deterioration. Made of hard glass.

The reflector flood and spot lamps provide a concentrated beam for feature store and window displays, or a spread beam for floodlighting interiors and operations. Not for outdoor use.

Projector Lamps

Spot Lamp—Medium Skirted Base Lamp

No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
1150	\$1.40	PAR-38	150PAR/SP	12
1150	\$1.40	PAR-38	150PAR/FL	12

Reflector Lamps

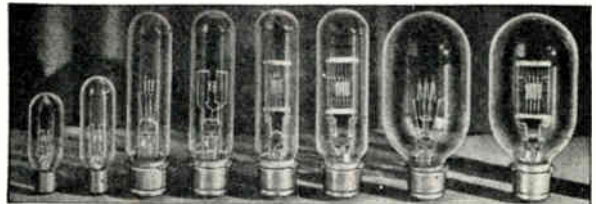
Spot Lamp—Medium Screw Base

1150	\$.95	R-40, Inside Frosted...	150R/SP	12
11300	1.70	R-40, Inside Frosted...	300R/SP	12
1150	\$.95	R-40, Inside Frosted...	150R/FL	12
11300	1.70	R-40, Inside Frosted...	300R/FL	12

‡Should be burned only in porcelain sockets.
¶May not give satisfactory performance if any accessory lighting equipment is attached to, or touches, glass bulb.

G-E Mazda Motion Picture and Stereopticon Projection Service Lamps

100, 105, 110, 115, and 120 Volts



T-8 T-8 T-10 T-10 T-10 T-12 T-20 T-20

Characterized by extreme concentration of light source, made possible by a highly developed technique in the forming, treating, and mounting of filaments.

Single Contact Bayonet Candelabra Base

No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	Rated Max. Life Hours	Aver. Light Ctr. Lgth. In.	Over-all Lgth. In.	Aver. Light Ctr. Lgth. In.	No. in Std. Pkg.
100	\$.80	T-8, Clear	100T8SC	50	3 1/8	††1 1/8	††1 1/8	24
200	1.30	T-8, Clear	200T8SC	25	3 5/8	††1 3/8	††1 3/8	24
200	\$2.00	T-10, Clear	200T10P	50	5 3/4	††2 3/16	††2 3/16	24
300	2.70	T-10, Clear	300T10P	25	5 3/4	††2 3/16	††2 3/16	24
**500	3.50	T-10	500T10P	25	5 3/4	††2 3/16	††2 3/16	24
500	2.20	T-20, Clear	500T20P	50	5 3/4	††2 3/16	††2 3/16	6
**750	4.10	T-12	750T12P	25	5 3/4	††2 3/16	††2 3/16	24
1000	4.50	T-20, Clear	IM/T20MP	25	5 3/4	††2 3/16	††2 3/16	6
**1000	6.00	T-12	IM/T12P	10	5 3/4	††2 3/16	††2 3/16	24

Mogul Prefocus Base

1000	\$4.75	T-20, Clear	IM/T20P	50	9 1/2	††3 3/16	††3 3/16	6
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Medium Screw Base

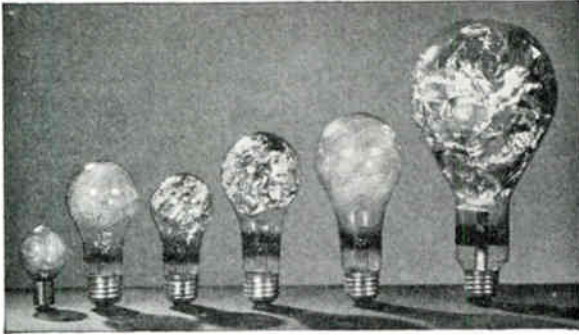
200	\$2.00	T-10, Clear	200T10	50	5 1/2	3	3	24
500	2.20	T-20, Clear	500T20	50	5 1/2	3	3	6

Mogul Screw Base

1000	\$4.75	T-20, Clear	IM/T20	50	9 1/2	4 3/4	4 3/4	6
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**Clear bulb with opaque end.
††Light center length is distance from center of light source to top of base pins.
‡‡Light center length is distance from center of light source to top of base fin.

G-E Mazda Photoflash Lamps



No. 5 No. 16A No. 11A No. 21 No. 31 No. 75

No. 5 Synchro-Press

A midget photoflash lamp with a wide peak of illumination for all-around use. Contains fine aluminum wire.

Flash on batteries only. Total light output, 14,000 to 16,000 lumen seconds. Bulb; B-11, clear, single contact bayonet base.

Packed 60 in a standard package.

No. 5 each \$.13

No. 16A Synchro-Press

Has wide illumination peak; recommended for all-around press and commercial use. Contains fine aluminum wire.

Flash on batteries only. Total light output, 40,000 to 45,000 lumen seconds. Bulb; A-17, clear, medium screw base.

Packed 60 in a standard package.

No. 16A each \$.15

No. 11A Synchro-Press

An amateur lamp with high peak illumination best for open flash shots. Contains aluminum foil.

Operates on 3 to 125 volts. Total light output, 18,000 to 22,000 lumen seconds. Bulb; A-15, clear, medium screw base.

Packed 60 in a standard package.

No. 11A each \$.13

No. 21 Synchro-Press

Similar to No. 11A in construction and application. Has extra covering power for press use and between-the-lens shutter synchronizers.

Operates on 3 to 125 volts. Total light output, 50,000 to 60,000 lumen seconds. Bulb; A-19, clear, medium screw base.

Packed 60 in a standard package.

No. 21 each \$.15

No. 21B Synchro-Press

Same construction as No. 21, with blue filter coating for correct rendition with outdoor type of color films. Light output approximately one-third of No. 21.

Bulb; A-19, clear, medium screw base.

Packed 60 in a standard package.

No. 21B each \$.20

No. 31 Focal Plane

Specifically for synchronized use with focal plane shutter cameras, up to and including 4x5-inch negative size. Has ultra-long peak of illumination.

Flash on batteries only. Total light output, 70,000 to 80,000 lumen seconds. Bulb; A-21, clear, medium screw base.

Packed 60 in a standard package.

No. 31 each \$.23

No. 75

Has extremely high peak of illumination. For use where great intensities of light from a single source are desired. Not designed for synchronized use. Aluminum foil filling.

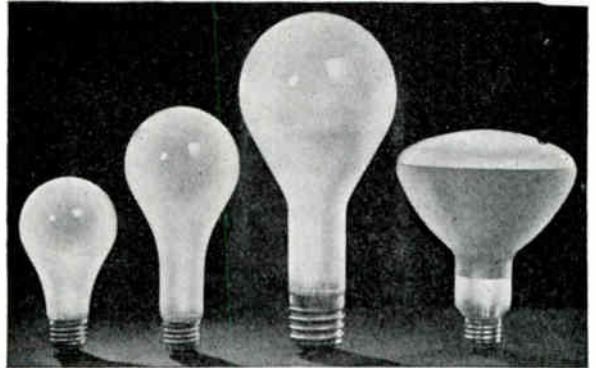
Operates on 3 to 125 volts. Total light output, 160,000 to 180,000 lumen seconds. Bulb; PS-35, clear, medium screw base.

Packed 24 in a standard package.

No. 75 each \$.55

G-E Mazda Photoflood Lamps

105-120 Volts, A.C. or D.C.



No. 1 No. 2 No. 4 No. R2

No. 1

Draws 250 watts at 115 volts photographically equal to as much as 750 watts in standard lighting lamps.

Rated life, 3 hours at 115 volts. Bulb; A-21, inside frosted, medium screw base.

Packed 60 in a standard package.

No. 1 each \$.15

No. 2

Draws 500 watts at 115 volts, but photographically is equal to as much as 1500 watts in standard lighting lamps.

Rated life, 6 hours at 115 volts. Bulb; A-25, inside frosted, medium screw base.

Packed 24 in a standard package.

No. 2 each \$.30

No. 4

Draws 1000 watts at 115 volts, and is much more effective photographically than the regular 1000-watt lamp.

Rated life, 10 hours at 115 volts. Bulb; PS-35, inside frosted, mogul screw base.

Packed 24 in a standard package.

No. 4 each \$ 1.20

No. R2

Same as No. 2 in current consumption, light output and life. Specially shaped bulb, with inside coating of mirror aluminum redirects the light so that the most effective illumination is obtained within a 60° zone.

Diameter, 5 inches; overall, 6½ inches. Bulb; R-40, inside frosted, medium screw base.

Packed 12 in a standard package.

No. R2 each \$.85

Daylight Bulb

Same characteristics as standard photoflood lamps except for inside frosted daylight bulb. Useful for color photography, especially where daylight and artificial light must be mixed.

No.	Medium Screw Base		Mogul Screw Base
	B1	B2	B4
Each	\$.30	.60	1.75
Rated Life at 115 V. Hours	3	6	10
No. in Standard Package	60	24	24

G-E Mazda Photographic Enlarger Lamps

105-120 Volts

Single Contact Bayonet Base

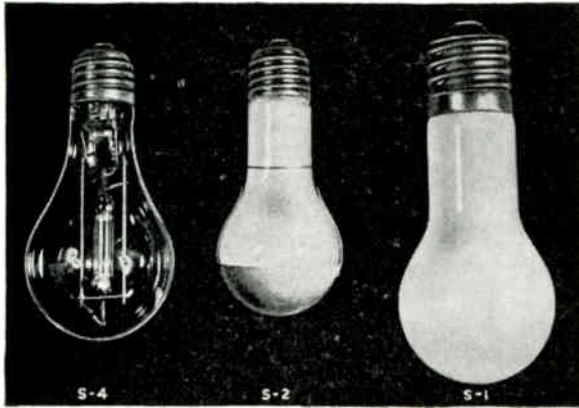
No.	White Each	No. of Watts	Bulb	Rated Life at 115 V. Hours	No. in Std. Pkg.
111	\$.35	75	S-11	25	120

Medium Screw Base

211	\$.25	75	A-21	100	60
212	.25	150	A-21	100	60
*213	.25	250	A-21	2	60
301	.75	300	PS-30	100	24
302	.75	500	PS-30	100	24
*303	.75	500	PS-30	6	24

*Limited life; photoflood type.

G-E Mazda Sunlight Lamps



A-21 A-17 PS-22

Produces most of the beneficial effects of the ultra-violet.

No. S-4—Admedium Screw Base

Emits characteristic blue-green light of mercury spectrum. For a total input of 120 watts, a fixture containing this lamp, at a distance of 54 inches, produces ultraviolet of about the intensity of midsummer noonday sunlight. Has A-21 bulb.
No. S-4..... each **\$8.50**

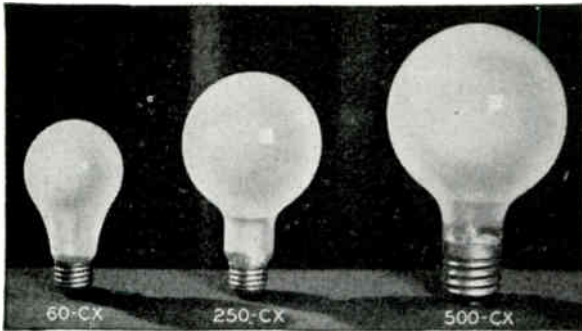
No. S-1—Mogul Screw Base

Has approximately the same ultraviolet potency as the No. S-4; delivers a large proportion of visible light. Total input, 500 watts; enables lamp to deliver more heat energy. With PS-22 bulb.
No. S-1..... each **\$5.75**

No. S-2—Admedium Screw Base

A mild source of ultraviolet for use where the Nos. S-1 or S-4 are not desirable. Total input, 130 watts. Has A-17 bulb.
No. S-2..... each **\$3.75**

G-E Mazda CX Lamps



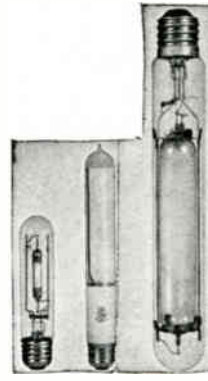
A-19 G-30 G-38

A source of energy widely used on poultry and other animals. Consists essentially of a tungsten filament in an inside frosted bulb of special ultraviolet-transmitting glass. Also emits infrared (heat energy), and is widely used as a heat lamp. Its production of ultraviolet is so small that it is not used for irradiation of human beings, who can benefit more from its infrared.

Operates directly on a.c. or d.c., without the use of transformers or other regulating devices.

No. of Watts		Medium Screw Base		No. in Std. Pkg.
Each	Bulb			
60	A-19.....			48
250	G-30.....			24
		Mogul Screw Base		
500	G-38.....			12

G-E Type H Mazda Mercury Lamps



T-10 T-9 T-16

Type H Mercury Lamp generates up to 80 per cent more light per watts than do other illuminants in general use. Designed for use on standard lighting circuits with special auxiliary equipment designed to produce correct lamp starting and operating values.

When used in combination with equal lumens of incandescent light, objectives are seen in the approximate daylight colors. Several minutes are required for mercury lamps to come up to full brilliance.

Type H-1, 400 watts, consists of an interior arc tube, containing the electrodes and mercury, enclosed within an outer tubular bulb which makes the lamp less subject to the effects of surrounding temperature.

Orders should specify whether lamps are for base up or base down operation.

Type H-2, 250 watts, has only a single bulb. Sensitive to moving air and should be used in equipment which protects it from air currents. May be burned in any position.

Type H-4, 100 watts, is sometimes referred to as a capillary lamp, because the arc discharge takes place within a small capsule-like tube of quartz. The outer bulb serves merely as a protective container.

No.	Mogul Screw Base	Med. Screw Base	Adm. Base
No.....	*A-H1-		
	*B-H1	A-H2	A-H4
Each.....	\$11.00	8.50	9.50
†No. of Watts.....	400	250	100
Outer Bulb, Clear.....	T-16	T-9	T-10
‡§Initial Lumens..... per watt	40	30	35
‡Lumens per watt at 70% Rated Life...	33	25	28
¶Rated Average Laboratory Life... hours	2000	2000	1000
Maximum Overall Length..... inches	13	8	5½
Average Light Center Length... inches	7¾	5	3¼
Length of Light Source..... inches	6	4½	1
No. in Standard Package.....	6	12	6

*Burning position must be within 10° of vertical. The Type A-H1, for base up burning; Type B-H1, for base down burning.

†For total, add auxiliary watts.
‡Lumens per watt under specified test conditions.
§Initial lumens per watt apply after 100 hours of operation.
¶Life under specified test conditions with lamps turned off and restarted no oftener than once every 5 burning hours.

G-E Mazda Tubular Bulb Lamps

110, 115, and 120 Volts



T-10

This low wattage tubular lamp is used for show-case lighting, in shallow-depth displays, and in small trough-like reflectors.

Intermediate Screw Base

No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
25	\$.35	T-6½, Clear.....	2576½	60
		Medium Screw Base		
25	\$.25	T-10, Clear.....	25T10	60
25	.50	T-10, Reflector....	25T10IRFL	60
40	.85	T-8, Clear.....	40T8	24

G-E Mazda Floodlight and Spotlight Service Lamps

110, 115 and 120 Volts



G-30 G-40 G-40

Floodlight and spotlight lamps may be burned in any position from vertical base down to horizontal.

Floodlight Service

For use in floodlighting equipment designed to give a narrow beam of light which can be projected a relatively long distance.

No. of Watts		Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	Light Center Length Inches	No. in Std. Pkg.
250		\$1.15	G-30, Clear	250G/FL	3	24
500		\$2.10	G-40, Clear	500G/FL	4 1/4	12
1000		5.00	G-40, Clear	1M/G40FL	5 1/4	12

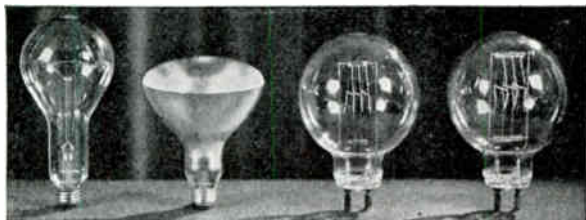
Spotlight Service

A properly adjusted mirror adds up to 50 per cent to the light in the beam.

No. of Watts		Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	Light Center Length Inches	No. in Std. Pkg.
100		\$.80	P-25, Clear	100P25SP	3	60
250		1.15	G-30, Clear	250G/SP	3	24
400		1.75	G-30, Clear	400G/SP	3	24
1000		\$5.00	G-40, Clear	1M/G40SP4 1/4	4 1/4	12
1000		5.00	G-40, Clear	1M/G40SP5 1/4	5 1/4	12

G-E Mazda Drying Lamps

105-120 Volts



PS-30 R-40 G-40 G-40

Speeds up drying and surface heating processes, by radiation. Used in drying photographic prints, industrial and automotive finishes, food products, localized heating, surface moisture, motor and transformer windings, blueprints and photostats, textiles, tobacco, pottery, etc.

Medium Screw Base

Ideal for average installation of tunnel or gang set-up methods. Designed for use in practically any commercial drying reflector. Has PS-30 bulb; 250 watts.

Packed 60 in a standard package.
Each \$.85

Medium Bipost Base

For use where higher heat densities are required or space is limited. Has G-40 bulb; 500 or 1000 watts. Lamps are interchangeable, having the same mechanical dimensions. Packed 12 in a standard package.

500 Watts each \$6.00
1000 Watts each 7.75

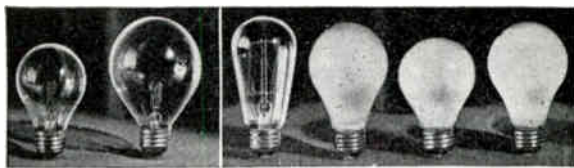
Reflector Type—Medium Screw Base

This reflector drying lamp fits into many specialty jobs not otherwise readily equipped. Has R-40 bulb; 250 watts. Packed 12 in a standard package.

Each \$1.75

G-E Mazda Street Railway Service Lamps

Medium Screw Base
525-650 Volts



A-19 P-25 S-17 A-21 A-19 A-21

Headlighting

105, 110, 115, 120, 125 and 130 Volts

For operation in series with four lamps of corresponding wattage and voltage used elsewhere in the car.

No. of Watts	Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
36	\$.55	A-19, Clear	36A/RYPH	120
56	.80	P-25, Clear	56P25	60
94	1.00	P-25, Clear	94P25	60

Car Lighting

5-In-Series—105, 110, 115, 120, 125 and 130 Volts

Operate on the trolley voltage and are used for general illumination, destination signs.

23	\$.20	S-17, Clear	23S17	120
36	.17	A-21, Inside Frosted	36A/RYPH	120
56	.20	A-21, Inside Frosted	56A21	120
101	.40	A-23, Inside Frosted	101A23	120
201	.75	PS-30, Clear	201PS30	60
301	1.30	PS-35, Clear	301PS35	24

Cutout Lamps—30 Volts

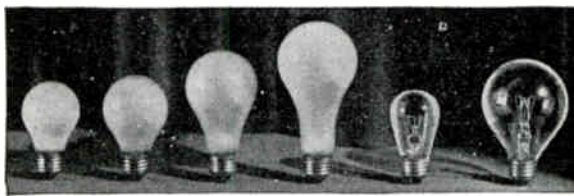
More efficient than the 5-In-Series lamps. Each lamp is equipped with an automatic short-circuiting element which cuts lamp out of circuit and prevents arcing when the lamp burns out.

†1.0	\$.30	A-19, Inside Frosted	†	120
†1.6	.35	A-21, Inside Frosted	†	120

†Amperes. †Order by specifications.

G-E Mazda Train and Locomotive Lighting Service Lamps

Medium Screw Base



A-17 A-19 A-21 A-23 S-14 P-25

Trainlighting. To insure satisfactory lamp performance voltage regulating devices should be adjusted to maintain rated lamp voltage at the socket. The 30 and 60-volt lamps recommended as being best adapted to average voltage conditions encountered in trainlighting service.

Locomotive Headlighting. When operated at the rated voltage, in suitable headlight equipment, this lamp gives satisfactory service. Bulb must be protected from water which might strike it while hot. The 250-watt lamp is designed for road locomotives; 100-watt for switching locomotives.

Locomotive Cab Lighting. Designed for all locomotive lighting except headlighting.

No. of Watts		Each	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
15		\$.20	A-17, Inside Frosted	15A	120
25		.20	A-19, Inside Frosted	25A	120
50		.20	A-21, Inside Frosted	50A21	120
100		.33	A-23, Inside Frosted	100A	120

Locomotive Headlight

32 Volts

100	\$.90	P-25, Clear	100P25	60
250	1.40	P-25, Clear	250P25	60

Locomotive Cab

34 Volts

15	\$.20	S-14, Clear	15S14	120
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G-E Mazda Traffic Signal Service Lamps

Medium Screw Base

110, 115, and 120 Volts



Has clear bulb, a short light center length, and produces enough light to make possible a signal indication of requisite brightness.

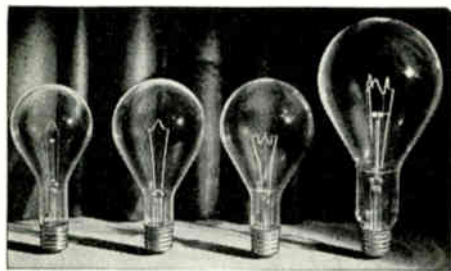
Bulb, A-21; 60 watts.

Ordering abbreviation: 60A21/TS.

Packed 120 in a standard package.

Each..... \$.25

G-E Mazda Street Series Lighting Service Lamps



PS-35 PS-40 6000 PS-40 10,000 and 15,000 Lumens PS-52

Designed to meet special requirements of street lighting service. Filaments are formed to produce a favorable light distribution. With operation at constant current, bulb blackening is compensated for by a slow increase in wattage and filament temperature.

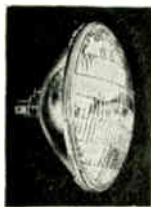
Mogul Screw Base

No. of Am-peres	Each	No. of Lumens	No. of Volts	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
6.6	\$.40	1000	9.5	PS-25, Clear	1M/66	60
6.6	.80	2500	21.6	PS-35, Clear	2500/66	24
6.6	.95	4000	31.9	PS-35, Clear	4M/66	24
6.6	1.35	6000	47.3	PS-40, Clear	6M/66	12
*15	1.05	4000	13.7	PS-35, Clear	4M/15BU	24
†15	1.05	4000	13.7	PS-35, Clear	4M/15BD	24
*20	1.45	6000	14.9	PS-40, Clear	6M/20BU	12
†20	1.45	6000	14.9	PS-40, Clear	6M/20BD	12
*20	1.85	10000	25.0	PS-40, Clear	10M/20BU	12
†20	1.85	10000	25.0	PS-40, Clear	10M/20BD	12
*20	2.55	15000	36.8	PS-40, Clear	15M/20BU	12
†20	2.55	15000	36.8	PS-40, Clear	15M/20BD	12
*20	4.80	25000	60.7	PS-52, Clear	25M/20BU	6

*For base up burning.
†For base down burning.

G-E Sealed Beam Mazda Lamps

For 1940 Cars



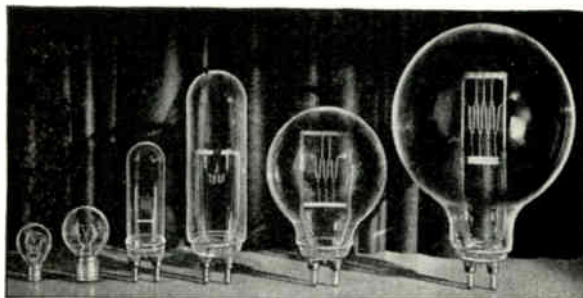
The Sealed Beam system, standard on most 1940 cars, is a two-beam system. The country beam gives a maximum of 75,000 beam candlepower; the traffic beam, maximum relief from glare.

The G-E Sealed Beam Mazda lamp fits all cars using the Sealed Beam system. Left and right lamps are interchangeable. The aiming mechanism is simple, requiring only a screwdriver. Beam pattern for all cars is identical.

Packed 8 in a standard package.

No. 4030..... each \$1.10

G-E Mazda Aviation Service Lamps



A-19 G-25 T-20 T-32 G-64 G-96

The development of Mazda lamps for aviation service has aided night mail and transport flying. Effective functioning of aviation lighting equipment requires accurate positioning. Bipost and prefocus bases provide a high degree of accuracy.

Airport code beacons take the 500-watt PS-40 bulb general service lamp fitted with mogul prefocus base, while the airway code beacons use the 200-watt PS-30 bulb general service lamp with mogul prefocus base. For airport boundary light, 6.6-ampere series lamps are widely used. The 50 and 100-watt general service lamps are employed in obstruction lights.

Aircraft Landing Lamps

Medium Prefocus Base

No. of Watts	Each	No. of Volts	Bulb	Lamp Ordering Abbrev. (Ex. Volts)	No. in Std. Pkg.
100	\$1.70	12	A-19, Clear	100A19	12
240	4.25	12	A-19, Clear	240A19	12
Mogul Prefocus Base					
420	\$5.00	12	G-25, Clear	420G25P	12
Mogul Screw Base					
420	\$5.00	12	G-25, Clear	420G25	12

Airport Floodlight Lamps

Mogul Bipost Base

Watts	Each	Volts	Bulb	Lamp Ordering Abbrev.	No. in Std. Pkg.
1500	\$15.00	32	T-24, Clear	1500T24	6
3000	22.00	32	T-32, Clear	3M/T32	4
5000	23.00	110,115,120	G-64, Clear	5M/G64	1
10000	65.00	110,115,120	G-96, Clear	10M/G96	1

Airway and Airport Beacon Lamps

Mogul Prefocus Base

Watts	Each	Volts	Bulb	Lamp Ordering Abbrev.	No. in Std. Pkg.
500	\$3.90	110,115,120	T-20, Clear	500T20P/AB	6
Mogul Bipost Base					
1000	\$6.50	110,115,120	T-20, Clear	1M/T20BP	6
1000	7.00	30	T-20, Clear	1M/T20BP	6
Mogul Screw Base					
1000	\$6.50	110,115,120	T-20, Clear	1M/T20AB	6

G-E Mazda Driving and Passing Lamps

For Pre-1940 Cars



For pre-1940 cars, benefits of Sealed Beam lighting may be obtained by installing auxiliary units equipped with G-E Mazda Driving and Passing lamps.

These lamps are similar to G-E Sealed Beam Mazda lamps except that they are smaller and the system requires lamps in pairs—one for driving and one for passing. The lamps are wired into the regular lighting system to work automatically with it. Use of Mazda Driving and Passing lamps

adds 35,000 beam candlepower to the 20,000 found on average pre-1940 cars.

Packed 8 in a standard package.

No. 4010, Driving Lamp..... each \$1.10
No. 4011, Passing Lamp..... each 1.10

Miniature Mazda Lamps

A unit package quantity consists of 10 lamps of the same MAZDA lamp number.



No. 51



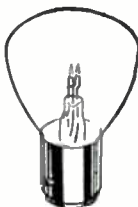
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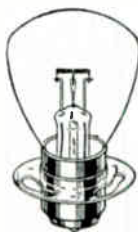
No. 63
No. 81



No. 87
No. 93



No. 1000
No. 1116



No. 2331

6-8 Volt Automobile Service

MAZDA Lamp No.	Each	Candle-power	Bulb	Base
51	\$.07	1 Nom.	G-3½	Min. Bay.
55	.07	1.5 Nom.	G-4½	Min. Bay.
63	.07	3	G-6	S.C.Bay.
64	.11	3	G-6	D.C.Bay.
81	.10	6	G-6	S.C.Bay.
87	.15	15	S-8	S.C.Bay.
1000	.19	32-32	RP-11	D.C.Bay.
1116	.19	32-21	RP-11	D.C.Bay.
1129	.17	21	S-8	S.C.Bay.
1133	.19	32	RP-11	S.C.Bay.
†1154	.25	21-3	S-8	D.C.Index
†1158	.19	21-3	S-8	D.C.Bay.
1183	.27	50	RP-11	S.C.Bay.
1188	.35	50-32	RP-11	D.C.Bay.
1321	.27	‡32	RP-11	S.C.Prefoc.
1323	.27	32	RP-11	S.C.Prefoc.
1323S	.32	32	RP-11	S.C.Prefoc.
1503	.35	50	RP-11	S.C.Prefoc.
2320	.30	32-21	RP-11	D.C.Prefoc.
*2330	.30	32-32	RP-11	D.C.Prefoc.
*2331	.30	‡32-32	RP-11	D.C.Prefoc.
*2530	.45	50-32	RP-11	D.C.Prefoc.
*2531	.45	‡50-32	RP-11	D.C.Prefoc.

12-16 Volt Automobile Service

57	\$.15	1½ Nom.	G-4½	Min. Bay.
67	.12	3	G-6	S.C.Bay.
68	.12	3	G-6	D.C.Bay.
89	.15	6	G-6	S.C.Bay.
90	.15	6	G-6	D.C.Bay.
53	.20	15	S-8	S.C.Bay.
94	.20	15	S-8	D.C.Bay.
1120	.35	21-21	RP-11	D.C.Bay.
1124	.35	32-32	RP-11	D.C.Bay.
1128	.55	50-32	RP-11	D.C.Bay.
1141	.25	21	S-8	S.C.Bay.
1142	.25	21	S-8	D.C.Bay.
1143	.30	32	RP-11	S.C.Bay.
1144	.30	32	RP-11	D.C.Bay.
1176	.40	21-6	S-8	D.C.Bay.
1195	.45	50	RP-11	S.C.Bay.
1327	.45	32	RP-11	S.C.Prefoc.
1507	.55	50	RP-11	S.C.Prefoc.
2336	.45	32-32	RP-11	D.C.Prefoc.
2536	.65	50-32	RP-11	D.C.Prefoc.

*Mazda lamps Nos. 2331 and 2531 are not interchangeable with Nos. 2330 or 2530.

†Mazda lamp No. 1154 is not interchangeable with No. 1158.

‡Bar filament.

Miniature Mazda Lamps

Unit package quantity, 10 lamps of the same Mazda lamp number.

Lamps fitted with miniature screw base unless otherwise specified.



Nos. 112,
222

For Flashlights, Handlanterns, Bicycles, Toys and Miscellaneous Service

Mazda Lamp No.	Each	Bulb	Volts	Amps.	Bead Color	†No. Cells and Size
112	\$.09	TL-3	1.1	0.22	Pink	1-AA
*123	.07	G-3½	1.2	0.30	Pink	1-C or D
136	.10	G-4½	1.3	0.60	Pink	1 No. 6
222	.09	TL-3	2.2	0.25	White	2-A or AA
223	.09	FE-3¾	2.2	0.25	White	2-A or AA
*†701	.07	FE-3¾	2.2	0.25	White	2-A or AA
233	.09	G-3½	2.3	0.27	Purple	2-C
*†710	.07	G-3½	2.3	0.27	Purple	2-C
§PR2	.13	P-3½	2.4	0.50	Blue	2-D
248	.10	G-5½	2.4	0.80	Black	2 No. 6
245	.09	G-3½	2.4	0.50	Blue	2-D
35C	.10	G-5½	2.4	0.80	Black	2 No. 6
14	.09	G-3½	2.5	0.30	Blue	2-D
*†714	.07	G-3½	2.5	0.30	Blue	2-D
§PR3	.13	P-3½	3.6	0.50	Green	3-D
365	.09	G-3½	3.6	0.50	Green	3-D
13	.09	G-3½	3.8	0.30	Green	3-D
*†713	.07	G-3½	3.8	0.30	Green	3-D
502	.10	G-4½	5.0	0.15	Blue	4-F
605	.10	G-4½	6.0	0.50	Brown	5-D
31	.10	G-4½	6.2	0.30	Brown	5-D

Nos. 233,
13, 14

No. 248

Nos. 502,
31

Radio Panel and Miscellaneous Service

50	\$.10	G-3½	6-8	1 Cp.	.....
40	.09	T-3¼	6-8	0.15	.....
41	.09	T-3¼	2.5	0.50	.....
‡44	.09	T-3¼	6-8	0.25	.....
46	.09	T-3¼	6-8	0.25	.....
‡47	.09	T-3¼	6-8	0.15	.....

*No voltage rating appears on these lamps. They are identified by bead color.

†Lamps are not focal gaged. Packed 50 lamps of a type to a platform which constitutes the minimum quantity which will be shipped by the manufacturer.

‡The cell designations given and following sizes are those standardized by the Bureau of Standards. The dimensions do not include the cell wrapper:

Designation	Cell	AA	A	C	D	F	No. 6
Diameter	..... in.	½	5/8	15/16	1¾	1¾	2½
Height	..... in.	1⅞	1⅞	1⅞	2¼	3⅞	6

§Miniature flange base.

‡Fitted with miniature bayonet base.

McGill Crescent Coloring Fluid and Frosting

Used extensively during holiday seasons to color and frost lamps, by dipping, for temporary outdoor coloring schemes; not weatherproof. Recommended for lamps up to 60 watts.

Apply all tints and shades to lighted lamps; apply frosted white to unlighted lamps—then light and let dry.

Available in amber, red, blue, pink, ruby, green, canary, violet, purple and frosted white. When ordering, specify color.

Dipping cup is included.

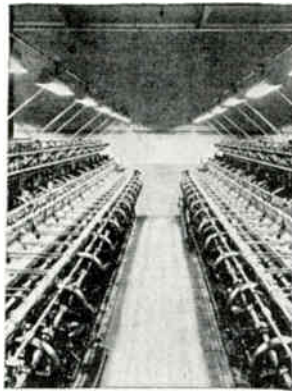


No.	Each	Size	Weight Pounds
2762	\$14.00	Gallon	22
2763	7.50	Half Gallon	18
2764	4.00	Quart	5
2765	2.00	Pint	3
2766	1.00	Half Pint	2

G-E Mazda F Fluorescent Lamps



Stores



Factories

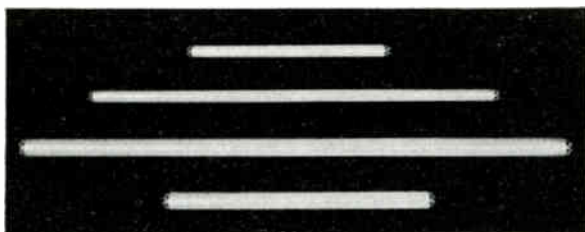
For lighting stores, factories, offices, homes, showcases, vending machines, etc.

The size and shape of fluorescent lamps allow freedom of application for creative design in lighting. Has less than 50 per cent of the radiant heat of filament lamps. No concentration of heat in one spot. Unique application possibilities, exposed or concealed, singly or combined, one color or several colors.

The low surface brightness of the 1½-inch lamp permits its use for many direct lighting applications. The small diameter of the 1-inch lamp makes it an effective tool for special attraction lighting. The 2½-inch lamp has slightly greater surface brightness than the 1½-inch lamp.

Furnished in seven colors. Daylight color is effective in many color-matching and inspection operations. White is nearly the color of regular incandescent lamps. Other colors have a glowing quality obtainable only by fluorescence.

G-E Mazda F Daylight and White Fluorescent Lamps
Medium Bipin Base



For use only with specially designed auxiliary equipment to produce proper electrical values. Assures maximum use from the wiring system. Burns in any position.

Rated average life, 2500 hrs. (except 100-watt, 2000 hrs).

Packed 24 in a standard package (except 100-watt, which is 12).

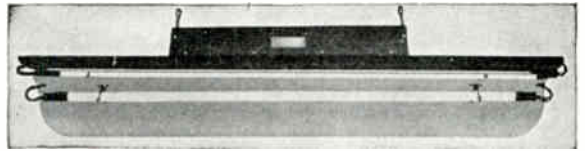
Approx. No. of Watts Each	BULB		LAMP ORDERING ABBREV.	†APPROX. LUMENS	LUMENS PER WATT					
	No.	Lgth. In.			3500° White	Day-light	3500° White	Day-light	3500° White	
*15	\$.95	T-8	18 F15T8/D	F15T8/W	495	585	33	39	28	33
*20	1.25	T-12	24 F20T12/D	F20T12/W	760	900	38	45	32	38
*30	1.25	T-8	36 F30T8/D	F30T8/W	1250	1450	41	48	35	41
40	1.90	T-12	48 F40T12/D	F40T12/W	1800	2100	45	53	38	45
100	3.75	T-17	.....	F100T17/W	.....	4400	.....	44	.....	.....

*Available in blue (B), green (G), or pink (PK) at 10 cents additional charge; in gold (GO) or red (R) at 20 cents additional charge. When ordering these colors, substitute proper symbol in abbreviation in place of D or W, thus: F15T8/PK.

†Approximate lumens and lumens per watt when measured at 80°F. ambient and under specified test conditions. Initial values apply after 100 hours of operation.

G-E RF Fluorescent Luminaires

Cooper Hewitt



No. CH-200

High Light Output. The G-E 85-watt RF (Fluorescent) lamp and single tube reflector have a light output of over 3200 lumens. For industrial lighting, this lamp may be used to obtain the higher levels of illumination desirable for increased production and better employee welfare.

The G-E RF (Fluorescent) lamps and the two-tube reflector have an initial output of approximately 6500 lumens. The Cooper Hewitt Fluorescent luminaire has an efficiency of more than 80 per cent in the lower hemisphere.

Low Installation Cost. Installation costs for the Cooper Hewitt Fluorescent luminaire will be low as existing wiring will frequently prove adequate. The nearly normal starting current allows full use of branch circuit wiring and fuses. The complete luminaire is assembled readily. Suspension is easily and substantially fixed with the two-point hangers supplied as part of the luminaire. Taps for various voltage conditions permit operation of the lamp at prevailing supply line voltages.

No Dark Shadows. Diffused light from a relatively large-area low-brightness source minimizes shadows. Glare is also minimized. Operators do not have to fight against sharp reflections from bright metal parts.

Dust-Tight Auxiliary. The electrical equipment is contained in a dust-tight compartment. This, together with low operating temperatures, makes the luminaire admirably suited to normally dusty and lint-laden atmosphere.

Available in Two Industrial Colors. These two colors, blue-white and industrial-white, are interchangeable in the luminaires permitting a choice of either color. The blue-white lamp has a complete spectrum output which emphasizes the cooler blue end while still providing enough red and green to render colors sufficiently pronounced for most industrial purposes. The industrial-white lamp also has a complete spectrum and will give somewhat warmer lighting for manufacturing areas with a more natural appearance of materials. Psychologically cool due to their distinctive colors, light from the RF (Fluorescent) lamps is also physically cool due to their high lumen output for current consumed.

Full-Wave Rectified Lamp Circuit. Because of the Cooper Hewitt full-wave rectifier-type circuit, operating from an alternating current supply, the RF (Fluorescent) lamp furnishes a virtually steady source of light. This type of circuit, with the use of a G-E Pyranol condenser, improves the power factor to 83 per cent. Higher power factor can be obtained if external changes are in the circuit.

Specifications. White porcelain enamel reflector surface. Reflector cut-off (from vertical) 70°. Clearance required, 12 inches below ceiling.

Supply line voltage, 105-125, 208-250; 60 cycles only. Fifty cycle equipment available on special order.

No.	CH-100	CH-200
Catalog No. 105-115 Volts.....	WF-1A14	WF-1A15
115-125 Volts.....	WF-1A14B	WF-1A15B
208-230 Volts.....	WF-1B14	WF-1B15
230-250 Volts.....	WF-1B14B	WF-1B15B
Without Lamps..... each	\$18.00	34.50
Dimensions..... inches	64x11	63½x15½
No. of 85-Watt RF Lamps Required.....	1	2
Total Average Watts.....	100	200

***85-Watt RF Fluorescent Lamps**

Tube Only, Blue-White..... each	\$6.50
Average Lamp Watts.....	85
Approximate Initial Lumens.....	4200
Rated Average Laboratory Life..... hours	3000
Max. Overall Length (without Prongs)..... inches	57½
Approx. Length of Light Source..... inches	52
Approx. Diameter of Light Source..... inches	1¼
*Same for industrial-white lamp. Applicable on large Mazda lamp contracts.	

Jefferson Fluorescent Lamp Control Equipment



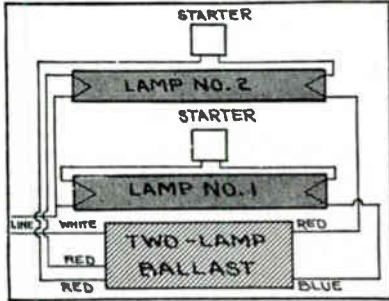
Nos. 234-721 to 781 Inclusive
Two-Lamp Ballasts



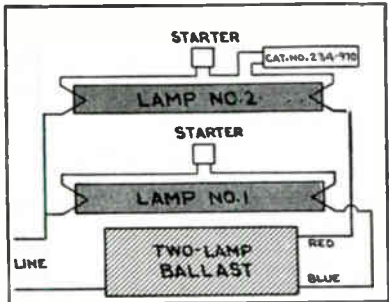
Nos. 234-501 and 511
Ballasts



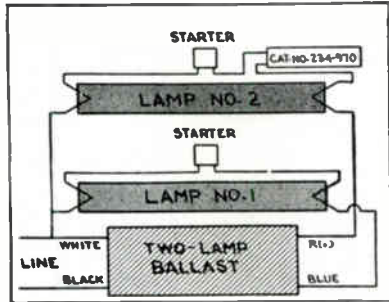
Nos. 234-521 to 581 Inclusive
Ballasts



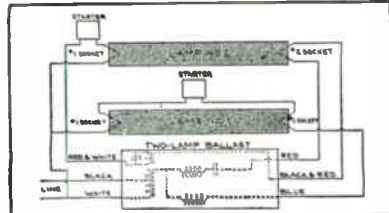
Two-Lamp Ballast 15 and 20 Watts
110-125 Volts



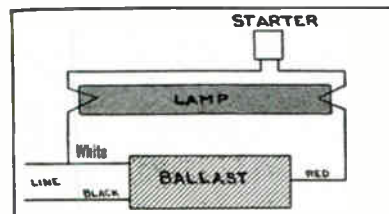
Two-Lamp Ballast 30 and 40 Watts
110-125 Volts



Two-Lamp Ballast 30 and 40 Watts
199-216 and 220-250 Volts



Two-Lamp Ballast with Built-In Starting
Compensator 30 and 40 Watts, 110-125 Volts
Nos. 234-241 and 281



Single-Lamp Ballast 30 and 40 Watts
110-125 Volts

High Power-Factor Two-Lamp Ballasts—60 Cycles

No.	Each	For Lamp Watts	Circuit Voltage	SIZE OVERALL, INCHES Height Width Length	Approx. Watts Loss	Approx. Power-Factor	Wt. Lb.
234-701	\$3.75	2-15	110-125	1 1/16 1 1/16 14 1/2	8-9	95-100	3 1/2
234-711	3.75	2-20	110-125	1 1/16 1 1/16 14 1/2	10.0	95-100	3 1/2
234-721	4.40	2-30	199-216	2 3/8 3 3/16 9 1/16	12.0	95-100	7
234-731	4.40	2-30	220-250	2 3/8 3 3/16 9 1/16	12.5	95-100	7
234-741	4.40	2-30	110-125	2 3/8 3 3/16 9 1/16	14.5	95-100	7
234-761	4.75	2-40	199-216	2 3/8 3 3/16 9 1/16	13.5	95-100	7
234-771	4.75	2-40	220-250	2 3/8 3 3/16 9 1/16	14.5	95-100	7
234-781	4.75	2-40	110-125	2 3/8 3 3/16 9 1/16	17.5	95-100	7

Starting Compensators

234-970	\$.80			1 1/16 1 1/16 4 1/4			3/4
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For use with two-lamp 30 and 40-watt ballasts.

High Power-Factor Two-Lamp Ballasts—60 Cycles

Narrow Type with Built-In Starting Compensator

234-221	\$7.75	2-30	199-216	1 1/16 1 1/16 21	10.0	95-100	6
234-231	7.75	2-30	220-250	1 1/16 1 1/16 21	10.0	95-100	6
234-241	7.75	2-30	110-125	1 1/16 1 1/16 27	25.0	95-100	7
234-261	7.75	2-40	199-216	1 1/16 1 1/16 21	12.0	95-100	6
234-271	7.75	2-40	220-250	1 1/16 1 1/16 21	12.0	95-100	6
234-281	7.75	2-40	110-125	1 1/16 1 1/16 27	28.0	95-100	7

Single-Lamp Ballasts—60 Cycles

No.	Each	For Lamp Watts	Circuit Voltage	SIZE OVERALL, INCHES Height Width Length	Approx. Watts Loss	Approx. Power-Factor	Wt. Lb.
234-501	\$.65	15	110-125	1 1/16 1 1/16 4 1/4	3.5-4.5	55	3/4
234-511	.65	20	110-125	1 1/16 1 1/16 4 1/4	4.5	65	3/4
234-521	1.25	30	199-216	1 1/16 1 1/16 8	6.25	55	2 1/4
234-531	1.25	30	220-250	1 1/16 1 1/16 8	6.75	50	2 1/4
234-541	2.25	30	110-125	1 1/16 1 1/16 10 1/2	7.0	60	2 1/4
234-561	1.50	40	199-216	1 1/16 1 1/16 8	9.0	60	2 1/4
234-571	1.50	40	220-250	1 1/16 1 1/16 8	10.0	55	2 1/4
234-581	2.50	40	110-125	1 1/16 1 1/16 10 1/2	8.75	65	2 1/4

High Power-Factor Single-Lamp Ballasts—60 Cycles

234-601	\$2.75	15	110-125	1 1/16 1 1/16 9	3.5-4.5	90-100	1 1/2
234-611	2.75	20	110-125	1 1/16 1 1/16 9	4.5	90-100	1 1/2
234-621	3.25	30	199-216	1 1/16 1 1/16 10 1/16	6.25	90-100	2 1/2
234-631	3.25	30	220-250	1 1/16 1 1/16 10 1/16	6.75	90-100	2 1/2
234-641	4.25	30	110-125	1 1/16 1 1/16 14 1/2	7.0	90-100	3 1/2
234-661	3.50	40	199-216	1 1/16 1 1/16 10 1/16	9.0	90-100	2 1/2
234-671	3.50	40	220-250	1 1/16 1 1/16 10 1/16	10.0	90-100	2 1/2
234-681	4.50	40	110-125	1 1/16 1 1/16 15 1/2	8.75	90-100	3 1/2

Capacitors for Improving Power-Factor



No. 234-999



Nos. 234-997 and 998

No.	Each	Type	Capacity Mfd.	Volts	Cross-Section Inches	Length Overall Inches
234-999	\$1.35	A	4.75	118-236	1 1/4 x 2 1/4	5 1/2
234-996	1.45	B	6.5	118	1 1/4 x 2 1/4	5 1/2
234-995	2.30	C	11.0	118	1 1/4 x 2 1/4	6 13/16
234-997	3.35	D	17.5	118-236	1 1/4 x 2 1/4	14 11/16
234-998	3.85	E	28.0	118	1 1/4 x 2 1/4	14 11/16

Capacitors Which Will Correct the Indicated Number of Lamps to 90 Per Cent Power-Factor or Better

Letters indicate the type capacitor to be used. Two letters mean two capacitors connected in parallel.

LAMP	No.	Watts	Volts	NUMBER OF LAMPS									
				BALLASTS WITH SEPARATE STARTERS					THERMAL TYPE AUXILIARIES				
T-8	15	118		1	2	3	4	5	1	2	3	4	5
T-12	20	118		A	BB	D	CC		B	BB	D	E	DD
T-8	30	118		A	D	CC	E		A	C	BB	D	CC
T-12	40	118		C	E	DD	DD		C	D	CC	E	DD
T-8	30	208		C	E	DD	DE		C	D	E	DD	CE
T-12	40	236		A	AA	D	D		A	AA	*AA	D	D

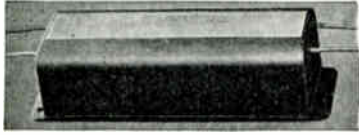
*AAA for three 30-watt lamps with thermal auxiliaries on 236 volts.

G-E Ballasts for Fluorescent Mazda Lamps

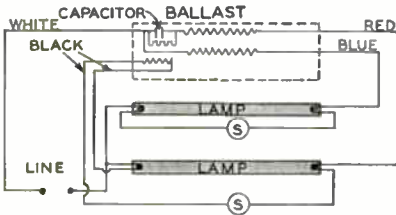
For Use Where Starters Are Installed Separately

Approved by the Underwriters' Laboratories

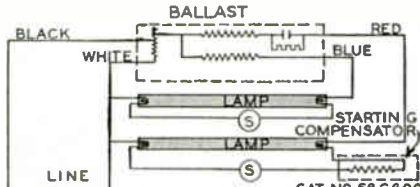
High Power-Factor Tulamp Types—60 Cycles



Autotransformer Unit for 36 and 48-Inch Lamps



TULAMP BALLAST 15 & 20 WATTS, 110-125 VOLTS INCLUDING INTEGRAL STARTING COMPENSATOR



TULAMP BALLAST—30 & 40 WATTS 110-125, 199-216 & 220-250 VOLTS SHOWING SEPARATE STARTING COMPENSATOR



No. 58G600 Starting Compensators

Required with each 30 and 40-watt Tulamp ballast.

Size, 1 1/2 x 1 3/4 x 1 1/4 inches. Weight, 3/4 pounds.

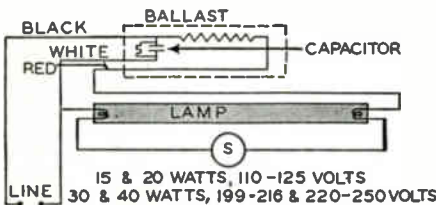
58G600.....each \$.80

No.	Each	For Lamp Watts	Circuit Voltage	SIZE OVERALL, INCHES	Approx. Watts Loss	Approx. Power-Factor	Wt. Lb.		
				Height	Width	Length			
58G678	\$3.75	2-15	110-125	1 7/32	2 1/4	14 1/4	9	95-100	3 3/8
58G679	3.75	2-20	110-125	1 7/32	2 1/4	14 1/4	9	95-100	3 3/8
58G680	4.40	2-30	110-125	2 3/8	3 1/8	9 1/2	14 1/2	95-100	7
58G681	4.40	2-30	199-216	2 3/8	3 1/8	9 1/2	12	95-100	6 3/4
58G682	4.40	2-30	220-250	2 3/8	3 1/8	9 1/2	12 1/2	95-100	6 3/4
58G683	4.75	2-40	110-125	2 3/8	3 1/8	9 1/2	17 1/2	95-100	7
58G684	4.75	2-40	199-216	2 3/8	3 1/8	9 1/2	13 1/2	95-100	6 3/4
58G685	4.75	2-40	220-250	2 3/8	3 1/8	9 1/2	14 1/2	95-100	6 3/4

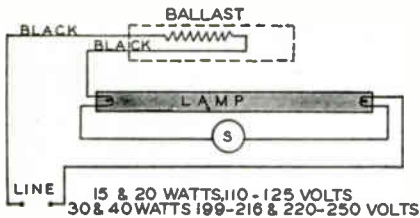
High Power-Factor Single-Lamp Type—60 Cycles

No.	Each	For Lamp Watts	Circuit Voltage	SIZE OVERALL, INCHES	Approx. Watts Loss	Approx. Power-Factor	Wt. Lb.		
				Height	Width	Length			
58G640	\$2.75	15	110-125	1 7/32	2 1/4	8 3/4	4 1/2	90	1 1/2
58G641	2.75	20	110-125	1 7/32	2 1/4	8 3/4	4 1/2	90	1 1/2
58G642	3.25	30	220-250	1 7/32	2 1/4	10 5/8	9	90	2 1/2
58G643	3.25	30	199-216	1 7/32	2 1/4	10 5/8	9	90	2 1/2
*58G644	4.25	30	110-125	1 7/32	2 1/4	14 1/4	10	90	3 1/2
58G645	3.50	40	220-250	1 7/32	2 1/4	10 5/8	13	90	2 1/2
58G646	3.50	40	199-216	1 7/32	2 1/4	10 5/8	12	90	2 1/2
*58G647	4.50	40	110-125	1 7/32	2 1/4	14 1/4	13	90	3 1/2

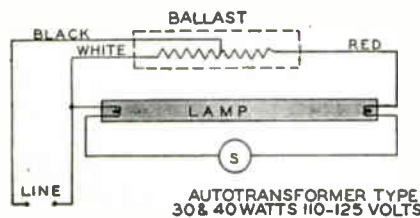
*Ballast is high-reactance autotransformer type.



15 & 20 WATTS, 110-125 VOLTS 30 & 40 WATTS, 199-216 & 220-250 VOLTS



15 & 20 WATTS, 110-125 VOLTS 30 & 40 WATTS 199-216 & 220-250 VOLTS



AUTOTRANSFORMER TYPE 30 & 40 WATTS 110-125 VOLTS

Single-Lamp Type—60 Cycles

The 15 and 20-watt, 110-125-volt, 60-cycle; the 30 and 40-watt, 220-250-volt, 60-cycle; and 199-216-volt, 60-cycle single-lamp ballasts consist of simple series reactors compounded into drawn steel cases. The rounded ends and top and shorter overall length permit mounting in a smaller space. The 30 and 40-watt, 110-125-volt, 60-cycle single-lamp ballasts are high reactance autotransformers contained in oval steel cases.

See FL capacitors recommended for correcting power-factor.

No.	Each	For Lamp Watts	Circuit Voltage	SIZE OVERALL, INCHES	Approx. Watts Loss	Approx. Power-Factor	Wt. Lb.		
				Height	Width	Length			
58G670	\$.65	15	110-125	1 7/32	1 3/4	4 1/4	4 1/2	55	3/4
58G671	.65	20	110-125	1 7/32	1 3/4	4 1/4	4 1/2	55	3/4
58G672	1.25	30	220-250	1 7/32	1 3/4	6 1/2	9	60	1 1/2
58G673	1.25	30	199-216	1 7/32	1 3/4	6 1/2	9	60	1 1/2
58G674	2.25	30	110-125	1 7/32	2 1/4	8 3/4	10	55	2 1/4
58G675	1.50	40	220-250	1 7/32	1 3/4	6 1/2	13	60	1 1/2
58G676	1.50	40	199-216	1 7/32	1 3/4	6 1/2	12	60	1 1/2
58G677	2.50	40	110-125	1 7/32	2 1/4	8 3/4	13	60	2 1/4

Wakefield Fluorescent Domino Unit Lighting Fixtures

110 Volts, 60 Cycles, A.C.



Nos. D236 and D436

Nos. D218 and D418

This unit provides both useful and decorative lighting and is a complete fixture applicable to wall or ceiling surfaces. Combines the advantages and appearance of a planned, custom-built lighting unit designed to conform with a particular architectural treatment.

Can be used singly or inter-connected in rows, combining decoration with illumination. By varying the number of units used and the wattage of the lamps, any desired degree of illumination can be obtained.

This semi-cylinder of flashed opal glass is set off by end caps finished in polished chromium and illuminated by a louver effect.

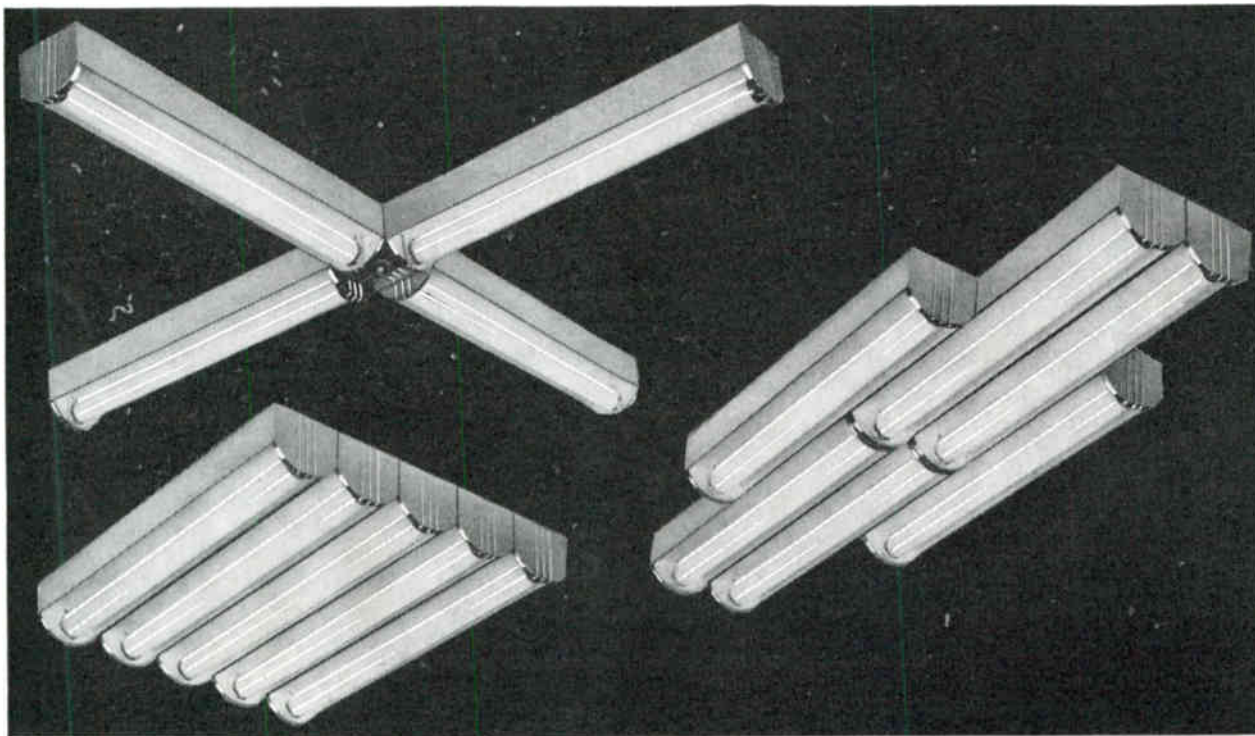
Accommodates either 15 or 30-watt fluorescent lamps. Either 2 or 4-lamp sizes in both wattages are available. Lamps are mounted on a curved reflector, behind which is located the necessary auxiliary equipment. High power-factor ballasts as well as separate starter switches are used.

Width, 10 inches.

Package quantity, 1.

No.	D-218	D-418	D-236	D-436
Each	\$36.00	54.00	54.00	72.00
No. of Lamps and Wattage	2-15	4-15	2-30	4-30
Length	20	20	38	38
Weight	30	40	50	60

Wakefield Fluorescent Lumilier Channel Unit Lighting Fixtures



Where luminous patterns with fluorescent lamps are desired, a few of the variety of patterns are suggested above. The units shown will provide suggestions to the lighting engineer, who can readily produce any level of illumination by combining units into utilitarian and decorative patterns.

By applying directly to the ceiling, any conceivable pattern can be worked out, using standard units complete with connectors.

The above patterns were made from standard No. 1124 fluorescent units and are designed to show only some of the many possibilities which are available. Each unit has, self-enclosed, the necessary parts to complete such patterns.

The Cross, illustrated above, is made up of four No. 1124 units using the standard 90° connector (No. 1090). The Bank, also shown above, makes use of five standard No. 1124 units. Width, 4¼ inches.

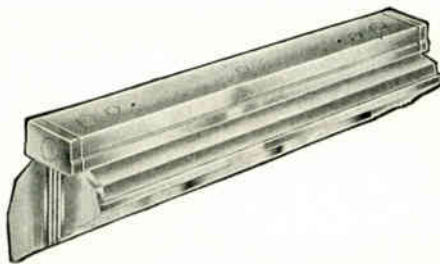
Package quantity, 4.

NOTE.—Prices shown are for Lumilier Channels only, less starters and ballasts.

No.	1118	1124	1136	1148	1090
Each	\$5.65	6.10	7.25	9.60	3.15
Length	18	24	36	48	4¼
Height	3¾	3¾	3¾	3¾	2½
Weight	24	28	34	40	7

Day-Brite 1-Light Wired Units

For 18, 24, 36, and 48-Inch Fluorescent Lamps



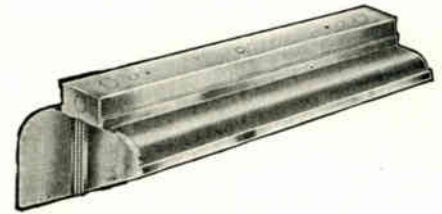
Asymmetric Type—Series 8950 and 8960



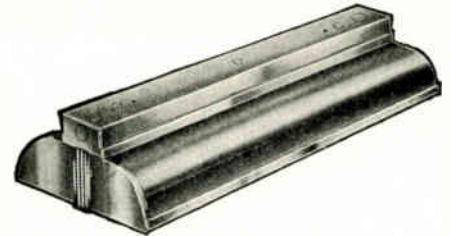
Symmetric Type—Series 8955 and 8965

Day-Brite 2-Light Wired Units

For 18, 24, 36, and 48-Inch Fluorescent Lamps



Asymmetric Type—Series 4990 and 4975



Symmetric Type—Series 4995 and 4985

Complete units furnished wired with lamp starters, ballasts, sockets and three-foot wire lead. Levolver pull switch or toggle switch and cord and plug can be furnished at additional price. Units are complete with end caps, channel covers, cast ornamental end plates, and either specular Alzak or porcelain enamel reflectors as listed below. Channel, end caps, channel covers and cast ornamental end plates, baked aluminum enamel.

Standard package, 1 fixture.

Complete units furnished wired with lamp starters, Tu-lamp ballasts, starting compensators, sockets and three-foot wirelead. Levolver pull switch or toggle switch and cord and plug can be furnished at additional price. These units consist of channel, end caps, channel covers, cast ornamental end plates and either specular Alzak or porcelain enamel reflectors as listed below. Channel, end caps, channel covers and cast ornamental end plates, baked aluminum enamel.

Standard package, 1 fixture.

With Alzak (Specular) Reflectors

Asymmetric Type

No.	Low Power-Factor 55-60% Each	High Power-Factor 95-100% Each	FOR LAMPS				Length Fixture Inches	Wt. Lb.
			No.	Size In.	Watts	Volts		
8950	\$12.50	\$16.90	1	18	15	110	19 1/4	6
8951	13.70	18.10	1	24	20	110	25 1/4	7
8952A	16.80	20.80	1	36	30	220	37 1/4	10
8952B	18.80	22.80	1	36	30	110	37 1/4	11
8953A	19.80	23.80	1	48	40	220	49 1/4	12
8953B	21.80	25.80	1	48	40	110	49 1/4	13

Symmetric Type

No.	Low Power-Factor 55-60% Each	High Power-Factor 95-100% Each	FOR LAMPS				Length Fixture Inches	Wt. Lb.
			No.	Size In.	Watts	Volts		
8955	\$12.50	\$16.90	1	18	15	110	19 1/4	6
8956	13.70	18.10	1	24	20	110	25 1/4	7
8957A	16.80	20.80	1	36	30	220	37 1/4	10
8957B	18.80	22.80	1	36	30	110	37 1/4	11
8958A	19.80	23.80	1	48	40	220	49 1/4	12
8958B	21.80	25.80	1	48	40	110	49 1/4	13

With Porcelain Enamel Reflectors

Asymmetric Type

No.	Low Power-Factor 55-60% Each	High Power-Factor 95-100% Each	FOR LAMPS				Length Fixture Inches	Wt. Lb.
			No.	Size In.	Watts	Volts		
8960	\$11.70	\$16.10	1	18	15	110	19 1/4	7
8961	12.50	15.90	1	24	20	110	25 1/4	9
8962A	15.40	19.40	1	36	30	220	37 1/4	12
8962B	17.40	21.40	1	36	30	110	37 1/4	13
8963A	17.40	21.40	1	48	40	220	49 1/4	14
8963B	19.40	23.40	1	48	40	110	49 1/4	15

Symmetric Type

No.	Low Power-Factor 55-60% Each	High Power-Factor 95-100% Each	FOR LAMPS				Length Fixture Inches	Wt. Lb.
			No.	Size In.	Watts	Volts		
8965	\$11.70	\$16.10	1	18	15	110	19 1/4	7
8966	12.50	16.90	1	24	20	110	25 1/4	9
8967A	15.40	19.40	1	36	30	220	37 1/4	12
8967B	17.40	21.40	1	36	30	110	37 1/4	13
8968A	17.40	21.40	1	48	40	220	49 1/4	14
8968B	19.40	23.40	1	48	40	110	49 1/4	15

With Alzak (Specular) Reflectors

Asymmetric Type

No.	High Power-Factor 95-100% Each	FOR LAMPS				Length Fixture Inches	Wt. Lb.
		No.	Size In.	Watts	Volts		
4990	\$26.80	2	18	15	110	18 1/4	12
4991	29.10	2	24	20	110	24 1/4	13
4992A	35.30	2	36	30	220	36 1/4	18
4992B	35.30	2	36	30	110	36 1/4	18
4993A	40.10	2	48	40	220	48 1/4	22
4993B	40.10	2	48	40	110	48 1/4	22

Symmetric Type

No.	High Power-Factor 95-100% Each	FOR LAMPS				Length Fixture Inches	Wt. Lb.
		No.	Size In.	Watts	Volts		
4995	\$26.80	2	18	15	110	18 1/4	12
4996	29.10	2	24	20	110	24 1/4	13
4997A	35.30	2	36	30	220	36 1/4	18
4997B	35.30	2	36	30	110	36 1/4	18
4998A	40.10	2	48	40	220	48 1/4	22
4998B	40.10	2	48	40	110	48 1/4	22

With Porcelain Enamel Reflectors

Asymmetric Type

No.	High Power-Factor 95-100% Each	FOR LAMPS				Length Fixture Inches	Wt. Lb.
		No.	Size In.	Watts	Volts		
4975	\$25.50	2	18	15	110	18 1/4	13
4976	26.80	2	24	20	110	24 1/4	15
4977A	32.50	2	36	30	220	36 1/4	21
4977B	32.50	2	36	30	110	36 1/4	21
4978A	35.40	2	48	40	220	48 1/4	27
4978B	35.40	2	48	40	110	48 1/4	27

Symmetric Type

No.	High Power-Factor 95-100% Each	FOR LAMPS				Length Fixture Inches	Wt. Lb.
		No.	Size In.	Watts	Volts		
4985	\$25.50	2	18	15	110	18 1/4	13
4986	26.80	2	24	20	110	24 1/4	15
4987A	32.50	2	36	30	220	36 1/4	21
4987B	32.50	2	36	30	110	36 1/4	21
4988A	35.40	2	48	40	220	48 1/4	27
4988B	35.40	2	48	40	110	48 1/4	27

Day-Brite Fluorescent Light Strips, Reflectors, and Fittings

For 18, 24, 36, and 48-Inch Fluorescent Lamps
1-Lamp Light Strips



A complete strip lighting system with snap-on channel covers and reflectors for 18, 24, 36, and 48-inch fluorescent lamps. May be used to make up one-lamp fixtures or fixtures for any number of lamps required in a continuous line, with lamps end to end or spaced as desired.

Channel is designed to accommodate all ballasts and auxiliaries with the exception of the new Tulamp 30 and 40-watt type.

No. 8800X Channels for Snap-On Channel Covers



Has 1/2-inch knockout on 12-inch centers and screw holes in back.

Made of steel, galvanized finish.

Furnished in 12-foot lengths.

No. 8800X, Channel Only per foot \$.30

Lamp Lengths of Channel for Snap-On Channel Covers



Same width and depth as No. 8800X channel and will take either snap-on channel covers or blank covers. Each length has punched screw hole, 1/2-inch knockout and two 3/8-inch knockouts in back.

Made of steel, galvanized finish.

No.	8800A	8800B	8800C	8800D
Each	\$.56	.70	1.00	1.28
Length.....inches	18	24	36	48

Snap-On Channel Covers



Made long enough to come flush with the outside edges of the sockets, are punched for mounting sockets and can be used with either T-8 or T-12 lamps. Sockets and ballasts not included. Has knockout for new starter switch.

Baked aluminum enamel finish.

No.	8810A	8810B	8810C	8810D
Each	\$.56	.68	.88	1.10
Length.....inches	18	24	36	48

Fittings



No. 8801 No. 8802 No. 8803 No. 8805

No. 8801, Channel Coupling.....	each	\$.22
No. 8802, Service Box.....	each	.58
No. 8803, End Cap.....	each	.30
No. 8805, Ballast Clamp.....	each	.08

No. 8804 Blank Capping



For filling in where lamps are not desired.

Baked aluminum enamel finish.

Furnished in 18-inch lengths.

No. 8804.....each \$.36

Day-Brite Fluorescent Light Strips, Reflectors, and Fittings

For 18, 24, 36, and 48-Inch Fluorescent Lamps

Cast Ornamental End Plates



Made of aluminum.

Finished in satin aluminum.

No. 8808, Asymmetric Type.....	per pair	\$2.80
No. 8809, Symmetric Type.....	per pair	2.80

Reflectors for Fluorescent Light Strips

Asymmetric Type—Specular Alzak

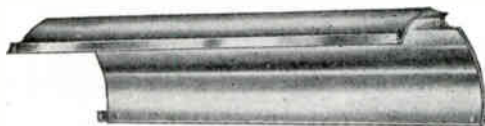


For T-8 or T-12 lamps.

Has knockout for new starter switch.

No.	8850A	8850B	8850C	8850D
Each	\$2.70	3.70	5.04	7.06
Length.....inches	18	24	36	48

Symmetric Type—Specular Alzak



For T-8 or T-12 lamps.

Has knockout for new starter switch.

No.	8855A	8855B	8855C	8855D
Each	\$2.70	3.70	5.04	7.06
Length.....inches	18	24	36	48

Asymmetric Type—Porcelain Enamel



For T-8 or T-12 lamps.

Has knockout for new starter switch.

No.	8860A	8860B	8860C	8860D
Each	\$1.90	2.36	3.36	4.38
Length.....inches	18	24	36	48

Symmetric Type—Porcelain Enamel



For T-8 or T-12 lamps.

Has knockout for new starter switch.

No.	8865A	8865B	8865C	8865D
Each	\$1.90	2.36	3.36	4.38
Length.....inches	18	24	36	48

Day-Brite Fluorescent Light Strips, Reflectors, and Fittings
For 18, 24, 36, and 48-Inch Fluorescent Lamps

Tulamp Light Strips



A complete strip lighting system with snap-on channel covers for 18, 24, 36, and 48-inch fluorescent lamps. This system affords higher intensities for coves, niches, panels, etc. Also for exposed mounting on ceiling for general illumination.

Fixtures are equipped for two lamps parallel and additional lamps may be secured for continuous installations.

Channel is designed to accommodate the new Tulamp ballasts.

No. 4800 Channels for Snap-On Channel Covers



Will accommodate new Tulamp ballasts. Has 1/2-inch knockout on 12-inch centers with screw holes in back.

Made of steel, galvanized finish.

Furnished in 12-foot lengths.

No. 4800.....per foot \$.46

Channels for Snap-On Channel Covers



Same width and depth as No. 4800 channel and will take either snap-on channel covers or blank covers.

Each length has a punched screw hole, a 1/2-inch knockout and two 3/8-inch knockouts in back.

Made of steel, galvanized finish.

No.	4800A	4800B	4800C	4800D
Each.....	\$.78	1.02	1.46	1.90
Length.....inches	18	24	36	48

Snap-On Channel Covers



Made long to come flush with the outside edges of the sockets, are punched for mounting sockets and can be used with either T-8 or T-12 lamps. Sockets and Tulamp ballasts not included. Has knockout for new starter switch.

Baked Aluminum Enamel Finish

No.	4870A	4870B	4870C	4870D
Each.....	\$1.02	1.18	1.52	1.84
Length.....inches	18	24	36	48

Porcelain Enamel Finish

No.	4860A	4860B	4860C	4860D
Each.....	\$1.58	1.90	2.78	3.70
Length.....inches	18	24	36	48

No. 4807 Blank Capping



For use with two-lamp channel covers. Can be cut for filling in on channel where lamps are not used.

Baked aluminum enamel finish.

Furnished in 18-inch lengths.

No. 4807.....each \$.70

Day-Brite Fluorescent Light Strips, Reflectors, and Fittings
For 18, 24, 36, and 48-Inch Fluorescent Lamps

Fittings



No. 4801



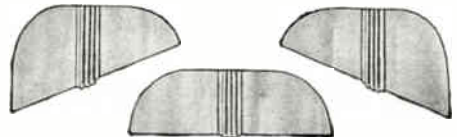
No. 4806



No. 4805

No. 4801, Channel Coupling.....	each	\$.28
No. 4806, End Plate.....	each	.22
No. 4805, Ballast Clamp.....	each	.13

Cast Ornamental End Plates



Made of aluminum.

Finished in satin aluminum.

No. 4808, Asymmetric Type.....	per pair	\$5.04
No. 4809, Symmetric Type.....	per pair	5.04

Reflectors for Fluorescent Light Strips

Specular Alzak



For T-8 or T-12 lamps.

Has knockout for new starter switch.

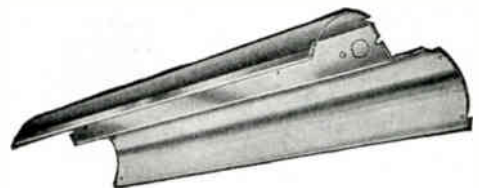
Asymmetric Type

No.	Each	Length Inches
4890A	\$4.70	18
4890B	6.72	24
4890C	8.96	36
4890D	12.32	48

Symmetric Type

No.	Each	Length Inches
4895A	\$4.70	18
4895B	6.72	24
4895C	8.96	36
4895D	12.32	48

Porcelain Enamel



For T-8 or T-12 lamps.

Has knockout for new starter switch.

Asymmetric Type

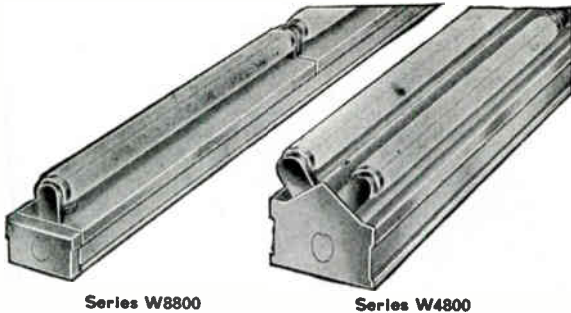
No.	Each	Length Inches
4875A	\$2.92	18
4875B	3.70	24
4875C	5.38	36
4875D	6.72	48

Symmetric Type

No.	Each	Length Inches
4885A	\$2.92	18
4885B	3.70	24
4885C	5.38	36
4885D	6.72	48

Day-Brite Wired Light Strips

For 18, 24, 36, and 48-Inch Fluorescent Lamps



Complete wired light strip for one and two rows of lamps including channel, channel covers, ballast C lamps, ballasts, sockets, lamp starters, service box, or end cap and coupling if installation is over twelve feet long.

Asymmetric and symmetric type reflectors in specular Alzak can be supplied if required.

1-Light

Baked Aluminum Enamel Channel Covers

No.	FOR LAMPS			Basic Length		Each Additional Lamp Length	
	No.	Watts	Volts	Length Inches	Each	Length Inches	Each
W8810A	1	15	110	19 1/4	\$7.80	18	\$7.50
W8810B	1	20	110	25 1/4	8.10	24	7.80
W8810CA	1	30	220	37 1/4	10.10	36	9.80
W8810CB	1	30	110	37 1/4	12.10	36	11.80
W8810DA	1	40	220	49 1/4	11.30	48	11.00
W8810DB	1	40	110	49 1/4	13.30	48	13.00

Porcelain Enamel Channel Covers

W8820A	1	15	110	19 1/4	\$8.08	18	\$7.78
W8820B	1	20	110	25 1/4	8.48	24	8.18
W8820CA	1	30	220	37 1/4	10.74	36	10.44
W8820CB	1	30	110	37 1/4	12.74	36	12.44
W8820DA	1	40	220	49 1/4	12.14	48	11.84
W8820DB	1	40	110	49 1/4	14.14	48	13.84

2-Light

Baked Aluminum Enamel Channel Covers

No.	FOR LAMPS			Basic Length		Each Additional Lamp Length	
	No.	Watts	Volts	Length Inches	Each	Length Inches	Each
						18	\$18.50
						24	19.10
W4870CA	2	30	220	36 1/4	\$23.80	36	23.50
W4870CB	2	30	110	36 1/4	23.80	36	23.50
W4870DA	2	40	220	48 1/4	25.50	48	25.20
W4870DB	2	40	110	48 1/4	25.50	48	25.20

Porcelain Enamel Channel Covers

						18	\$19.00
						24	19.76
W4860CA	2	30	220	36 1/4	\$24.90	36	24.62
W4860CB	2	30	110	36 1/4	24.90	36	24.62
W4860DA	2	40	220	48 1/4	27.16	48	26.86
W4860DB	2	40	110	48 1/4	27.16	48	26.86

Day-Brite Decorative Surface Fixtures

Fixtures are finished in polished chromium and are fastened to ceiling or wall through mounting holes in back plate. Furnished wired, including ballasts and lamp starters.

1-Lamp—Width, 4 1/2 Inches

No.	Low Power-Factor 55-60% Each	High Power-Factor 95-100% Each	FOR LAMPS			Lgth. In.
			Size In.	Watts	Volts	
2118	\$15.24	\$20.16	18	15	110	20
2124	16.02	20.94	24	20	110	26
2136A	19.60	24.08	36	30	220	38
2136B	21.84	26.32	36	30	110	38
2148A	22.52	27.00	48	40	220	50
2148B	24.76	29.24	48	40	110	50

2-Lamp—Width, 7 Inches

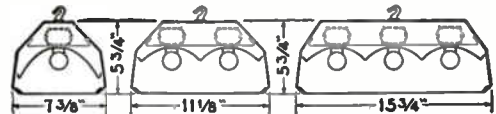
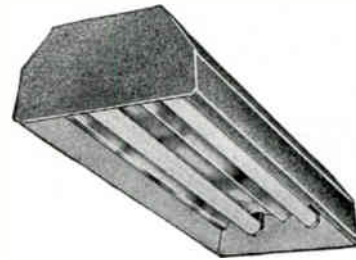
2218	\$21.60	\$25.50	18	15	110	20
2224	22.70	26.60	24	20	110	26
2236A	27.80	33.70	36	30	220	38
2236B	31.80	33.70	36	30	110	38
2248A	32.00	36.80	48	40	220	50
2248B	36.00	36.80	48	40	110	50

3-Lamp—Width, 9 1/2 Inches

2318	\$30.00	\$38.30	18	15	110	20
2324	31.30	39.60	24	20	110	26
2336A	44.40	48.40	36	30	220	38
2336B	46.40	50.40	36	30	110	38
2348A	49.00	53.00	48	40	220	50
2348B	51.00	55.00	48	40	110	50

For toggle switch, add \$1.60 to above prices.

Day-Brite Inspection Fixtures



Especially suited where color matching or daylight quality lighting is required.

Body made of steel, finished in machinery gray baked wrinkle enamel, reflecting surface specular Alzak. Has loop at each end for suspension.

Furnished complete with ballasts, toggle switch, cord and plug. Lamps are not included.

1-Lamp

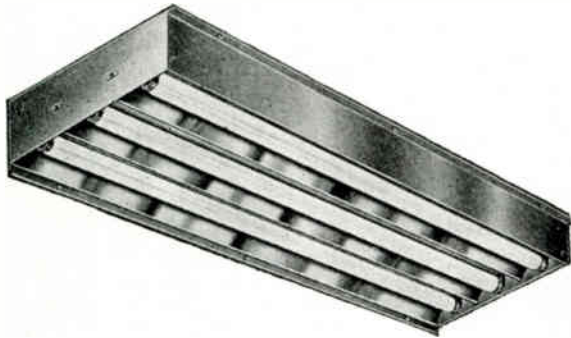
No.	Low Power-Factor 55-60% Each	High Power-Factor 95-100% Each	FOR LAMPS				Lgth. In.
			Size In.	Watts	Volts	Length In.	
1645	\$15.20	\$19.60	1	18	15	110	18 1/4
1646	17.00	21.40	1	24	20	110	24 1/4
1647A	20.50	24.50	1	36	30	220	36 1/4
1647B	22.50	26.50	1	36	30	110	36 1/4
1648A	24.00	28.00	1	48	40	220	48 1/4
1648B	26.00	30.00	1	48	40	110	48 1/4

2-Lamp

No.	High Power-Factor 95-100% Each	FOR LAMPS				Length Inches
		No.	Size In.	Watts	Volts	
1655	\$23.00	2	18	15	110	18 1/4
1656	25.00	2	24	20	110	24 1/4
1657A	36.50	2	36	30	220	36 1/4
1657B	36.50	2	36	30	110	36 1/4
1658A	42.00	2	48	40	220	48 1/4
1658B	42.00	2	48	40	110	48 1/4

Day-Brite Show Window Reflectors

For 18, 24, 36, and 48-Inch Fluorescent Lamps



This fixture is designed for lighting all types of show windows, and is available for two, three, and four lamps.

Fixture with symmetric reflector is designed for shallow and high windows.

Fixture with asymmetric reflector is designed for medium and deep windows.

Made in unit lengths and can be butted and bolted together to make a continuous fixture to fill out window length.

Reflecting surface is specular Alzak.

Fixture dimensions are as follows: 2-light, 6x14 inches; 3-light, 6x20 inches; and 4-light, 6½x26 inches.

Fixture is complete with sockets, ballasts, lamp starters and wire lead. Completely wired, ready to install.

Knockouts for electrical connections are located in top, ends and back.

Body is made of steel; standard finish is aluminum lacquer.

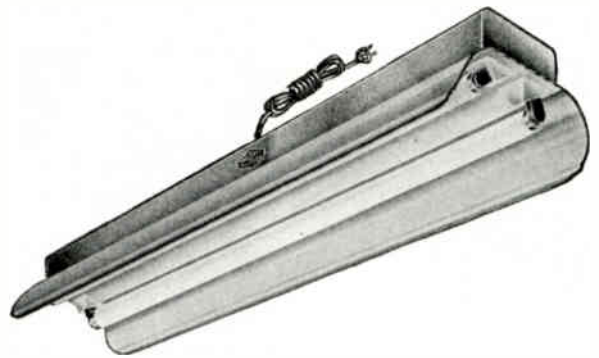
Standard package, 1.

REFLECTOR No.		Low Power-Factor 55-60% Each	High Power-Factor 95-100% Each	FOR LAMPS				Lgth. In.
Asym-metric	Sym-metric			No.	Size In.	Watts	Volts	
7218	9218	\$24.30	\$28.20	2	18	15	110	18¾
7224	9224	27.00	30.90	2	24	20	110	24¼
7236A	9236A	.....	38.60	2	36	30	220	36¼
7236B	9236B	.....	38.60	2	36	30	110	36¼
7248A	9248A	.....	45.20	2	48	40	220	48¼
7248B	9248B	.....	45.20	2	48	40	110	48¼
7318	9318	35.30	43.60	3	18	15	110	18¾
7324	9324	39.30	47.60	3	24	20	110	24¼
7336A	9336A	*54.00	58.00	3	36	30	220	36¼
7336B	9336B	*56.00	60.00	3	36	30	110	36¼
7348A	9348A	*64.30	68.30	3	48	40	220	48¼
7348B	9348B	*66.30	70.30	3	48	40	110	48¼
7418	9418	47.30	55.10	4	18	15	110	18¾
7424	9424	53.20	61.00	4	24	20	110	24¼
7436A	9436A	.....	75.60	4	36	30	220	36¼
7436B	9436B	.....	75.60	4	36	30	110	36¼
7448A	9448A	.....	88.80	4	48	40	220	48¼
7448B	9448B	.....	88.80	4	48	40	110	48¼

*Power-factor, 85 per cent.

Day-Brite Two-Forty Fixtures

For Two 48-Inch 40-Watt Fluorescent Lamps



A one-piece lighting fixture.

Reflecting surface is porcelain enamel having a reflection factor of from 78 to 82 per cent. Outside of reflector is light gray porcelain enamel. Hood of fixture is finished in light gray baked wrinkle enamel, and is hinged so that it can be swung open for easy accessibility for servicing or for making wire connections. This fixture is arranged for either chain or pipe suspension.

Completely wired with sockets, lamp starters, starting compensator, 6-foot heavy duty 3-wire rubber covered cord, plug and high power-factor Tulamp ballast. Lamps are not included. Approximate power-factor, 95-100 per cent.

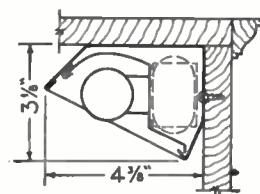
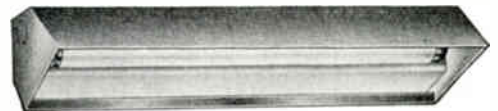
Height, 7¾ inches; width, 13½ inches; length, 52 inches. Shipping weight, 31 pounds.

FOR LAMPS		Unwired Without Cord and Plug, Otherwise Comp.		Wired Without Cord and Plug		Wired With Cord and Plug	
No.	Size In.	Watts	Volts	No.	Each	No.	Each
2	48	40	110-125	240B	\$28.00	240BW	\$29.00
2	48	40	199-216	*240C	28.00	*240CW	29.00
2	48	40	220-250	240A	28.00	240AW	29.00
						240BX	\$30.50
						*240CX	30.50
						240AX	30.50

*Available on special order only.

Day-Brite Wallcase Units

For 18, 24, 36, and 48-Inch Fluorescent Lamps



For wallcases, island display cases, etc.

Reflectors are porcelain enamel. Knockouts are ½ inch in each end for electrical connections and ¾-inch diameter knockout in reflector for switch.

Furnished, wired, with lamp starters, ballasts and 24-inch wire lead at each end included.

Outside finish, aluminum lacquer.

No.	LAMP SIZE		Length Inches	For One Lamp		Each Additional Lamp Length	
	Watts	Volts		Each	Length Inches	Each	
412	15	110	18¼	\$10.30	18	\$9.10	
413	20	110	24¼	11.20	24	9.80	
414A	30	220	36¼	14.40	36	13.00	
414B	30	110	36¼	16.40	36	15.00	
415A	40	220	48¼	16.60	48	15.10	
415B	40	110	48¼	18.60	48	17.10	
Mitters				each	\$3.30		
Toggle Switch				each	1.60		
Levolier Switch				each	2.50		

Additional fixture length for continuous installations—for blank housing between lamps without provision for lamps, add 20 cents per inch.

Curtis SkyLux Fluorescent Luminaires

Listed by Underwriters' Laboratories, Inc.

SkyLux is the answer to the many problems of general fluorescent lighting in stores and offices. It is modern in styling and efficient in light control. SkyLux Fluorescent Luminaire is available in two finishes: satin silvertone finish and satin brass and aluminum finish. In both finishes, the mouldings and lamp shields form an interesting contrast with the snow-white Fluracite reflector.

The numbers below cover assembled units unwired and less wire, control equipment, lamps and starters, but include lamp sockets and starter sockets. Units will be supplied completely wired with control equipment at extra cost if specified.

Single SkyLux



Single SkyLux Luminaires are for mounting along the right angle juncture of the wall and ceiling or horizontally on the wall.

Single SkyLux is for one 40-watt lamp per section. Basic units are complete with two end plates and are 48 $\frac{7}{8}$ inches long overall. Extension sections are for coupling to basic units to make up continuous fixtures. Each extension section used adds 48 $\frac{1}{16}$ inches to the length of the complete fixture.

Satin Silvertone Finish No. 891

Basic single SkyLux, moldings and lamp shield finished satin silvertone. End plates with decorative die castings are aluminum lacquer.

No. 891.....per basic unit \$17.05

No. 892

Extension section—moldings and lamp shield finished satin silvertone.

No. 892.....per section \$16.10

Satin Brass and Aluminum Finish No. 893

Basic single SkyLux, moldings and lamp shield finished satin brass. End plates are aluminum lacquer and decorative die casting is bronze lacquer.

No. 893.....per basic unit \$17.05

No. 894

Extension section—moldings and lamp shield finished satin brass.

No. 894.....per section \$16.10

Twin SkyLux



Twin SkyLux Luminaires are for mounting on ceiling or for suspension on hangers.

Twin SkyLux is for two 40-watt lamps per section. Basic units are complete with two end plates and are 48 $\frac{7}{8}$ inches long overall. Extension sections are for coupling to basic units to make up continuous fixtures. Each extension section used adds 48 $\frac{1}{16}$ inches to the length of the complete fixture.

Satin Silvertone Finish No. 895

Basic twin SkyLux, moldings and lamp shields finished satin silvertone. End plates with decorative die castings are aluminum lacquer.

No. 895.....per basic unit \$26.80

No. 896

Extension section—moldings and lamp shields finished satin silvertone.

No. 896.....per section \$25.35

Satin Brass and Aluminum Finish No. 897

Basic twin SkyLux, moldings and lamp shields finished satin brass. End plates are aluminum lacquer and decorative die castings are bronze lacquer.

No. 897.....per basic unit \$26.80

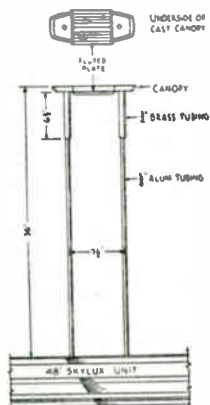
No. 898

Extension section—moldings and lamp shields finished satin brass.

No. 898.....per section \$25.35

Curtis SkyLux Accessories

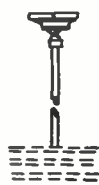
No. 623 Standard Two-Stem Hangers



This hanger is composed of two aluminum stems containing $\frac{1}{4}$ -inch iron pipe. A decorative ceiling canopy adds style to the hanger.

All one, two, and three section luminaires will require one hanger for each section. Luminaires of more than three sections must have hangers spaced never more than 6 feet apart.

Finished in aluminum and golden brass.



No. 624 Standard Single-Stem Hangers

For high narrow rooms or uneven ceilings, it is recommended that hangers be used to suspend SkyLux at a desirable height.

This hanger is composed of a steel stem with a satin silvertone finish and a canopy made of aluminum. Both blend well with the finishes of the SkyLux units.

Two single stem hangers are needed to support a 48-inch section of Nos. 895 or 897 SkyLux. One hanger is required to support each 48-inch section of SkyLux when two or more sections are joined together.

No. 12402 Louver Fins For Single or Twin SkyLux



Louver fins are used to shield the lamp from being viewed lengthwise. Unit includes louvers and bar frame with clips for attaching to lamp shield.

One unit is required per lamp.

Parts for Fluorescent CurtiStrip

Fluorescent fixtures can be made up from the parts listed below. It is desirable to do this for lengths longer than 10 feet, or if unfinished parts may be used, in installations where equipment will be concealed, and in certain industrial applications.

Standard CurtiStrip Channel



Channel and cover are made of 20-gage cold rolled steel, rust-resisting finish.
Size, 2½ inches wide and 1½ inches deep.

No.	Each	Description	Length	Std. Pkg.
1	*\$.40	Channel with Cover.....	10 Ft.	100 Ft.
1-A	*.35	Channel Only.....	10 Ft.	100 Ft.
1-B	*.10	Cover Only.....	10 Ft.	100 Ft.
591	.85	Channel Only.....	18 In.	10
593	1.00	Channel Only.....	24 In.	10
596	1.45	Channel Only.....	36 In.	10
597	1.90	Channel Only.....	48 In.	10
599	3.30	Channel Only.....	96 In.	10

*Price per foot.

Finished CurtiStrip Channel Only

Satin silvertone finish.

No.	Each	Length	Std. Pkg.	No.	Each	Length	Std. Pkg.
562	\$.95	18 In.	10	566	\$3.55	6 Ft.	5
563	1.25	2 Ft.	10	567	4.40	8 Ft.	5
564	1.70	3 Ft.	10	568	4.65	9 Ft.	5
565	2.35	4 Ft.	10	1-C	.50	10 Ft.	5



No. 16 CurtiStrip Couplings

No. 16 coupling is used to connect two pieces of CurtiStrip channel.
No. 16.....each \$.30

CurtiStrip End Caps



No. 501



No. 6



No. 31



No. 46

Both decorative end castings and plain end caps are available. The end castings, besides giving a finished appearance, provide means of support when CurtiStrip is suspended from ends of channel.

No.	Each	Description	Std. Pkg.
†501	\$.75	Decorative End Casting.....	10
†6	.20	Plain End Cap.....	10
†31	.20	Plain Bushed End Cap.....	10
†46	.25	Extended End Cap.....	10

†Satin silvertone finish.

‡Cadmium plated.

§Use No. 46 in place of No. 6 where wire connection is to be made through end of CurtiStrip.

Socket Reflector Supports



No. 181 ballast holder straps are not included.

No.	Each	Description	Std. Pkg.
782	\$.55	Plain.....	10 Sets
787	.65	Aluminum Lacquer.....	10 Sets
788	.70	Fluracite (White).....	10 Sets

Fill-in Covers

Machine-scored at 3-inch intervals.

No.	Each	Description	Length Inches	Std. Pkg.
797	\$.70	Aluminum Lacquer.....	39	20 Lengths
798	.80	Fluracite (White).....	29	20 Lengths
573	.40	Satin Silvertone.....	24	10 Lengths

Parts for Fluorescent CurtiStrip

No. 181 Ballast Holder Straps

Standard package, 20.
No. 181.....each \$.15

No. 9 Straps



For holding CurtiStrip against any flat surface. May be used with the fluorescent reflectors or complete units listed on the following pages. No. 9 strap fits between the reflector and the channel.

No. 9.....each \$.10

Reflectors



Shallow Symmetric

These reflectors are made of Alzak aluminum and their contour is such as to reflect the light of the fluorescent lamp with maximum efficiency.

Provided with knockout for starter.

Standard package, 10.

Length Inches	Deep Symmetric Semi-Concentrating		Shallow Symmetric Distributing		Directional Type Asymmetric	
	No.	Each	No.	Each	No.	Each
18	102	\$2.65	114	\$1.75	106	\$2.15
24	103	3.35	115	2.10	107	2.65
36	104	4.70	116	3.55	108	3.95
48	105	6.45	117	5.45	109	5.95

Reflector End Plates

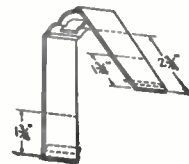


These die cast end plates, if used, close ends of the reflectors and provide extra strength and rigidity.

Standard package, 10.

Type	Satin Silvertone Finish		Unfinished
	No.	Each		No. Each
Deep Symmetrical.....	502	\$1.00	6422 \$.90
Shallow Symmetrical.....	503	.70	6423 .60
Directional (Right End).....	504	1.05	6424 .90
Directional (Left End).....	505	1.05	6425 .90

No. 129 Reflector Connectors

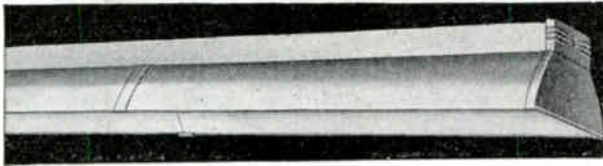


This connector consists of a soft metal strap, finished to match the reflectors. It fits over two adjoining sockets and is bent over the reflectors making a neat joining and preventing light leakage. One kind of strap serves for all types of reflector. Extra length, if any, is snipped off with tin shears before the edges of the strap are bent into place.

Standard package, 20.

No. 129.....each \$.20

Fluorescent CurtiStrip Semi-Concentrating Reflector Fixtures



Semi-concentrating reflector fixtures have deep symmetrical Alzak reflectors. They are intended for general or localized direct lighting over counters, cases and work tables.

UNWIRED, UNASSEMBLED UNITS NOT INCLUDING AUXILIARY EQUIPMENT. Complete with lamp holders and lamp starter sockets. No lamps, ballasts, lamp starters, or wire included.

WIRED, ASSEMBLED UNITS INCLUDING BALLASTS. All unwired units listed in the tables below can be furnished wired

and assembled with or without power factor correction.*

Wired units for two or more lamps may be ordered from the tables below by adding the word "wired" to the unwired unit number, and giving the voltage and power factor requirements. Prices on request.

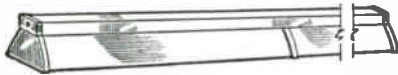
WIRED, ASSEMBLED UNITS FOR ONE LAMP (PACKAGED). These units include ballast, lamp holders, and lamp starter—complete except for lamp. All units are wired for 60 cycles a.c.

Decorative Type

The decorative type is for exposed-to-view mounting. The simple lines, well designed end caps, reflector end plates, and the satin silvertone finish combined to give this type of Fluorescent CurtiStrip Fixture a modern appearance.

Unwired, Unassembled Units Not Including Auxiliary Equipment

Basic Decorative Units



No.	Each	LAMPS				No.	Each	LAMPS			
		Lgth. Ft.	Watts	No.	Lgth. In.			Lgth. Ft.	Watts	No.	Lgth. In.
201	\$ 9.55	1½	15	1	18	213	\$21.70	6	60	2	36
208	10.55	2	20	1	24	216	26.45	8	80	2	48
212	12.50	3	30	1	36	211	31.10	8	80	4	24
215	15.15	4	40	1	48	214	30.15	9	90	3	36
209	17.65	4	40	2	24	202	37.00	10	100	5	24

Extension Sections



No.	216-E	214-E	202-E
Each	\$23.60	27.30	34.15
Length	8	9	10
Lamp Watts	80	90	100
No. of Lamps Required	2	3	5
Length of Lamps	48	36	24

Wired, Assembled Units for One Lamp (Packaged)

Ap- prox. LAMP Lgth. Ft.	Lamp Lgth. In.	Total Watts	With Low Power Factor				*With High Power Factor			
			110-125 VOLTS		220-250 VOLTS		110-125 VOLTS		220-250 VOLTS	
			No.	Each	No.	Each	No.	Each	No.	Each
2	20	24	24½	208-A	\$13.40	208-C	\$15.20			
3	30	36	40	212-A	17.25	212-C	18.90	212-D	\$17.90	
4	40	48	53	215-A	20.50	215-B	19.45	215-C	22.10	
				215-D	21.10					

*90 per cent or higher. High power factor is recommended. Use low power factor units where central power factor correction is employed.

Economy Type

The economy type is for concealed installation and use where a fine finish is not important. Fixture has a rust-resisting plated finish, plain channel end caps (two No. 46 extended end caps for making conduit connection), and open reflector ends. If reflector end plates are desired, they may be ordered separately.

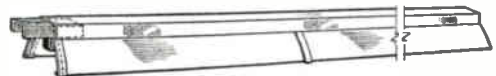
Unwired, Unassembled Units Not Including Auxiliary Equipment

Basic Economy Units



No.	Each	LAMPS				No.	Each	LAMPS			
		Lgth. Ft.	Watts	No.	Lgth. In.			Lgth. Ft.	Watts	No.	Lgth. In.
427	\$6.20	1½	15	1	18	412	\$17.35	6	60	2	36
428	7.10	2	20	1	24	413	21.90	8	80	2	48
429	9.05	3	30	1	36	414	26.60	8	80	4	24
430	11.35	4	40	1	48	415	25.35	9	90	3	36
411	13.70	4	40	2	24	416	32.50	10	100	5	24

Extension Sections

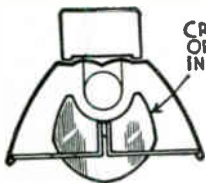


No.	413-E	415-E	416-E
Each	\$21.90	25.35	32.50
Length	8	9	10
Lamp Watts	80	90	100
No. of Lamps Required	2	3	5
Length of Lamps	48	36	24

Wired, Assembled Units for One Lamp (Packaged)

Ap- prox. LAMP Lgth. Ft.	Lamp Lgth. In.	Total Watts	With Low Power Factor				*With High Power Factor			
			110-125 VOLTS		220-250 VOLTS		110-125 VOLTS		220-250 VOLTS	
			No.	Each	No.	Each	No.	Each	No.	Each
2	20	24	24½	428-A	\$9.85	428-C	\$11.65			
3	30	36	40	429-A	13.70	429-B	\$12.70	429-C	15.30	
4	40	48	53	430-A	16.65	430-B	15.65	430-C	18.25	
				430-D	17.30					

No. 12403 Louver Assembly for 48-Inch Lamps



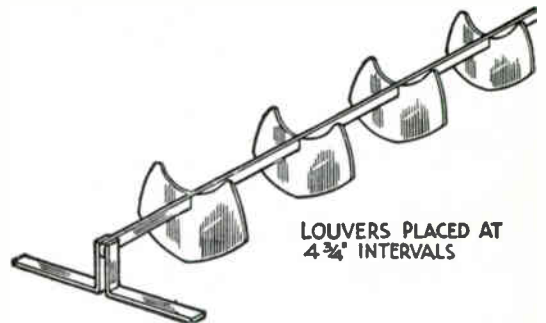
CROSS SECTION OF LOUVER ASSEMBLY INSTALLED IN REFLECTOR

This louver assembly adds a decorative touch and reduces brightness. It is for No. 105 symmetrical reflector—48 inches deep, and has ten fins mounted at intervals of 4¾ inches. The assembly is supported in the No. 106 Alzak reflector by steel arms at the

end of the assembly which rest on the lips of the reflector. This louver assembly is made of steel with aluminum lacquer finish.

Standard package, 2 assemblies.

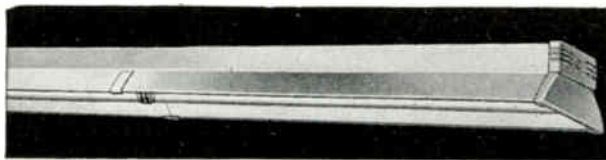
No. 12403.....each \$3.30



LOUVERS PLACED AT 4¾" INTERVALS

**Fluorescent CurtiStrip
Distributing Reflector Fixtures**

Distributing reflector fixtures have shallow symmetrical Alzak reflectors which spread the light over a wide area. They are for general direct lighting, local lighting when mounted below eye level, and for indirect lighting.



and assembled with or without power factor correction.* Wired units for two or more lamps may be ordered from the tables below by adding the word "wired" to the unwired unit number, and giving the voltage and power factor requirements. Prices on request.

UNWIRED, UNASSEMBLED UNITS NOT INCLUDING AUXILIARY EQUIPMENT. Complete with lamp holders and lamp starter sockets. No lamps, ballasts, lamp starters, or wire included.

WIRED, ASSEMBLED UNITS FOR ONE LAMP (PACKAGED). These units include ballast, lamp holders, and lamp starter—complete except for lamp. All units are wired for 60 cycles a.c.

WIRED, ASSEMBLED UNITS INCLUDING BALLASTS. All unwired units listed in the tables below can be furnished wired

Decorative Type

The decorative type is for exposed-to-view mounting. The simple lines, well designed end caps, reflector end plates, and the satin silvertone finish combine to give this type of Fluorescent CurtiStrip Fixture a modern appearance.

Economy Type

The economy type is for concealed installation and use where a fine finish is not important. Fixture has a rust-resisting plated finish, plain channel end caps (two No. 46 extended end caps for making conduit connection), and open reflector ends. If reflector end plates are desired, they may be ordered separately.

Unwired, Unassembled Units Not Including Auxiliary Equipment

Unwired, Unassembled Units Not Including Auxiliary Equipment

Basic Decorative Units



No.	Each	Lgth. Ft.	LAMPS			No.	Each	Lgth. Ft.	LAMPS		
			No.	Watts Req.	Lgth. In.				No.	Watts Req.	Lgth. In.
327	\$8.05	1½	15	1	18	339	\$18.35	6	60	2	36
333	8.65	2	20	1	24	342	23.15	8	80	2	48
337	10.70	3	30	1	36	336	25.20	8	80	4	24
341	13.50	4	40	1	48	340	25.65	9	90	3	36
334	14.30	4	40	2	24	328	30.00	10	100	5	24

Basic Economy Units



No.	Each	Lgth. Ft.	LAMPS			No.	Each	Lgth. Ft.	LAMPS		
			No.	Watts Req.	Lgth. In.				No.	Watts Req.	Lgth. In.
432	\$5.25	1½	15	1	18	455	\$14.95	6	60	2	36
433	5.80	2	20	1	24	456	19.80	8	80	2	48
434	7.85	3	30	1	36	457	21.45	8	80	4	24
435	10.30	4	40	1	48	458	21.75	9	90	3	36
454	11.10	4	40	2	24	459	26.05	10	100	5	24

Extension Sections



No.	Each	342-E	340-E	328-E
Each		\$21.45	23.35	27.75
Length	feet	8	9	10
Lamp Watts		80	90	100
No. of Lamps Required		2	3	5
Length of Lamps	inches	48	36	24

Extension Sections



No.	Each	456-E	458-E	459-E
Each		\$19.80	21.75	26.05
Length	feet	8	9	10
Lamp Watts		80	90	100
No. of Lamps Required		2	3	5
Length of Lamps	inches	48	36	24

Wired, Assembled Units for One Lamp (Packaged)

Wired, Assembled Units for One Lamp (Packaged)

Approx. Lgth. Ft.	LAMP Lgth. In.	Total Watts	With Low Power Factor				*With High Power Factor			
			110-125 VOLTS		220-250 VOLTS		110-125 VOLTS		220-250 VOLTS	
			No.	Each	No.	Each	No.	Each	No.	Each
2	20	24	24½	333-A	\$11.25	333-C	\$13.05			
3	30	36	40	337-A	14.90	337-B	\$13.90	337-C	16.50	
4	40	48	53	341-A	18.55	341-B	17.55	341-C	20.20	
						341-D	19.20			

Approx. Lgth. Ft.	LAMP Lgth. In.	Total Watts	With Low Power Factor				*With High Power Factor			
			110-125 VOLTS		220-250 VOLTS		110-125 VOLTS		220-250 VOLTS	
			No.	Each	No.	Each	No.	Each	No.	Each
2	20	24	24½	433-A	\$8.60	433-C	\$10.40			
3	30	36	40	434-A	12.25	434-B	\$11.25	434-C	13.85	
4	40	48	53	435-A	15.65	435-B	14.60	435-C	17.25	
						435-D	16.30			

*90 per cent or higher. High power factor is recommended. Use low power factor units where central power factor correction is employed.

Fluorescent CurtiStrip Hangers and Supports

Self-Aligning Pendant Type



No. 613



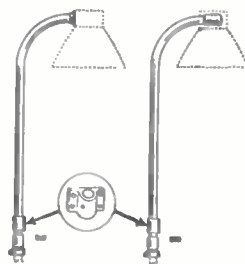
No. 614

No. 613. For mounting to outlet box in ceiling for direct lighting only. Use two supports for each section of Fluorescent CurtiStrip up to 10 feet. Lower end of hanger bolts to back of channel.

Standard suspension is 40 inches to top of CurtiStrip. May be cut to any shorter length without threading. If longer suspension is desired, it can be supplied at slight additional cost.

No. 614, with Angle Fitting. For mounting to outlet box in ceiling for direct or indirect lighting. Suspension, 21 inches to top of CurtiStrip.

Curved Arm Pedestal Type



No. 617

No. 620

Mounting height above table is adjustable to a maximum of 18 inches to top of CurtiStrip. Uprights should be spaced not more than 6 feet apart.

No. 617. For mounting to top edges of table, case, or counter. Connects to side of CurtiStrip. Includes 3/8-inch iron pipe connector, flexible conduit connector, and bushing for cord connection. Two or three brackets are suggested for each fixture up to 10 feet.

Same as No. 617 except that it connects to No. 501 CurtiStrip End Casting.

No. 620, with Angle Fitting.

Fluorescent CurtiStrip Directional Reflector Fixtures

Directional reflector fixtures have asymmetrical light distribution. They are for lighting sloping and vertical surfaces and for show window and cove applications.

UNWIRED, UNASSEMBLED UNITS NOT INCLUDING AUXILIARY EQUIPMENT. Complete with lamp holders and lamp starter sockets. No lamps, ballasts, lamp starters, or wire included.


WIRED, ASSEMBLED UNITS INCLUDING BALLASTS. All unwired units listed in the tables below can be furnished wired

Decorative Type

The decorative type is for exposed-to-view mounting. The simple lines, well designed end caps, reflector end plates, and the satin silvertone finish combine to give this type of Fluorescent CurtiStrip Fixture a modern appearance.


Unwired, Unassembled Units Not Including Auxiliary Equipment

Basic Decorative Units



No.	Each	Lgth. Ft.	LAMPS		No.	Each	Lgth. Ft.	LAMPS		
			No.	Lgth. In.				No.	Lgth. In.	
292	\$9.10	1½	15	18	304	\$20.25	6	60	2	36
298	9.95	2	20	24	308	25.15	8	80	2	48
302	11.80	3	30	36	301	28.10	8	80	4	24
306	14.75	4	40	48	305	27.85	9	90	3	36
299	16.25	4	40	24	293	33.70	10	100	5	24

Extension Sections



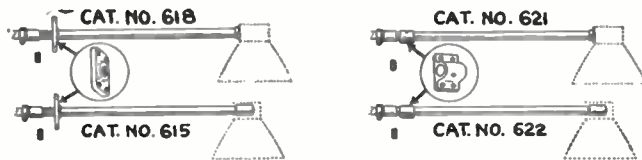
No.	Each	308-E	305-E	293-E
Each	\$22.55	24.90	30.75	
Length	feet	8	9	10
Lamp Watts		80	90	100
No. of Lamps Required		2	3	5
Length of Lamps	inches	48	36	24

Wired, Assembled Units for One Lamp (Packaged)

Approx. Lgth. Ft.	LAMP Lgth. In.	Total Watts	With Low Power Factor		*With High Power Factor	
			110-125 Volts	220-250 Volts	110-125 Volts	220-250 Volts
2	20	24½	298-A \$12.45		298-C \$14.25	
3	30	36	302-A 16.00	302-B \$15.05	302-C 17.65	302-D \$16.70
4	40	48	306-A 19.55	306-B 18.55	306-C 21.15	306-D 20.20

*90 per cent or higher. High power factor is recommended. Use low power factor units where central power factor correction is employed.

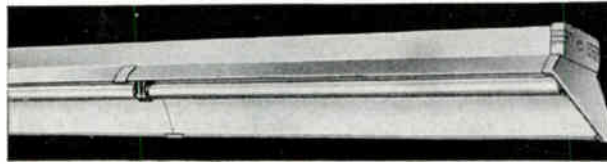
Fluorescent CurtiStrip Hangers and Supports Horizontal or Pedestal Type



Finished pipe included in these supports has a standard length of 18 inches. In horizontal position, supports permit use of Fluorescent CurtiStrip for direct or indirect lighting. Brackets should be spaced not more than 6 feet apart.

No. 618. For mounting on walls, wall cases or other vertical surfaces. Connects to side of CurtiStrip channel. Includes ⅜-inch iron pipe connector, flexible conduit connector, and bushing for cord connection. One mounting bracket is suggested for each 18 or 24-inch section; two for longer sections.

No. 621. Similar to No. 618 except for mounting on top surface of wall case or other horizontal surfaces. Extension is adjustable.



and assembled with or without power factor correction.* Wired units for two or more lamps may be ordered from the tables below by adding the word "wired" to the unwired unit number, and giving the voltage and power factor requirements. Prices on request.


WIRED, ASSEMBLED UNITS FOR ONE LAMP (PACKAGED). These units include ballast, lamp holders, and lamp starter—complete except for lamp. All units are wired for 60 cycles a.c.

Economy Type

The economy type is for concealed installation and use where a fine finish is not important. Fixture has a rust-resisting plated finish, plain channel end caps (two No. 46 extended end caps for making conduit connection), and open reflector ends. If reflector end plates are desired, they may be ordered separately.


Unwired, Unassembled Units Not Including Auxiliary Equipment

Basic Economy Units



No.	Each	Lgth. Ft.	LAMPS		No.	Each	Lgth. Ft.	LAMPS		
			No.	Lgth. In.				No.	Lgth. In.	
437	\$5.60	1½	15	18	465	\$15.80	6	60	2	36
438	6.40	2	20	24	466	20.85	8	80	2	48
439	8.25	3	30	36	467	23.85	8	80	4	24
442	10.85	4	40	48	468	22.95	9	90	3	36
464	12.35	4	40	24	469	29.05	10	100	5	24

Extension Sections



No.	Each	466-E	468-E	469-E
Each	\$20.85	22.95	29.05	
Length	feet	8	9	10
Lamp Watts		80	90	100
No. of Lamps Required		2	3	5
Length of Lamps	inches	48	36	24

Wired, Assembled Units for One Lamp (Packaged)

Approx. Lgth. Ft.	LAMP Lgth. In.	Total Watts	With Low Power Factor		*With High Power Factor	
			110-125 Volts	220-250 Volts	110-125 Volts	220-250 Volts
2	20	24½	438-A \$9.15		438-C \$10.95	
3	30	36	439-A 12.70	439-B \$11.75	439-C 14.35	439-D \$13.40
4	40	48	442-A 15.95	442-B 14.90	442-C 17.55	442-D 16.60



No. 615, with Angle Fitting. For mounting on tables, counters, walls, wall cases, etc. Includes ⅜-inch iron pipe connector, flexible conduit connector, and bushing for cord connection.

No. 622, with Angle Fitting. Similar to No. 615 except for mounting on top surface of wall case or side of table or counter. Extension adjustable without cutting pipe.

No. 616, with Angle Fitting. For mounting to outlet box in wall or other vertical surfaces. Slip-ring style canopy.

No. 619. For mounting to outlet box in wall or other vertical surfaces. Connects to side of CurtiStrip channel. Includes slip-ring style canopy. One mounting bracket is suggested for each 18 or 24-inch section—two for longer sections.

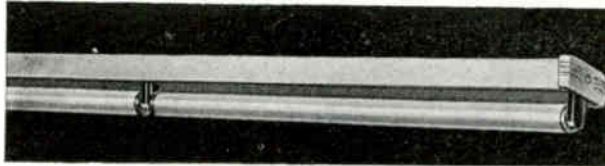


Fluorescent CurtiStrip Reflectorless Fixtures

Reflectorless fixtures have aluminum bronze finish channel covers. They are suitable for certain strip lighting and decorative applications.

UNWIRED, UNASSEMBLED UNITS NOT INCLUDING AUXILIARY EQUIPMENT. Complete with lamp holders and lamp starter sockets. No lamps, ballasts, lamp starters, or wire included.

WIRED, ASSEMBLED UNITS INCLUDING BALLASTS. All unwired units listed in the tables below can be furnished wired



and assembled with or without power factor correction.* Wired units for two or more lamps may be ordered from the tables below by adding the word "wired" to the unwired unit number, and giving the voltage and power factor requirements. Prices on request.

WIRED, ASSEMBLED UNITS FOR ONE LAMP (PACKAGED). These units include ballast, lamp holders, and lamp starter—complete except for lamp. All units are wired for 60 cycles a.c.

Decorative Type

The decorative type is for exposed-to-view mounting. The simple lines, well designed end caps, and the satin silver-tone finish combine to give this type of Fluorescent CurtiStrip Fixture a modern appearance.

Economy Type

The economy type is for concealed installation and use where a fine finish is not important. Fixture has a rust-resisting plated finish, and plain channel end caps (two No. 46 extended end caps for making conduit connection).

Unwired, Unassembled Units Not Including Auxiliary Equipment

Basic Decorative Units

No.	Each	LAMPS			No.	Each	LAMPS				
		Lgth. Ft.	Watts	No. Lgth. In.			Lgth. Ft.	Watts	No. Lgth. In.		
381	\$5.00	1½	15	1	18	392	\$10.90	6	60	2	36
387	5.45	2	20	1	24	389	12.95	6	60	3	24
391	6.15	3	30	1	36	395	12.25	8	80	2	48
394	7.10	4	40	1	48	390	16.35	8	80	4	24
388	9.10	4	40	2	24	393	14.85	9	90	3	36
						383	19.05	10	100	5	24

Unwired, Unassembled Units Not Including Auxiliary Equipment

Basic Economy Units

No.	Each	LAMPS			No.	Each	LAMPS				
		Lgth. Ft.	Watts	No. Lgth. In.			Lgth. Ft.	Watts	No. Lgth. In.		
444	\$3.70	1½	15	1	18	491	\$8.65	6	60	2	36
445	4.10	2	20	1	24	492	11.45	6	60	3	24
446	4.80	3	30	1	36	493	9.75	8	80	2	48
447	5.40	4	40	1	48	494	13.85	8	80	4	24
490	7.45	4	40	2	24	495	12.15	9	90	3	36
						496	16.55	10	100	5	24

Extension Sections



No.	Each	395-E	393-E	383-E
Each		\$11.20	13.90	18.10
Length	feet	8	9	10
Lamp Watts		80	90	100
No. of Lamps Required		2	3	5
Length of Lamps	inches	48	36	24

Extension Sections



No.	Each	493-E	495-E	496-E
Each		\$9.55	11.90	16.30
Length	feet	8	9	10
Lamp Watts		80	90	100
No. of Lamps Required		2	3	5
Length of Lamps	inches	48	36	24

Wired, Assembled Units for One Lamp (Packaged)

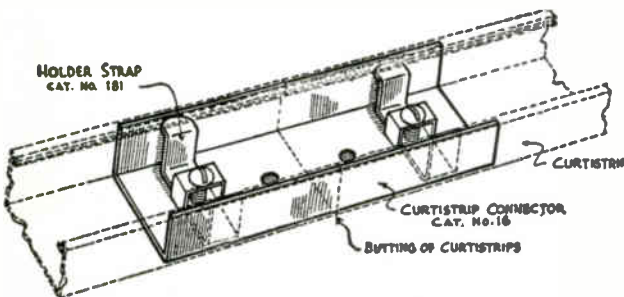
Ap- prox. LAMP Lgth.	Lgth. Total Ft. Watts In. Watts	With Low Power Factor				*With High Power Factor			
		110-125 Volts		220-250 Volts		110-125 Volts		220-250 Volts	
		No.	Each	No.	Each	No.	Each	No.	Each
2	20 24 24½	387-A	\$8.50	387-C	\$10.25	391-C	12.80	391-D	\$11.85
3	30 36 40	391-A	11.20	391-B	\$10.20	394-C	14.35	394-D	13.40
4	40 48 53	394-A	12.75	394-B	11.75				

Wired, Assembled Units for One Lamp (Packaged)

Approx. LAMP Lgth.	Lgth. Total Ft. Watts In. Watts	With Low Power Factor				*With High Power Factor			
		110-125 Volts		220-250 Volts		110-125 Volts		220-250 Volts	
		No.	Each	No.	Each	No.	Each	No.	Each
2	20 24 24½	445-A	\$7.25	445-C	\$9.05	446-C	11.55	446-D	\$10.60
3	30 36 40	446-A	9.95	446-B	\$8.95	447-C	12.85	447-D	11.90
4	40 48 53	447-A	11.25	447-B	10.25				

*90 per cent or higher. High power factor is recommended. Use low power factor units where central power factor correction is employed.

How to Order Continuous Runs



Joining Two Sections of CurtiStrip without Drilling

Extension sections for Fluorescent CurtiStrip permit making up continuous runs with any number of lamps. Basic units come in lengths up to 10 feet. When a section more than 10 feet long is desired, the run is made up with one basic unit and one or more extension sections. The required extension sections should be selected first and the basic unit used to complete the run.

For example, to make up a run 20 feet long with 48-inch lamps, order two 8-foot extension sections (this is the only length extension section available for the 48-inch lamp) and order one 4-foot basic unit to complete the run.

Extension sections are similar to the corresponding basic units except that in place of the end pieces, a connector assembly is provided. With decorative type units, two No. 181 holder straps are provided so that the joint can be made without screw heads showing.

Fluorescent CurtiStrip

Winged-Back Reflector Fixtures

Decorative Type



Winged-back reflector fixtures have a streamlined, decorative appearance. They are for strip lighting and other decorative lighting. One-lamp units have a wide application in halls and corridors. Usually mounted directly on flat surface with bolts or screws through back of Curti-Strip or with No. 9 strap. Satin silvertone finish.

UNWIRED, UNASSEMBLED UNITS NOT INCLUDING AUXILIARY EQUIPMENT. Complete with lamp holders and lamp starter sockets. No lamps, ballasts, lamp starters or wire included.

WIRED, ASSEMBLED UNITS INCLUDING BALLASTS. All unwired units listed in the tables below can be furnished wired and assembled with or without power factor correction.* Wired units for two or more lamps may be ordered from the tables below by adding the word "wired" to the unwired unit number, and giving voltage and power factor requirements. Prices on request.

WIRED, ASSEMBLED UNITS FOR ONE LAMP (PACKAGED). These units include ballast, lamp holders, and lamp starter—complete except for lamp. All units are wired for 60 cycles a.c.

Unwired, Unassembled Units Not Including Auxiliary Equipment

Basic Decorative Units



No.	Each	Lgth. Ft.	LAMPS			No.	Each	Lgth. Ft.	LAMPS		
			Watts	Req.	In.				Watts	Req.	In.
366	\$6.45	1½	15	1	18	377	\$17.10	6	60	2	36
372	7.05	2	20	1	24	374	18.40	6	60	3	24
376	9.10	3	30	1	36	380	22.15	8	80	2	48
379	11.90	4	40	1	48	375	23.65	8	80	4	24
373	12.70	4	40	2	24	378	24.30	9	90	3	36
...	...	...	...	...	...	368	28.40	10	100	5	24

Extension Sections



No.	Each	380-E	378-E	368-E
Each		\$21.45	23.65	27.75
Length	feet	8	9	10
Lamp Watts		80	90	100
No. of Lamps Required		2	3	5
Length of Lamps	inches	48	36	24

Wired, Assembled Units for One Lamp (Packaged)

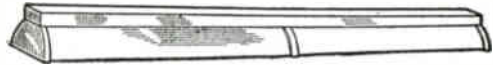
Ap- prox. Lgth. Ft.	LAMP Lgth. In.	Total Watts	With Low Power Factor				*With High Power Factor			
			110-125 VOLTS		220-250 VOLTS		110-125 VOLTS		220-250 VOLTS	
			No.	Each	No.	Each	No.	Each	No.	Each
1½	15	18	366-A	\$8.90						
2	20	24	372-A	9.75			372-C	\$11.50		
3	30	36	376-A	13.65	376-B	\$12.65	376-C	15.30	376-D	\$14.30
4	40	48	379-A	16.15	379-B	15.15	379-C	17.80	379-D	16.80

*90 per cent or higher. High power factor is recommended. Use low power factor units where central power factor correction is employed.

Industrial Fixtures

Regular End to End

Basic Units for Two 40-Watt Lamps



Type of Reflector	†Unwired		‡Wired for 110-125 Volts		‡Wired for 220-250 Volts	
	No.	Each	No.	Each	No.	Each
Deep Symmetrical	644	\$24.60	644-C	\$33.75	644-D	\$32.45
Shallow Symmetrical	645	22.10	645-C	31.20	645-D	29.90
Asymmetrical	646	23.70	646-C	32.80	646-D	31.50

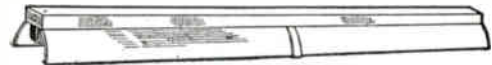
Extension Sections for Two 40-Watt Lamps



Type of Reflector	†Unwired		‡Wired for 110-125 Volts		‡Wired for 220-250 Volts	
	No.	Each	No.	Each	No.	Each
Deep Symmetrical	644-E	\$22.80	644-EC	\$31.90	644-ED	\$30.60
Shallow Symmetrical	645-E	20.80	645-EC	29.95	645-ED	28.60
Asymmetrical	646-E	21.80	646-EC	30.95	646-ED	29.60

Economy Type End to End

Basic Units for Two 40-Watt Lamps



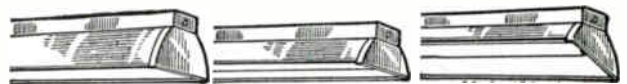
Type of Reflector	†Unwired		‡Wired for 110-125 Volts		‡Wired for 220-250 Volts	
	No.	Each	No.	Each	No.	Each
Deep Symmetrical	647	\$22.65	647-C	\$31.75	647-D	\$30.45
Shallow Symmetrical	648	20.55	648-C	29.77	648-D	28.45
Asymmetrical	649	21.60	649-C	30.70	649-D	29.38

Extension Sections for Two 40-Watt Lamps

Deep Symmetrical	644-E	\$22.80	644-EC	\$31.90	644-ED	\$30.60
Shallow Symmetrical	645-E	20.80	645-EC	29.95	645-ED	28.60
Asymmetrical	646-E	21.80	646-EC	30.95	646-ED	29.60

One-Lamp Industrial Units (Packaged)

For Conduit Suspension



Units are wired and complete with ballast and lamp starter in channel for use with one lamp—lamp not included. Fixtures for 24, 36 or 48-inch lamps are available with any of the three reflector shapes.

Each end of the channel is closed by a plain end cap with a knockout. Units are supplied with a fitting for supporting from ½-inch conduit—conduit not included. This fitting can also be used for splice box.

With Deep Symmetrical Reflector

LAMP Watts	Lgth. In.	Unwired No. Each	Wired for Low Power Factor				*Wired for High Power Factor				
			110-125 VOLTS		220-250 VOLTS		110-125 VOLTS		220-250 VOLTS		
			No.	Each	No.	Each	No.	Each	No.	Each	
20	24	651	\$10.80	651A	\$12.90			651C	\$14.65		
30	36	652	13.30	652A	16.65	652B	\$15.70	652C	18.30	652D	\$17.35
40	48	653	16.85	653A	20.05	653B	19.00	653C	21.65	653D	20.65

With Shallow Symmetrical Reflector

20	24	670	\$8.95	670A	\$10.65			670C	\$12.45		
30	36	671	11.60	671A	14.30	671B	\$13.30	671C	15.90	671D	\$14.95
40	48	672	14.90	672A	18.10	672B	17.10	672C	19.75	672D	18.75

With Asymmetrical Reflector

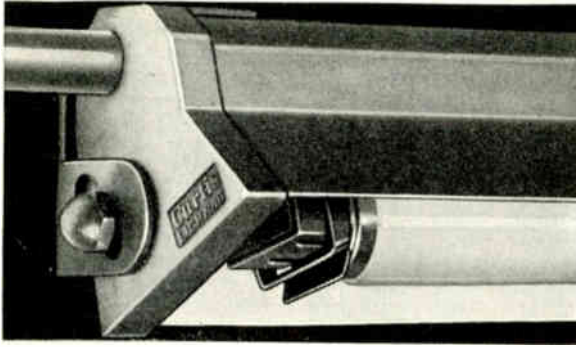
20	24	688	\$10.20	688A	\$11.95			688C	\$13.75		
30	36	689	12.45	689A	15.45	689B	\$14.45	689C	17.05	689D	\$16.10
40	48	690	15.85	690A	19.10	690B	18.10	690C	20.70	690D	19.75

*90 per cent or higher. High power factor is recommended. Use low power factor units where central power factor correction is employed.

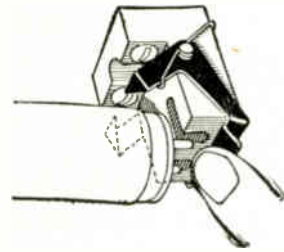
†Assembled.
‡With high power factor two-lamp ballast. Complete with wire and auxiliary equipment, but less lamps.

Curtis Fluorescent CaseStrip

Listed by Underwriters' Laboratories, Inc.



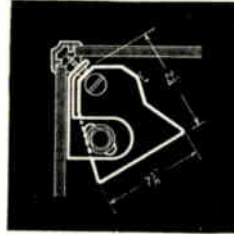
So that CaseStrip will fit the special requirements of each individual showcase, the mounting brackets are designed to permit angling the reflector. After fastening in place, the channel can be raised, lowered, or moved slightly forward or backward to make a snug fit in the showcase.



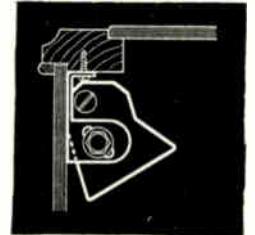
The pop-out lamp ejector (see small illustration) eliminates usual awkwardness associated with cleaning and relamping showcase equipment. By pressing the ejector lever back on the socket, the lamp automatically pops out into the hand.

CaseStrip has a special fluorescent reflecting surface: Fluracite, a heat-treated, per-

manent finish. Fluorescent lamps and Fluracite reflecting surfaces produce daylight quality to reveal buying appeal. Because the fluorescent lamp is a mercury-arc type, a ballast and starter are necessary with each lamp. These may be ordered separately, or as an alternative, they are included when CaseStrip is ordered wired complete.

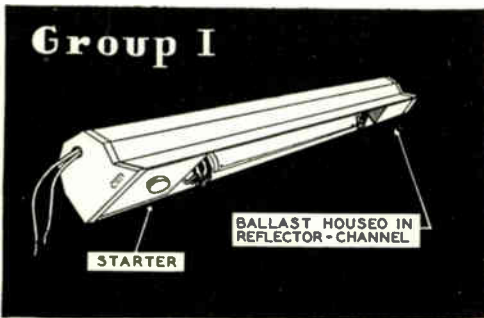


Detail of a typical metal-frame showcase. Reveals the end support brackets bent to conform to the angled molding on which equipment is mounted.



Supporting screws go into vertical edge of wood-frame showcase; obtainable for horizontal mounting as well. Also available for all-glass showcase installation.

Two small, sturdy support brackets are supplied with each CaseStrip fixture (intermediary supports are included with long runs). These support brackets are so constructed that they can be bent (on the job) to any practical angle for mounting on case frame. Further, a screw slot in the arm of the end support bracket allows the reflector to be tilted for proper angle of light distribution before it is locked in place. Installation of CaseStrip in all typical showcases—whether wood frame, metal frame, or all glass—may be neatly and easily accomplished. CaseStrip fits snugly along the top edge of the showcase.



Wired and Assembled Reflector-Channel Units

Group I, with Starter and Ballast in Reflector-Channel—Entrance Tubing and Lamps Not Included

These units are complete with wire, sockets, starter and ballast, but less tubing and entrance fittings. Give inside dimensions of case. Units will be shortened on order to fit any case between the minimum and maximum shown in the table.

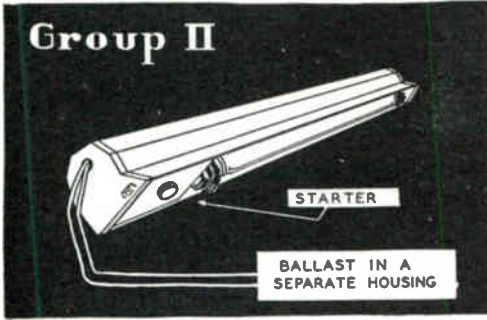
To provide space for entrance fittings and installing clearance, the dimensions given are 3/4 inches more than the overall length of reflector channel and end caps. Inside length of showcase must be mentioned on the order.

All units are wired for 60 cycles a.c.

Nominal Showcase Length Feet	INSIDE LENGTH OF CASE, IN., ALLOWING FOR FITTING AND INSTALLING		LAMPS REQUIRED		TOTAL WATTS INCLUDING BALLAST		Entrance Size Requirements (No. 18 Wires)	With Low Power Factor				*With High Power Factor as Shown 90% or Over			
	Min.	Max.	Length Inches	Wattage	110 Volts	220 Volts		110-125 Volts		220-250 Volts		110-125 Volts		220-250 Volts	
								No.	Each	No.	Each	No.	Each	No.	Each
3 to 4	32 1/4	41 1/8	1-18	1-15	20	..	M.B.	2	902A	\$12.20	..	..	..	..
	32 1/4	41 1/8	1-18	1-15	20	..	S.S.	2	903A	12.20	..	..	..	..
	36 1/4	41 1/8	1-18	1-15	20	..	M.B.	..	..	..	902C	\$14.15	..	..
	36 1/4	41 1/8	1-18	1-15	20	..	S.S.	..	..	..	903C	14.15	..	..
5 to 6	54 3/4	71 1/2	1-36	1-30	40	39	M.B.	2	904A	16.50	904B	\$15.50	..	..
	54 3/4	71 1/2	1-36	1-30	40	39	S.S.	2	905A	16.50	905B	15.50	..	..
	60 1/4	71 1/2	1-36	1-30	40	39	M.B.	..	..	..	904C	18.30	904D	\$17.30
	60 1/4	71 1/2	1-36	1-30	40	39	S.S.	..	..	..	905C	18.30	905D	17.30
5 1/2 to 6	65 1/4	71 1/2	2-18	2-15	39	..	M.B.	2	..	..	907C	23.35	..	..
	65 1/4	71 1/2	2-18	2-15	39	..	S.S.	2	..	..	908C	23.35	..	..
5 1/2 to 8	65 1/4	95 1/2	2-18	2-15	39	..	M.B.	2	..	..	909C	28.05	..	..
	65 1/4	95 1/2	2-18	2-15	39	..	S.S.	2	..	..	911C	28.05	..	..
7 to 8	83 3/8	95 1/2	1-18 & 1-36	1-15 & 1-30	60	..	M.B.	2	912A	27.95	..	..	..	..
	83 3/8	95 1/2	1-18 & 1-36	1-15 & 1-30	60	..	S.S.	2	913A	27.95	..	..	..	..
	93 3/8	95 1/2	1-18 & 1-36	1-15 & 1-30	60	..	M.B.	..	..	..	912C	31.70	..	..
	93 3/8	95 1/2	1-18 & 1-36	1-15 & 1-30	60	..	S.S.	..	..	..	913C	31.70	..	..
9 to 10	106	119 1/2	2-36	2-30	80	78	M.B.	2	914A	33.70	914B	31.70	..	..
	106	119 1/2	2-36	2-30	80	78	S.S.	2	915A	33.70	915B	31.70	..	..
	117	119 1/2	2-36	2-30	80	78	M.B.	..	..	..	914C	37.25	914D	35.35
	117	119 1/2	2-36	2-30	80	78	S.S.	..	..	..	915C	37.25	915D	35.35

*High power factors can be had with low power factor numbers by adding one large capacitor for a number of lamps in No. 157 auxiliary housing.

†M.B.—monumental bronze. S.S.—satin silvertone.



Curtis Fluorescent CaseStrip

Listed by Underwriters' Laboratories, Inc.

Wired and Assembled Reflector-Channel Units

Group II, with Starter in Reflector-Channel and Ballast in Separate Housing—Entrance Tubing and Lamps Not Included (Ballast Housing Included in Catalog Numbers)

These units are complete with wire, sockets, starter and ballast, but less tubing and entrance fittings. Give inside dimensions of case. Units will be shortened on order to fit any case between the minimum and maximum shown in the table.

To provide space for entrance fittings and installing clearance, the dimensions given are 3/4 inches more than the overall length of the reflector channel and end caps. Inside length of the showcase must be mentioned on the order. All units are wired for 60 cycles a.c.

Nominal Showcase Length Feet	INSIDE LENGTH OF CASE, IN., ALLOWING FOR FITTING AND INSTALLING		LAMPS REQUIRED		TOTAL WATTS INCLUDING BALLAST		Entrance Size Requirements		With Low Power Factor			*With High Power Factor as Shown 90% or Over				
	Min.	Max.	Length Inches	Wattage	110 Volts	220 Volts	(Finish Wires)	No.	110-125 Volts Each	220-250 Volts No.	220-250 Volts Each	110-125 Volts No.	110-125 Volts Each	220-250 Volts No.	220-250 Volts Each	
2 1/2 to 4	26 1/2	41 1/8	1-18	1-15	20	..	M.B.	2	916A	\$12.55	..	..	916C	\$14.35	..
	26 1/2	41 1/8	1-18	1-15	20	..	S.S.	2	917A	12.55	..	..	917C	14.35	..
4 to 6	44 1/2	71 1/2	1-36	1-30	40	39	M.B.	2	918A	16.90	918B	\$15.95	918C	19.15	918D	\$17.60
	44 1/2	71 1/2	1-36	1-30	40	39	S.S.	2	919A	16.90	919B	15.95	919C	19.15	919D	17.60
4 1/2 to 6	49 1/2	71 1/2	2-18	2-15	39	..	M.B.	3	920A	22.10	..	..	920C	25.95	..
	49 1/2	71 1/2	2-18	2-15	39	..	S.S.	3	921A	22.10	..	..	921C	25.95	..
6	67 1/2	71 1/2	1-18 & 1-36	1-15 & 1-30	60	..	M.B.	3	922A	23.90	..	..	922C	27.85	..
	67 1/2	71 1/2	1-18 & 1-36	1-15 & 1-30	60	..	S.S.	3	923A	23.90	..	..	923C	27.85	..
6 to 8	67 1/2	95 1/2	1-18 & 1-36	1-15 & 1-30	60	..	M.B.	3	926A	28.80	..	..	926C	32.70	..
	67 1/2	95 1/2	1-18 & 1-36	1-15 & 1-30	60	..	S.S.	3	927A	28.80	..	..	927C	32.70	..
8	71 1/2	95 1/2	3-18	3-15	59	..	M.B.	4	924A	33.00	..	..	924C	38.60	..
	71 1/2	95 1/2	3-18	3-15	59	..	S.S.	4	925A	33.00	..	..	925C	38.60	..
7 1/2 to 8	91 1/4	95 1/2	2-36	2-30	75	73	M.B.	3	928C	32.30	928D	32.30
	91 1/4	95 1/2	2-36	2-30	75	73	S.S.	3	929C	32.30	929D	32.30
8 to 10	85 1/2	95 1/2	2-36	2-30	80	78	M.B.	3	930A	30.30	930B	28.30	930C	34.10	930D	32.15
	85 1/2	95 1/2	2-36	2-30	80	78	S.S.	3	931A	30.30	931B	28.30	931C	34.10	931D	32.15
8 to 10	91 1/4	119 1/2	2-36	2-30	75	73	M.B.	3	932C	36.55	932D	36.55
	91 1/4	119 1/2	2-36	2-30	75	73	S.S.	3	933C	36.55	933D	36.55

*High power factors can be had with low power factor numbers by adding one large capacitor for a number of lamps in No. 157 auxiliary housing.

†M.B.—Monumental Bronze. S.S.—Satin Silvertone.

Curtis Case Strip Standardized Entrance Equipment

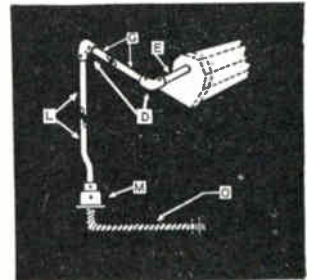
Using 3/8-Inch Brass Tubing

For Down Tube in Front of Case

No.	Each	Description	Finish	Capacity, No. 18 Wires
707	\$3.05	As Illustrated, No Exceptions	Monumental Bronze	4
708	3.05	As Illustrated, No Exceptions	Satin Silvertone	4
709	2.85	As Illustrated, Except Close Nipple in Place of E...	Monumental Bronze	4
711	2.85	As Illustrated, Except Close Nipple in Place of E...	Satin Silvertone	4
713	2.50	As Illustrated, Except Straight Tube in Place of L...	Monumental Bronze	4
714	2.50	As Illustrated, Except Straight Tube in Place of L...	Satin Silvertone	4
715	2.30	As Illustrated, Except Straight Tube in Place of L and Close Nipple in Place of E...	Monumental Bronze	4
716	2.30	As Illustrated, Except Straight Tube in Place of L and Close Nipple in Place of E...	Satin Silvertone	4

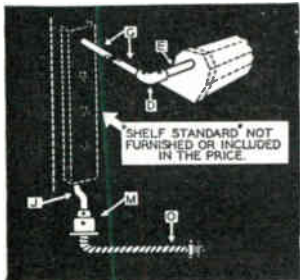
For Down Tube in Back of Case

No.	Each	Description	Finish	Capacity, No. 18 Wires
717	\$3.80	As Illustrated, No Exceptions	Monumental Bronze	4
718	3.80	As Illustrated, No Exceptions	Satin Silvertone	4
719	3.60	As Illustrated, Except Close Nipple in Place of E...	Monumental Bronze	4
721	3.60	As Illustrated, Except Close Nipple in Place of E...	Satin Silvertone	4
723	3.25	As Illustrated, Except Straight Tube in Place of L...	Monumental Bronze	4
724	3.25	As Illustrated, Except Straight Tube in Place of L...	Satin Silvertone	4
725	3.05	As Illustrated, Except Straight Tube in Place of L and Close Nipple in Place of E...	Monumental Bronze	4
726	3.05	As Illustrated, Except Straight Tube in Place of L and Close Nipple in Place of E...	Satin Silvertone	4



Frame Standard Used for Down Tube

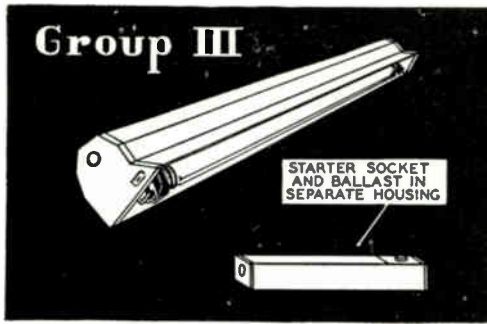
No.	Each	Description	Finish	Capacity, No. 18 Wires
727	\$3.15	As Illustrated, No Exceptions	Satin Silvertone	4
728	2.95	As Illustrated, Except Close Nipple in Place of E...	Satin Silvertone	4
729	2.60	As Illustrated, Except Straight Tube in Place of J...	Satin Silvertone	4
730	2.40	As Illustrated, Except Straight Tube in Place of J and Close Nipple in Place of E...	Satin Silvertone	4



Curtis Fluorescent CaseStrip

Listed by Underwriters' Laboratories, Inc.

Unwired and Unassembled Reflector-Channel Units

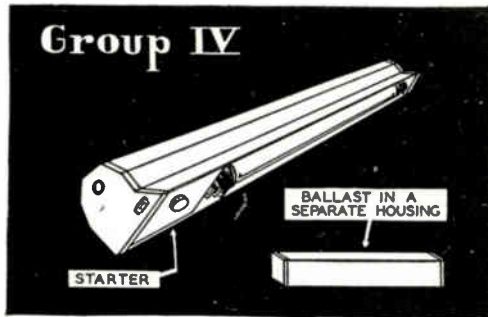


Group III, Arranged for Starter Socket and Ballast In Separate Housing

Includes lamp holders and wire, but less ballast housing, lamp starter and entrance tubing and fittings. Lamps are not included.

CaseStrip channel supplied is minimum length to house single lamp.

No.	Each	Nominal Showcase Length Feet	INSIDE LENGTH OF CASE, IN., ALLOWING FOR FITTINGS AND INSTALLING		LENGTH OF UNIT, INCHES		LAMPS REQUIRED		Finish	Entrance Size Requirements (No. 18 Wire)	Recommended Auxiliary Housings, No.
			Min.	Max.	Channel Only	With End Caps	Length Inches	Wattage			
124	\$5.75	4 or Less	23 ³ / ₈	23 ³ / ₈	20	20 ³ / ₈	18	15	Monumental Bronze	4	(e) 238
123	5.75	4 or Less	23 ³ / ₈	23 ³ / ₈	20	20 ³ / ₈	18	15	Satin Silvertone	4	(e) 238
126	6.95	4 to 6	41 ⁵ / ₈	41 ⁵ / ₈	38	38 ⁵ / ₈	36	30	Monumental Bronze	4	(a) 238 or 239
125	6.95	4 to 6	41 ⁵ / ₈	41 ⁵ / ₈	38	38 ⁵ / ₈	36	30	Satin Silvertone	4	(a) 238 or 239



Group IV, Arranged for Starter Socket in Reflector-Channel and Ballast in a Separate Housing

Includes lamp holders, starter socket and wire, but less ballast housing, lamp starter and entrance tubing and fittings. Lamps are not included.

No.	Each	Nominal Showcase Length Feet	INSIDE LENGTH OF CASE, IN., ALLOWING FOR FITTINGS AND INSTALLING		LENGTH OF UNIT, INCHES		LAMPS REQUIRED		Finish	Entrance Size Requirements (No. 18 Wire)	Recommended Auxiliary Housings, No.
			Min.	Max.	Channel Only	With End Caps	Length Inches	Wattage			
852	\$8.50	2 ¹ / ₂ to 4	26 ¹ / ₂	41			1-18	1-15	Monumental Bronze	2	(e) 156
853	8.50	2 ¹ / ₂ to 4	26 ¹ / ₂	41			1-18	1-15	Satin Silvertone	2	(e) 156
854	10.90	4 to 6	44 ¹ / ₂	71 ¹ / ₂			1-36	1-30	Monumental Bronze	2	(b) 156 or 157
855	10.90	4 to 6	44 ¹ / ₂	71 ¹ / ₂			1-36	1-30	Satin Silvertone	2	(b) 156 or 157
856	14.55	4 to 6	49	71 ¹ / ₂			2-18	2-15	Monumental Bronze	*3	(e) 157
857	14.55	4 to 6	49	71 ¹ / ₂			2-18	2-15	Satin Silvertone	*3	(e) 157
858	14.50	6	67	71 ¹ / ₂		These units may be shortened to any length between minimum and maximum by purchaser.	1-18 & 1-36	1-15 & 1-30	Monumental Bronze	*3	(e) 157
859	14.50	6	67	71 ¹ / ₂			1-18 & 1-36	1-15 & 1-30	Satin Silvertone	*3	(e) 157
862	21.80	6 to 8	71 ¹ / ₂	95 ¹ / ₂			3-18	3-15	Monumental Bronze	*4	(c) 157 or 158
863	21.80	6 to 8	71 ¹ / ₂	95 ¹ / ₂			3-18	3-15	Satin Silvertone	*4	(c) 157 or 158
872	22.95	8 to 10	91	119 ¹ / ₂			2-36	2-30	Monumental Bronze	†3	(f) †159
873	22.95	8 to 10	91	119 ¹ / ₂			2-36	2-30	Satin Silvertone	†3	(f) †159
864	18.75	6 to 8	67	95 ¹ / ₂			1-18 & 1-36	1-15 & 1-30	Monumental Bronze	*3	(e) 157
865	18.75	6 to 8	67	95 ¹ / ₂			1-18 & 1-36	1-15 & 1-30	Satin Silvertone	*3	(e) 157
868	19.20	8	91	95 ¹ / ₂			2-36	2-30	Monumental Bronze	†3	(f) †159
869	19.20	8	91	95 ¹ / ₂			2-36	2-30	Satin Silvertone	†3	(f) †159
866	18.75	7 ¹ / ₂ to 8	85	95 ¹ / ₂		2-36	2-30	Monumental Bronze	*3	(d) 157 or 158	
867	18.75	7 ¹ / ₂ to 8	85	95 ¹ / ₂		2-36	2-30	Satin Silvertone	*3	(d) 157 or 158	

*Number of wires shown is the total from the ballast housing to the reflector and is based on the use of a separate ballast for each lamp.

†Number of wires shown is based on the use of a two-lamp ballast to care for both lamps.

‡Reflector-channel includes housing for starting compensator (starting compensator not included). One starting compensator necessary when using a 30-watt two-lamp ballast.

To provide space for entrance fittings and installing clearance, the dimensions given are 3¹/₄ inches more than the overall length of the CaseStrip reflector-channel and end caps.











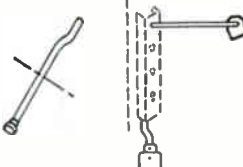









For cases longer than the above maximums, use entrance equipment including part E.

Explanation of Key Letters

- a. For low power factor on any a.c. voltage use No. 238. For high power factor on any a.c. voltage, use No. 239.
- b. For low power factor on any a.c. voltage or high power factor on 220-250 volts, 60 cycles, use No. 156. For high power factor on any 110-125 or 220-250 voltage, 50 cycles, use No. 157.
- c. For low power factor on 110-125 volts a.c., use No. 157.

- For high power factor on 110-125 volts a.c., use No. 158.
- d. For low power factor on any voltage, 60 cycles a.c., use No. 157. For high power factor on 110-125 or 220-250 volts, 60 cycles a.c., use No. 158.
- e. For high or low power factor.
- f. For high power factor two-lamp ballast on 110-125 or 220-250 volts, 60 cycles a.c.

Curtis CaseStrip Standardized Entrance Equipment

Code Letter	Description	Capacity, No. 18 Wires	Finish	No.	Each
	A Entrance Elbow with Set Screws. One End Fits CaseStrip; Other Solders into 5/16-Inch Flexible Conduit.	4	Monumental Bronze Satin Silvertone	218 217	\$.60 .60
	B Entrance Elbow with Set Screws. One End Fits CaseStrip; Other Slips 3/8-Inch Brass Tubing.	4	Monumental Bronze Satin Silvertone	221 219	\$.55 .55
	C Entrance Elbow with Set Screws. One End Fits CaseStrip; Other Slips 5/16-Inch Flexible Conduit or 1/2-Inch Brass Tubing.	4 8	Monumental Bronze Satin Silvertone	291 289	\$.55 .55
	D Elbow with Set Screws. Both Ends Slip 3/8-Inch Brass Tubing.	4	Monumental Bronze Satin Silvertone	223 222	\$.35 .35
	Elbow with Set Screws. Both Ends Slip 1/2-Inch Brass Tubing.	8	Monumental Bronze Satin Silvertone	225 224	\$.40 .40
	E Straight-in Entrance Tube of Brass, 16 Inches Long. One End Fits CaseStrip; Other Has Slip Fit 3/8 Inch.	4	Monumental Bronze Satin Silvertone	227 226	\$.50 .50
	Straight-in Entrance Tube of Brass, 16 Inches Long. One End Fits CaseStrip; Other Has Slip Fit 1/2 Inch.	8	Monumental Bronze Satin Silvertone	229 228	\$.55 .55
	F Straight-in Entrance Fitting. One End Fits CaseStrip; Other Solders into 5/16-Inch Flexible Conduit.	4	.....	191	.20
	G Front-to-Back Tube of Brass, 22 Inches Long. Both Ends Have Slip Fit 3/8 Inch.	4	Monumental Bronze Satin Silvertone	231 230	\$.55 .55
	Front-to-Back Tube of Brass, 22 Inches Long. Both Ends Have Slip Fit 1/2 Inch.	8	Monumental Bronze Satin Silvertone	233 232	\$.70 .70
	H & J To Make up H and J, Item L with a Slip Ring is Supplied and Is to Be Cut on the Job. H is for Front-to-Back Tube, 3/8-Inch Slip Fit on One End; Other Fastens in Shelf Standard by Ring with Set Screw. J is the Off-Set Tube 3/8-Inch Slip Fit with 1 1/2-Inch Offset and Carries Wires from Bottom of Shelf Standard to Floor Fitting.	4	Satin Silvertone	237	1.30
	K Down-Tube of Brass, 30 Inches Long. No Offset. Both Ends Have Slip Fit 3/8 Inch.	4	Monumental Bronze Satin Silvertone	235 234	\$.70 .70
	Down-Tube of Brass, 30 Inches Long. No Offset. Both Ends Have Slip Fit 1/2 Inch.	8	Monumental Bronze Satin Silvertone	276 236	\$.90 .90
	L Down-Tube of Brass, 32 3/4 Inches Long, with 1 1/2-Inch Offset. Both Ends Have Slip Fit 3/8 Inch.	4	Monumental Bronze Satin Silvertone	295 294	1.25 1.25
	Down-Tube of Brass, 33 Inches Long, with 1 1/2-Inch Offset. Both Ends Have Slip Fit 1/2 Inch.	8	Monumental Bronze Satin Silvertone	297 296	1.40 1.40
	M Floor Fitting with Set Screws. One End Slips 3/8-Inch Brass Tubing; Other End Slips 5/16-Inch Flexible Conduit.	4	Monumental Bronze Satin Silvertone	278 277	\$.35 .35
	Floor Fitting with Set Screws. One End Slips 1/2-Inch Brass Tubing; Other End Slips 3/8-Inch Flexible Conduit.	8	Monumental Bronze Satin Silvertone	280 279	\$.35 .35
	N Clamping Bracket for Holding 3/8-Inch Brass Tubing.	..	Monumental Bronze Satin Silvertone	282 281	.10 .10
	Clamping Bracket for Holding 1/2-Inch Brass Tubing.	..	Monumental Bronze Satin Silvertone	284 283	.10 .10
	O 5/16-Inch Flexible Conduit; 4 Feet Long, with Connector for 1/2-Inch Knockout on One End; Other Slips Floor Fittings Nos. 277 or 278.	4	.....	285	.40

Curtis Auxiliary Housings

Auxiliary housings include CurtiStrip channel with end caps and cover; also No. 181 straps to hold the auxiliaries within the CurtiStrip. Auxiliaries are not included.

No.	Number of Ballasts for Which Auxiliary Housings Are Intended	Inside Lgth., In. Included	Straps Included	No.	Number of Ballasts for Which Auxiliary Housings Are Intended	Inside Lgth., In. Included	Straps Included
156	1-15 Watt High or Low Power Factor.....	14	2	158	3-15 Watt High Power Factor.....	40	6
	1-30 Watt Low Power Factor, 110 or 220 Volts.....				3-30 Watt Low Power Factor.....		
	1-30 Watt High Power Factor, 220 Volts..				2-30 Watt High Power Factor, 110 Volts..		
157	2 or 3-15 Watt High or Low Power Factor	24	4		3-30 Watt High Power Factor, 220 Volts..		
	1-30 Watt High Power Factor, 110 Volts..						
	2-30 Watt Low Power Factor, 110 or 220 Volts.....						
	2-30 Watt High Power Factor, 220 Volts..						
	1-30 and 1-15 Watt High and Low Power Factor.....						
	3-15 Watt Low Power Factor.....						

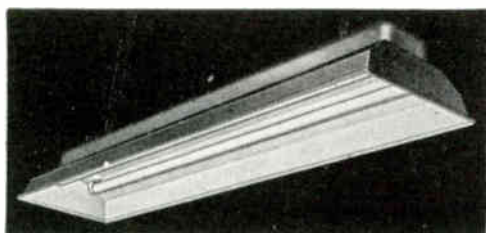
No. 159 Housing for Two-Lamp Ballast

This two-lamp ballast housing is for 2-30 watt lamps. The ballast is not included.

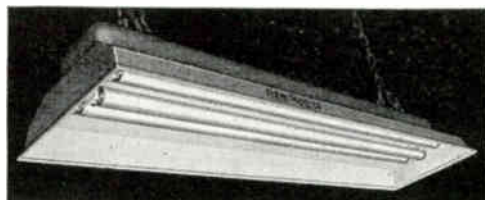
Length, 10 3/4 inches; width, 2 1/2 inches; height, 4 inches.

Benjamin Stream-Liter Fluorescent Lamp Units

Listed by Underwriters' Laboratories



RLM Twin Lamp



Triple Lamp

This Benjamin Stream-Liter Fluorescent Unit provides economic and efficient lighting for general and local illumination of industrial and commercial interiors, where the coolness, color qualities and high lumen per watt output advantages of fluorescent lamps are desired. Used for local lighting of inspection tables, inspection benches, individual machines, production lines, drafting rooms, etc.

Available in two arrangements to take either two or three 48-inch, 40-watt fluorescent lamps. Twin lamp unit is made in accordance with RLM standard specifications and carries the RLM label. Triple lamp unit provides approximately 45 per cent more light than the twin lamp type.

In general lighting installations, these units provide uniform, glareless illumination of daylight quality over horizontal surfaces, while providing adequate illumination for most purposes on vertical surfaces. In general lighting installations from 20 to 70 footcandles are obtainable on the working surfaces, depending upon room conditions, mounting height, spacing distance between units, the number of lamps per unit and whether white or daylight lamps are utilized. The maximum spacing distance between units should never exceed 1½ times the mounting height above its working plane.

The low angle of cut-off and the closed-end reflector construction shield the lamp from view at most normal angles of vision. Cool lighting; no annoyance from heat radiation and a minimum of interference with the objectives of air conditioning.

The porcelain enameled reflecting surface is easy to clean and can be restored to its original efficiency by washing with soap and water.

All parts are easily accessible.

The single reflector, which accommodates two or three lamps, is made of 20 gage porcelain enameling iron, covered completely with a ground coat of fused porcelain enamel. Over this is applied one coat of separately fired porcelain enamel on the outer surfaces and two on the inner reflecting surfaces. The reflection factor is 79 per cent or more.

On twin lamp units when a point from the center of the lamp is connected with a straight line to the lower edge on the opposite side of the reflector, it forms an angle of 72½° from the vertical. On triple lamp units the angle of cut-off is 72½° on the two outer lamps and 70° on the center lamp. Reflector ends are closed to provide shielding of the lamp.

The design of the reflector, high reflection factor of the porcelain enamel, proper positioning of the lamps and other factors combine to give an efficiency of 78 per cent or more of the output of the lamps for twin lamp units and 76.5 per cent for triple lamp units.

Lamp holders are located at each end of the reflector. On twin lamp units they are mounted at an angle of 24° from the vertical with a distance of 5 inches between lamp centers. On triple lamp units the two outer lamps are spaced exactly as described for twin lamp units with the third lamp centered between and slightly below them, with its lamp holders in the vertical position.

Twin lamp units with lamps and control equipment use approximately 100 watts; triple lamp units, 150 watts.

The ballast supplied with twin lamp units is designed so that the two lamps operate out of phase approximately 90°; minimizing flicker. On triple lamp units where this twin lamp ballast is used in combination with a single lamp

ballast of 90 per cent power factor, all lamps are out of phase with each, reducing flicker. A starting compensator is provided with every twin lamp ballast.

Single or double chain supports can be attached to each end of the housing by means of two detachable angle mounting brackets supplied with the unit. The lead-in wires can be brought into the top of the hood through BX cable or flexible conduit, using one of two ½-inch conduit knock-outs provided. Where chain supports are used only welded or lock link chain should be employed to assure a strong support.

Where a rigid suspension is desired, the two conduit knock-outs in the top of the hood, spaced on 36-inch centers, can be utilized for the attachment of two rigid stems.

Units are also provided with a knock-out for ½-inch conduit in each end and switch knock-out in side of housing.

Overall dimensions: length, 52½ inches; depth, 7 inches; and width, 13 inches.

Compensator, ballasts, reflector and housing are connected metal to metal, for grounding through the metal suspension to the conduit system.

Removable starters are installed in special receptacles attached to one of each pair of lamp holders.

Units are supplied wired with 6-inch leads or can be furnished unwired. Wire is included with unwired units. When specified, wired units can be supplied with 6 feet of 3-wire rubber covered cord and a plug cap at \$1.20 advance in list price.

Units can be supplied with pull switches for individual control at the following additions to list price: 110-volt, single pole pull switch, \$1.00; 220-volt double pole pull switch, \$1.85. To order, suffix regular number with PUL.

When specified, units may be supplied with adapter for attachment to either ⅜ or ½-inch fixture studs, or with plate to fit ears of standard ¾ or 4-inch round or octagonal outlet boxes, at 30 cents advance in list.

Units can be supplied without ballasts, starting compensator and lamp starters: twin lamp unit, No. 48602, \$18.35; triple lamp unit, No. 48603, \$23.15.

Light gray porcelain enameled reflector; housing is steel, finished in silver aluminum.

Packed 1 in a standard package.

For Two 48-Inch, T-12 (40-Watt) Fluorescent Lamps

*60 Cycles

Ballast, one twin lamp of 95 per cent power factor.

Shipping weight, 33 pounds.

No. of Volts	Unwired Units		Wired Units	
	No.	Each	No.	Each
110-125	48612	\$25.95	48662	\$26.45
220-250	48632	25.95	48682	26.45

For Three 48-Inch, T-12 (40 Watt) Fluorescent Lamps

*60 Cycles

Ballast, one twin lamp of 95 per cent power factor, and one single lamp of 90 per cent power factor; overall power factor of unit, 92 per cent. Also available with single lamp ballasts, prices upon request.

Shipping weight, 40 pounds.

110-125	48613	\$33.85	48663	\$34.60
220-250	48633	32.40	48683	33.15

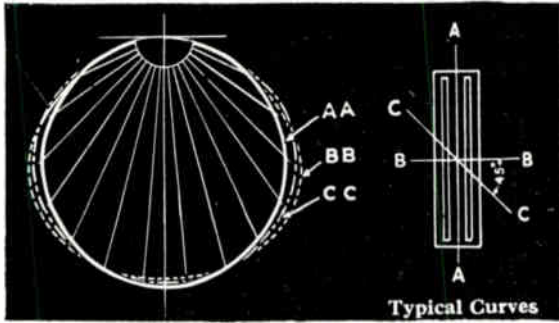
*Supplied with 50-cycle ballasts on special order, prices upon request.

Lamps are not supplied.

Supplied on special order with 199-216-volt ballasts at same list price as 220-250-volt ballasts.

Benjamin Stream-Liter Fluorescent Lamp Units

Lighting Data for Twin and Triple



Tables below show average illumination obtained with twin and triple lamp Stream-Liter units, using 48-inch, 40-watt, white Mazda fluorescent lamps; for daylight lamps, 1800 lumens, multiply values by .85. Values based on minimum installation of 4 units and maintenance factor of .75. Mounting heights are distance above floor; footcandle values are on working plane, 30 inches above floor.

Table of Average Footcandles on Horizontal
RLM Stream-Liter with 2 White Fluorescent Lamps of
2120 Lumens Each

Approx. Spacing Ft.	Height Above Floor Ft.	Area per Unit Sq. Ft.	Room Conditions	ROOM PROPORTIONS, AVERAGE FOOTCANDLES		
				Favorable	Average	Unfavorable
7 x 7	7½ to 9½	49	Very Light.	44-48	35-40	24-33
			Fairly Light	41-45	33-37	20-29
			Fairly Dark	40-44	30-35	18-27
8 x 8	8 to 10½	64	Very Light.	34-37	27-31	18-25
			Fairly Light	32-34	25-29	15-22
			Fairly Dark	30-33	23-27	14-20
9 x 9	8½ to 11½	81	Very Light.	27-29	22-25	15-20
			Fairly Light	25-28	20-23	13-18
			Fairly Dark	24-27	18-22	11-16
10 x 10	9½ to 12½	100	Very Light.	22-24	18-20	12-16
			Fairly Light	21-23	17-19	10-14
			Fairly Dark	20-22	15-18	9-12
11 x 11	10 to 13½	121	Very Light.	18-19.5	14-16	10-13
			Fairly Light	17-18.5	13-15	9-12
			Fairly Dark	16-18	12-14	8-11
12 x 12	10½ to 14½	144	Very Light.	15-16.5	12-14	9-11
			Fairly Light	14-15	12-13	7.5-9
			Fairly Dark	13.5-14.5	11-12	6-7
Stream-Liter with 3 White Fluorescent Lamps of 2120 Lumens Each						
7 x 7	7½ to 9½	49	Very Light.	64-70	51-58	35-48
			Fairly Light	59-65	48-54	29-42
			Fairly Dark	58-64	43-51	26-39
8 x 8	8 to 10½	64	Very Light.	49-54	39-45	26-36
			Fairly Light	46-49	36-42	22-32
			Fairly Dark	43-48	33-39	20-29
9 x 9	8½ to 11½	81	Very Light.	39-42	32-36	22-29
			Fairly Light	36-40	29-33	18-26
			Fairly Dark	35-39	26-32	16-23
10 x 10	9½ to 12½	100	Very Light.	32-35	26-29	18-23
			Fairly Light	30-33	25-27	14.5-20
			Fairly Dark	29-32	22-26	13-17
11 x 11	10 to 13½	121	Very Light.	26-28	20-23	14.5-19
			Fairly Light	25-27	19-22	13-17
			Fairly Dark	23-26	17.5-20	11.5-16
12 x 12	10½ to 14½	144	Very Light.	22-24	18-20	13-16
			Fairly Light	20-22	17-19	11-13
			Fairly Dark	19.5-21	16-17	9-10
13½ x 13½	11½ to 16	182	Very Light.	17-19	13.5-16.6	10-13
			Fairly Light	15-16.5	12-14	7.5-11
			Fairly Dark	13.5-15	11-12	6-10
15 x 15	12½ to 17½	225	Very Light.	14-15.5	11-13.5	8-10.5
			Fairly Light	12-13.5	10-11	6-9
			Fairly Dark	11-12	9-10	5-8

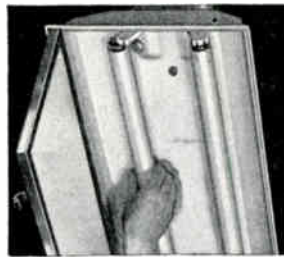
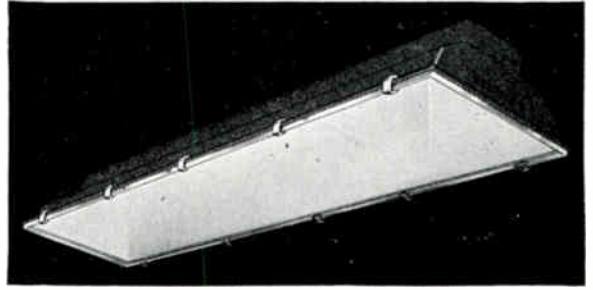
*Minimum heights shown are for spacing ratio of 1½ to 1. The greater heights are for 1 to 1 spacing.

†Use Favorable, for broad rooms where width is 4 times mounting height above floor. Use Average, where room width is 2 times mounting height above floor. Use Unfavorable, where width is equal to mounting height above floor.

‡Impractical; recommended that interior room conditions be improved or provision made for more frequent maintenance.

Benjamin Glass Covers

For Stream-Liter Fluorescent Lamp Units



Cover Opened for Servicing Unit

These hinged type glass covers can be attached to any regular Benjamin Stream-Liter Fluorescent Unit. They protect lamps and reflecting surfaces from dust and dirt so that efficiency is maintained and cleaning costs reduced. Either clear or opal glass is available.

When equipped with an opal glass cover, the unit becomes a diffusing light source of low brightness for lighting drafting tables and locations where unusual diffusion is desired or where inspection and manufacturing operations must be performed on polished, plated or shiny surfaces. The opal glass cover aids in reducing this brightness.

The average brightness of the opal cover glass with various lamp arrangements is as follows: with two white lamps, 875 foot-lamberts; with two daylight lamps, 740 foot-lamberts; with three white lamps, 1300 foot-lamberts; with three daylight lamps, 1100 foot-lamberts.

Naturally there is some light absorption by the opal glass cover.

Cover consists of a steel frame; one side of which has a series of spring bronze hinges, and a clamping arrangement, while the other has a series of spring bronze clamps. The frame supports the cover glass which is attached to it by bronze wire clips. The grooved felt gasket is cemented to the glass and to the cover frame.

To attach, release a screw near each end of the hinged section of the frame which frees one end of each of two locking levers allowing them to be swung down into the open position.

The hinged side of the cover frame is then hooked over the flange of the reflector and the cover is swung into closed position where it is held by closing cover clamps on the opposite side. The two locking levers, attached to the hinged section of the frame, are then swung into position between the cover frame and the reflector flange and the locking screw in each lever is tightened to securely clamp the hinged section of the cover assembly to the reflector flange.

Frame is finished in baked aluminum enamel, applied over electro-plating; clamps and hinges are nickel plated.

Packed 1 in a standard package.

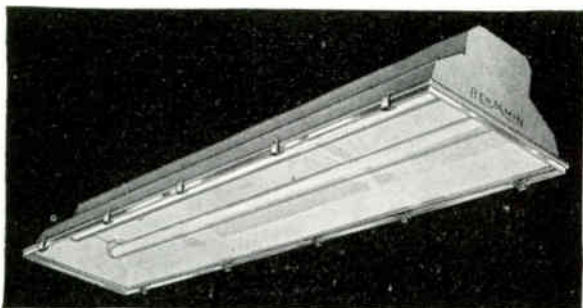
No.	Each	Description	Length Inches	Width Inches
48695	\$13.25	Complete Clear Glass Assembly	52½	*13¾
48691	16.75	Complete Opal Glass Assembly	52½	*13¾
48680	5.75	Clear Glass Only, with Gasket.	51⅜	12¾
48681	9.25	Opal Glass Only, with Gasket..	51⅜	12¾

*Includes cover clamps and hinges; width between outside edges of band, 13 inches.

Stream-Liter Units are not included.

Benjamin Sealed-Flo Fluorescent Lamp Units

Listed as Vapor Proof by Underwriters' Laboratories



A durable, one-piece, dust-tight and vaporproof unit, available in arrangements for either two or three 48-inch, fluorescent lamps. Can be used for both general and local illumination of industrial and commercial interiors; where steam, dampness, non-combustible dust and vapors are present.

When equipped with an opal glass cover, this unit becomes a diffusing light source of low brightness for lighting drafting tables, etc.

When supplied with heat and impact-resisting tempered plate glass covers, units are suitable for locations where equipment is exposed to flying fragments or rough handling.

The bottom of the one-piece housing is sealed by a gasket equipped glass, mounted in a metal frame. One side of this frame is hinged to the housing while the opposite side has a series of hand operated cover clamps, which hold the assembly in positive engagement with the inner flange of the housing. Suspension flanges are gasketed to the housing.

Easy to service and install. When opened the cover hangs straight down, supported by the hinges.

Overall dimensions: length, 52½ inches; depth, 7¾ inches; and width, 13 inches.

For mounting, unit is provided with two cast iron suspension flanges, spaced on 36-inch centers, tapped ½ inch standard; ¾ inch if specified. One of these flanges is for a dummy conduit stem and the other provides for wire entrance; flange for wire entrance has a conduit stop arrangement. Provision is made for grounding units.

Outside finish is light gray porcelain enamel; suspension flanges and cover frame are baked aluminum enamel; hinges and clamps are nickel plated.

Packed 1 in a standard package.

For Two 48-Inch, T-12 (40-Watt) Fluorescent Lamps

*60 Cycles

Ballast, one twin lamp of 95 per cent power factor. Shipping weight, 60 pounds.

No. of Volts	With Double Strength Grade A Clear Glass Cover		Wired Units	
	No.	Each	No.	Each
110-125	49612-CL	\$40.25	49662-CL	\$41.00
220-250	49632-CL	40.25	49682-CL	41.00
With Flashed Opal Glass Cover				
110-125	49612-OP	\$43.75	49662-OP	\$44.50
220-250	49632-OP	43.75	49682-OP	44.50

For Three 48-Inch, T-12 (40-Watt) Fluorescent Lamps

*60 Cycles

Ballast, one twin lamp of 95 per cent power factor, and one single lamp of 90 per cent power factor; overall power factor of unit, 92 per cent. Also available with three single lamp ballasts, prices upon request.

Shipping weight, 65 pounds.

No. of Volts	With Double Strength Grade A Clear Glass Cover		Each
	No.	Each	
110-125	49613-CL	\$51.50	\$52.65
220-250	49633-CL	50.10	51.25
With Flashed Opal Glass Cover			
110-125	49613-OP	\$55.00	\$56.15
220-250	49633-OP	53.60	54.75

*Supplied with 50-cycle ballasts on special order, prices upon request.

†Heat and impact-resisting, tempered-plate, clear glass covers supplied, when specified; prices upon request. To order, substitute suffix TP for CL after number.

Lamps are not supplied.

Supplied on special order with 199-216-volt ballasts at same list price as 220-250-volt ballasts.

Benjamin Twin-Flo and Triple-Flo Fluorescent Lamp Units

Listed by Underwriters' Laboratories



Twin-Flo

Designed to utilize the high lumen per watt output of 48-inch fluorescent lamps. Can be used for general illumination of industrial and commercial locations where uniform, cool, daylight fluorescent lighting must be provided.

The twin lamp and triple lamp units are identical in every respect, including size, except for the necessary changes in ballast and lamp holder equipment in the triple lamp unit to accommodate a third lamp. In light output, the triple lamp unit provides approximately 45 per cent more light than the twin lamp style. Like other units having this type of distribution, the maximum spacing distance between units should not exceed 1½ times the mounting height.

Ballasts are in accordance with Mazda Lamp Manufacturers' specifications for Fluorescent Lamp Auxiliaries.

A starting compensator is provided with twin lamp ballasts. Starters are installed in receptacles attached to one of each pair of lamp holders.

Single or double welded or lock chain supports can be attached to each end of the housing, using two detachable angle mounting brackets provided. The lead-in wires can be brought into the top of the hood through BX cable or flexible conduit, using one of two ½-inch conduit size knock-outs.

For stem suspension, the two conduit knock-outs in the top of the hood, spaced on 36-inch centers, can be used.

Units have a knock-out for ½-inch conduit in each end and a switch knock-out in the side.

When specified, units can be supplied with adapter for attachment to either ¾ or ½-inch fixture studs, or with plate to fit ears of standard 3¼ or 4-inch round or octagonal outlet boxes, at 30 cents advance in list.

Overall dimensions: length, 52½ inches; depth, 7 inches; and width, 13 inches.

Units are supplied wired or unwired, as desired. When specified, wired units can be furnished with 6 feet of 3-wire rubber covered cord and a plug cap, in place of standard 6-inch leads, at \$1.20 advance in list. To specify, suffix number of regular wired unit with P.

Porcelain enameled steel reflector has light gray finish; silvered aluminum steel housing.

Packed 1 in a standard package.

Twin-Flo—for Two 48-Inch, T-12 (40-Watt) Fluorescent Lamps

*60 Cycles

Ballast, one twin lamp of 95 per cent power factor.

No. of Volts	Unwired Units		Wired Units		Shp. Wt., Lb.
	No.	Each	No.	Each	
110-125	48112	\$20.65	48162	\$21.15	32
220-250	48132	20.65	48182	21.15	32

Triple-Flo—for Three 48-Inch, T-12 (40-Watt) Fluorescent Lamps

60 Cycles

Ballast, one twin lamp of 95 per cent power factor, and one single lamp of 90 per cent power factor; overall power factor of unit, 92 per cent.

No. of Volts	No.	Each	No.	Each	Shp. Wt., Lb.
110-125	48113	\$30.55	48163	\$31.30	37
220-250	48133	29.10	48183	29.85	37

Ballast, one twin lamp of 95 per cent power factor, and one single lamp of 60 per cent power factor; overall power factor of unit, 84½ per cent.

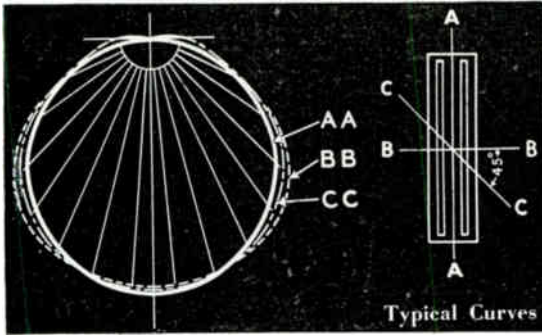
No. of Volts	No.	Each	No.	Each	Shp. Wt., Lb.
110-125	48114	\$28.15	48164	\$28.90	37
220-250	48134	26.80	48184	27.55	37

*Supplied with 50-cycle ballasts on special order.

Lamps are not supplied.

Supplied on special order with 199-216-volt ballasts at 220-250-volt ballast prices.

Benjamin Twin-Flo and Triple-Flo Fluorescent Lamp Units Lighting Data



Tables below show average illumination obtained with Twin-Flo and Triple-Flo units, using 48-inch, 40-watt, white Mazda fluorescent lamps; for daylight lamps, 1800 lumens, multiply values by .85. Values based on minimum installation of 4 units and maintenance factor of .75.

Mounting heights are distance above floor; footcandle values are on working plane, 30 inches above floor.

Table of Average Footcandles on Horizontal
Twin-Flo with 2 White Fluorescent Lamps of 2120 Lumens Each

Approx. Spacing Ft.	Height Above Floor Ft.	Area per Unit Sq. Ft.	Room Conditions	ROOM PROPORTIONS, AVERAGE FOOTCANDLES		
				Favorable	Average	Unfavorable
7 x 7	7½ to 9½	49	Very Light.	42-46	34-39	23-32
			Fairly Light	39-43	32-36	19-28
			Fairly Dark	38-42	29-34	†17-26
8 x 8	8 to 10½	64	Very Light.	33-36	26-30	17-24
			Fairly Light	31-33	24-28	14-21
			Fairly Dark	29-32	22-26	†13.5-19
9 x 9	8½ to 11½	81	Very Light.	26-28	21-24	14.4-19
			Fairly Light	24-27	19-22	12.5-17
			Fairly Dark	23-26	17.3-21	†10.6-15
10 x 10	9½ to 12½	100	Very Light.	21-23	17.3-19	11.5-15.4
			Fairly Light	20-22	16.4-18	9.6-13.5
			Fairly Dark	19-21	14.4-17	†8.7-11.5
11 x 11	10 to 13½	121	Very Light.	17.3-18.8	13.5-15.4	9.6-12.5
			Fairly Light	16.4-17.8	12.5-14.4	8.7-11.5
			Fairly Dark	15.4-17.3	11.5-13.5	†7.7-10.6
12 x 12	10½ to 14½	144	Very Light.	14.4-15.9	11.5-13.5	8.7-10.6
			Fairly Light	13.5-14.4	11.5-12.5	7.2- 8.7
			Fairly Dark	13-14	10.6-11.5	†5.8- 6.7

Approx. Spacing Ft.	Height Above Floor Ft.	Area per Unit Sq. Ft.	Room Conditions	ROOM PROPORTIONS, AVERAGE FOOTCANDLES		
				Favorable	Average	Unfavorable
7 x 7	7½ to 9½	49	Very Light.	62-67	49-56	34-46
			Fairly Light	57-63	46-52	28-40
			Fairly Dark	56-62	41-49	†25-38
8 x 8	8 to 10½	64	Very Light.	47-52	38-43	25-35
			Fairly Light	44-47	35-40	21-31
			Fairly Dark	41-46	32-38	†19-28
9 x 9	8½ to 11½	81	Very Light.	38-40	31-35	21-28
			Fairly Light	35-39	28-32	17.3-24
			Fairly Dark	34-38	25-31	†15.4-22
10 x 10	9½ to 12½	100	Very Light.	31-34	25-28	17.3-22
			Fairly Light	29-32	24-26	14-19
			Fairly Dark	28-31	21-25	†12.5-16.4
11 x 11	10 to 13½	121	Very Light.	25-27	19-22	14-18
			Fairly Light	24-26	18-21	12.5-16.4
			Fairly Dark	22-25	16.8-19	†11.1-15.4
12 x 12	10½ to 14½	144	Very Light.	21-23	17-19	12.5-15.4
			Fairly Light	19.2-21	16.4-18	10.6-12.5
			Fairly Dark	18.8-20	15.4-16.4	†8.7- 9.6
13½x13½	11½ to 16	182	Very Light.	16.4-18.3	13-16	9.6-12.5
			Fairly Light	14.4-15.9	11.5-13.5	7.2-10.6
			Fairly Dark	13-14.4	10.6-11.5	†5.8- 9.6
15 x 15	12½ to 17½	225	Very Light.	13.5-14.9	10.6-13	7.7-10.1
			Fairly Light	11.5-13	9.6-10.6	5.8- 8.7
			Fairly Dark	10.6-11.5	8.7- 9.6	†4.8- 7.7

*Minimum heights shown are for spacing ratio of 1½ to 1. The greater heights are for 1 to 1 spacing.

†Use Favorable, for broad rooms where width is 4 times mounting height above floor. Use Average, where room width is 2 times mounting height above floor. Use Unfavorable, where width is equal to mounting height above floor.

‡Impractical; recommended that interior room conditions be improved or provision made for more frequent maintenance.

Benjamin Flur-O-Liter Fluorescent Lamp Units

Listed by Underwriters' Laboratories



Utilizes the high lumen per watt output of fluorescent lamps in producing high intensity, cool, glareless, daylight quality illumination for industrial and commercial locations. Provided with two individual, efficient semi-concentrating reflectors of polished Alzak aluminum mounted and supported in a single housing.

The distribution of the Flur-O-Liter unit lends itself to high intensity localized lighting of assembly benches, inspection tables, production lines, drafting tables and similar local areas. Also makes these units suitable for general illumination where it is desired to confine the lighting to restricted areas, with a minimum of light loss on the side walls.

A welded steel housing, encloses reflector assembly and provides space for control equipment; gray finish.

Ballast is made in accordance with Mazda Lamp Manufacturers' specifications for Fluorescent Lamp auxiliaries.

The overall power factor of lamps and auxiliary equipment is 95 per cent.

Units are provided with a compensator, mounted in the housing adjacent to the ballast unit.

The 48-inch lamp units are supplied with two detachable angle brackets so single or double chain supports can be attached at each end of the housing. The lead-in wires can then be brought into the top of the housing through BX cable or flexible conduit, using one of the two ½-inch conduit knock-outs provided. For a rigid suspension, the two conduit knockouts in the top of the housing, spaced on 36-inch centers, can be used.

The 36-inch lamp units have a single flange in the center of the unit, tapped ½-inch conduit size standard, ¾-inch if specified.

For ceiling mounting, units can be supplied with adapter angle brackets to either ⅜ or ½-inch fixture studs, or with plate to fit ears of standard ¾ or 4-inch round or octagonal outlet boxes, at 30 cents advance in list.

Supplied wired with 6-inch leads, or can be furnished unwired. Wire is included with unwired units. Wired units can be supplied with 6 feet of 3-wire rubber covered cord and a plug cap at \$1.20 advance in list.

Packed 1 in a standard package.

For Two 48-Inch, T-12 (40-Watt) Fluorescent Lamps

No. of Volts	60 Cycles		Lgth. In.	Depth In.	Width In.	Ship. Wt. Lb.		
	Unwired Units						Wired Units	
	No.	Each					No.	Each
110-125	48812	\$39.80	48862	\$40.55	49½	6¼	12¼	36
*220-250	48832	39.80	48882	40.55	49½	6¼	12¼	36

For Two 36-Inch, T-8 (30-Watt) Fluorescent Lamps

No. of Volts	60 Cycles		Lgth. In.	Depth In.	Width In.	Ship. Wt. Lb.		
	Unwired Units						Wired Units	
	No.	Each					No.	Each
110-125	36712	\$31.30	36762	\$32.05	37⅝	6¼	11⅝	32
*220-250	36732	31.30	36782	32.05	37⅝	6¼	11⅝	32

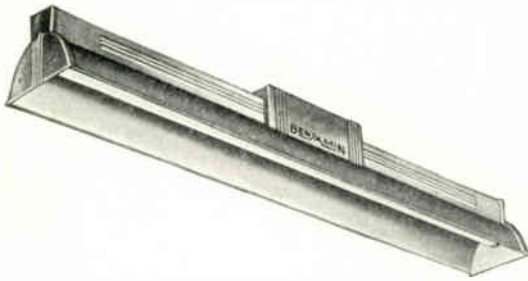
*Supplied with 50-cycle ballasts on special order, prices upon request.

Lamps are not supplied.

Supplied on special order with 199-216-volt ballasts at 220-250-volt ballast prices.

Benjamin Flur-O-Line Fluorescent Lamp Units

Listed by Underwriters' Laboratories

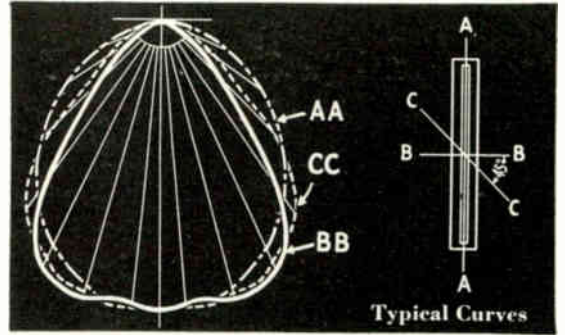


48-Inch (40-Watt) Lamp Unit with Twin-Lamp Ballast

Chain Hook



Unit Line, Consisting of Three 36-Inch (30-Watt) Basic Lamp Sections, Plus the Necessary Flur-O-Line Fittings for End-to-End Attachment



Typical Curves

Scientifically designed to secure best lighting results from highly efficient Mazda fluorescent lamps. Each section is a self-contained unit which can be used individually or connected end to end to form a line of any desired length.

The specially designed trough shaped, semi-concentrating, Alzak aluminum reflector has a high reflection factor and utilizes the high lumen per watt output of fluorescent lamps in providing maximum illumination on the surfaces to be lighted.

In the case of 24 and 36-inch lamp size units, all single and multiple units of the same lamp size are built from a common basic section, which is a complete single section without suspension flange. For individual installation the suspension flange is added; for unit lines the proper number of basic lamp sections, without flanges, are used in combination with the required Flur-O-Line fittings.

In the case of sections for 48-inch lamps, the sections listed can be installed individually or used in unit lines, but Flur-O-Line fittings must be added to complete unit lines.

Sections are provided with a sheet metal wiring channel. At each end of the channel is a removable cap with a 1/2-inch size knock-out. No. 5146 special end cap, with 1/2-inch threaded bushing, 45 cents extra. Channel also has a 1/2-inch conduit size switch knock-out.

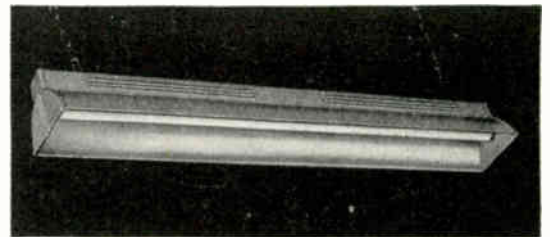
Sections are not wired, but are furnished with two lengths of heat-resisting wire for use in making connections between lamp holders and controls.

Ample space is provided inside the channels to accommodate ballasts for use with a replaceable starter, which is installed in a receptacle attached to one of the lamp holders.

The exterior of the reflector section is baked glossy aluminum, applied over Alzak; the wiring channel is finished in baked aluminum enamel. Suspension fitting is baked aluminum over electro-plating.

Packed 1 in a standard package.

For 48-Inch, T-12 (40-Watt) Fluorescent Lamps



With Single Lamp Ballast

Sections listed are for individual installation or can be joined end-to-end in line. Sections with twin lamp ballasts have a larger wiring channel and are used where it is desired to operate two adjacent lamp sections from a common ballast. In such cases, one No. N48001 section should be provided for every twin lamp ballast section. Starters for No. N48001, must be specified separately.

A chain hook is attached to each end of the channel and two 1/2-inch conduit size knock-outs, spaced on 36-inch centers, are provided in the top.

Power consumption of a lamp section, with a single lamp ballast and lamp, is approximately 53 watts.

Overall dimensions: length 48 1/2 inches; depth, 6 3/4 inches; and width, 7 inches.

With Channel for Single Lamp Ballast

No.	Each	Power Factor	No. of Volts
*N48301	\$20.65	60%	110-125
48341	23.05	90%	110-125
*N48501	19.30	60%	220-250
48541	21.65	90%	220-250
5149	.65	‡	.....

With Channel for Twin Lamp Ballast

*48331	\$25.60	95%	110-125
*48531	25.60	95%	220-250
48031	17.60	.....	.....

*Supplied with 50-cycle ballasts on special order, prices upon request.

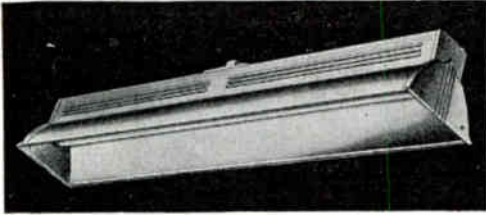
‡Starter only.

Lamps are not supplied. Supplied on special order with 199-216-volt ballasts at 220-250-volt ballast prices.

Benjamin Flur-O-Line Fluorescent Lamp Units

Listed by Underwriters' Laboratories
60 Cycles

For 36-Inch, T-8 (30-Watt) Fluorescent Lamps



Sections listed with suspension fitting are for individual installation. Fitting supplied is No. 5140; tapped 1/2-inch standard, 3/4-inch if specified. Sections without fitting can be used end-to-end in line. Sections are not wired but wire is supplied.

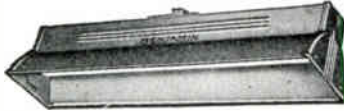
Overall dimensions: length, 36 1/2 inches; depth, 6 inches; and width, 5 3/4 inches.

Power consumption, including lamp and control equipment is approximately 40 watts.

Packed 1 in a standard package.

No. of Volts	With Fitting		Without Fitting		Power Factor
	No.	Each	No.	Each	
*110-125	N36301	\$15.65	N36300	\$15.30	55%
110-125	36341	18.00	36340	17.65	90%
*220-250	N36501	14.15	N36500	13.80	60%
220-250	36541	16.55	36540	16.20	90%
.....	†N36001	11.95	†N36000	11.60	.....
.....	5149	.65	5149	.65	.....

For 24-Inch, T-12 (20-Watt) Fluorescent Lamps



Sections listed with suspension fitting are for individual installation. Fitting supplied is No. 5140; tapped 1/2-inch standard, 3/4-inch if specified. Units without fitting are basic sections for multiple lamp combinations. Sections are not wired, but wire is supplied.

Complete side-by-side combinations, consisting of two single lamp basic sections and one No. 5132 bridge channel, are also shown.

Overall dimensions: length, 24 1/2 inches; depth, 6 inches; and width, 5 3/4 inches.

Power consumption of a single section including lamp and control equipment is approximately 25 watts.

Packed 1 in a standard package.

No. of Volts	Single Lamp Sections With Fitting		Without Fitting		Power Factor
	No.	Each	No.	Each	
*110-125	N24201	\$10.90	N24200	\$10.55	55%
110-125	24241	13.40	24240	13.05	90%
.....	†N24001	9.35	†N24000	9.00	.....

Two Lamp Sections (Arranged Side-By-Side) with Bridge

*110-125	24242	\$25.10	.....	.....	95%
*110-125	N24202	21.80	.....	.....	55%
.....	N24002	18.70	.....	.....	.....

*Supplied with 50-cycle ballasts on special order, prices upon request.

†No ballast or starter switch.

Lamps are not supplied.

Supplied on special order with 199-216-volt ballasts at 220-250-volt ballast prices.

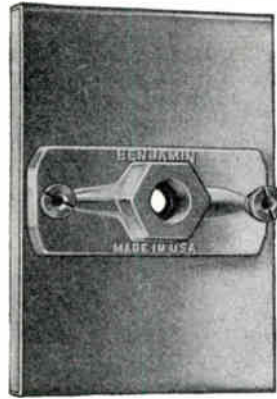
End-to-End Arrangements of Lamp Sections

No. of Sections	48-Inch		No. 5130 Coupling	No. 5145 Hook
	No. 5140 Flange	No. 5141 Cover		
2	..	..	1	..
3	..	..	2	..
2	1	†36-Inch	1	..
3	1	2	2	2
2	1	†24-Inch	1	..
3	1	2	2	2

†Use 3 sections without suspension fitting.

Benjamin Fittings

For Flur-O-Line Fluorescent Lamp Units
Combination Bridge and Wiring Channels



Provides a means of attaching two or three 24 or 36-inch lamp sections side-by-side. Includes suspension flange, No. 5140, tapped 1/2 inch and two auxiliary strap braces.

Bridge and braces are of steel; finished in aluminum, applied over electro-plating.

Packed 1 in a standard package.

No.	Each	Description	Ship. Wt., Lb.
5132	\$.70	2-Section Bridge Channel	4
5133	1.35	3-Section Bridge Channel	5 1/2

No. 5140 Suspension Fitting Flanges



Supplied as standard on all complete 24 and 36-inch lamp sections; also with Nos. 5132 and 5133 bridge channels.

Tapped 1/2-inch standard; 3/4-inch if specified.

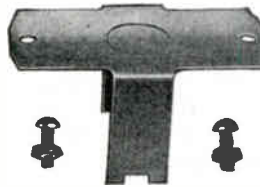
Made of cast iron; finished in aluminum, applied over electro-plating.

Packed 10 in a standard package.

Shipping weight per standard package, 10 pounds.

No. 5140..... each \$3.35

No. 5130 End-to-End Coupling Plates



Provides a means of attaching 24, 36 and 48-inch lamp sections directly end-to-end. Pressed steel construction with 1/2-inch size knock-out and two attaching bolts.

Finished in aluminum, applied over electro-plating.

Packed 10 in a standard package.

Shipping weight per standard package, 6 pounds.

No. 5130..... each \$1.15

No. 5141 Cover Plates



For covering unused wire openings in channels, when sections are joined in line.

Pressed steel construction; finished in aluminum, applied over electro-plating.

Packed 10 in a standard package.

Shipping weight per standard package, 3 pounds.

No. 5141..... each \$1.10

No. 5145 Chain Hooks



For attaching chain to ceiling or wiring channel of section.

Made of steel; finished in sprayed aluminum.

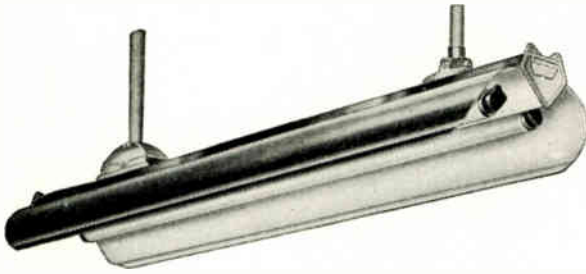
Packed 10 in a standard package.

Shipping weight per standard package, 1 pound.

No. 5145..... each \$1.10

Wheeler Day-Flo Fluorescent Lighting Units

Listed by Underwriters' Laboratories



Developed for general illumination purposes in industrial locations. Unusually efficient and can be used to advantage in lighting production areas when general illumination of daylight quality is necessary or desirable.

Unit incorporates the use of two, 40-watt, 48-inch Fluorescent daylight lamps in a porcelain-enameled steel reflector.

Furnished complete with sockets, high power factor tulamp ballast equipment and a compensator which facilitates starting and ensures satisfactory lamp performance. Fixture is supplied wired, with pigtailed left for connecting to branch circuit.

Reflectors are porcelain-enameled, green outside, white inside. Canopy and hanger are finished in aluminum.

The Day-Flo can be supplied for the two following methods of suspension. For chain suspension: All units are supplied with loops in the cast ends for chain suspension. Chain is not furnished. A removable metal cover plate, having a K. O. for 1/2-inch iron pipe fittings in its center, fits over an opening in the wiring channel of the unit, thus giving a readily accessible splicing chamber to which any form of acceptable connection can be made. When fixtures are ordered with a factory-installed cord and plug, the removable metal cover plate is supplied complete with a composition cord bushing.

For two stem suspension: Unit is supplied with a new hinged suspension canopy and with a hinged hanger, both of which are located 11 inches from the ends of the fixture. The distance from center to center of these suspension fittings is 30 inches. Canopy swings open upon release of a single screw, exposing pigtailed for quick and easy splicing. Complete unit can be separated from upper portion of the canopy by removing two pivot screws. Hinged hanger also swings open and can be separated by the removal of a single screw. Canopy and hanger are tapped for 1/2-inch pipe but pipe is not supplied.

Unit wired complete with ballast and starter switches.

Prices do not include lamps.

Packed 1 in a standard package.

For Chain Suspension

No.	Each	Line Voltage	Approx. Total Watts Consumed	FIXTURE DIMENSIONS, INCHES			Approx. Ship. Wt. Lb.
				Length	Width	Depth	
4945	\$22.50	110-125	97 1/2	52	13 3/4	6 3/4	34
4947	22.50	199-216	93 1/2	52	13 3/4	6 3/4	34
4949	22.50	220-250	94 1/2	52	13 3/4	6 3/4	34

For Two Stem Suspension

4925	\$23.50	110-125	97 1/2	52	13 3/4	8 3/8	36
4927	23.50	199-216	93 1/2	52	13 3/4	8 3/8	36
4929	23.50	220-250	94 1/2	52	13 3/4	8 3/8	36

Extra for switches (identify by letter when ordering): A, canopy pull switch, single-pole, 3 amperes, \$1.00; C, levolver pull switch, single pole, 6 amperes, \$1.85; D, levolver pull switch, double pole, 6 amperes, recommended for fixtures to be used on 220-volt circuits, \$2.50.

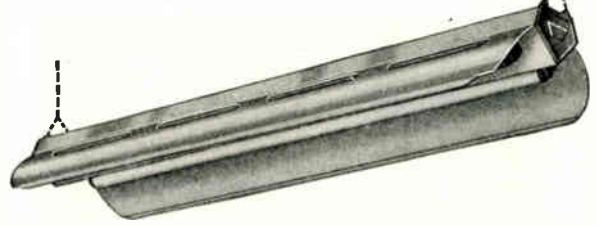
Chain suspension units can be furnished with 3-conductor cord 6 feet long with two-prong plug having ground wire extending through the side, \$1.20.

For unit less two starter switches, deduct 65 cents each or \$1.30 for both.

Units can be supplied unwired at a reduction of 75 cents

Wheeler Day-Flo Diffuser Fluorescent Lighting Units

Listed by Underwriters' Laboratories



Used where efficient daylight illumination is required. Provides color-corrected light, is extremely efficient, cooler in operation, ideal for color matching, easily installed and easily serviced. Designed especially for general illumination of industrial areas.

Apertures in the top permit some light to escape and reflect against the room ceiling, lessening the usual sharp contrast between ceiling and working plane.

Incorporates the use of two, 40-watt, 48-inch fluorescent lamps in a porcelain-enameled steel reflector.

Furnished complete with sockets, high power factor tulamp ballast equipment, starter switches and a compensator which facilitates starting and insures satisfactory lamp performance. Fixture is supplied wired, with pigtailed left for connecting to branch circuit.

Reflectors are porcelain-enameled white, inside and outside. Canopy and hanger are finished in aluminum.

Can be supplied for the two following methods of suspension.

For chain suspension: All units are supplied with loops in the cast ends for chain suspension. Chain is not furnished. A removable metal cover plate, having a K.O. for 1/2-inch iron pipe fittings in its center, fits over an opening in the wiring channel of the unit, thus giving a readily accessible splicing chamber to which any form of acceptable connection can be made. When fixtures are ordered with a factory-installed cord and plug, the removable metal cover plate is supplied complete with a composition cord bushing.

For two stem suspension: Unit is supplied with a new hinged suspension canopy and with a hinged hanger, both of which are located 11 inches from the ends of the fixture. The distance from center to center of these suspension fittings is 30 inches. Canopy swings open upon release of a single screw, exposing pigtailed for quick and easy splicing. Complete unit can be separated from upper portion of the canopy by removing two pivot screws. Hinged hanger also swings open and can be separated by the removal of a single screw. Canopy and hanger are tapped for 1/2-inch pipe but pipe is not supplied.

Prices do not include lamps.

Packed 1 in a standard package.

For Chain Suspension

No.	Each	Line Voltage	Approx. Total Watts Consumed	FIXTURE DIMENSIONS, INCHES			Approx. Ship. Wt. Lb.
				Length	Width	Depth	
4952	\$24.00	110-125	97 1/2	52	13 3/4	6 3/4	34
4953	24.00	199-216	93 1/2	52	13 3/4	6 3/4	34
4954	24.00	220-250	94 1/2	52	13 3/4	6 3/4	34

For Two Stem Suspension

4955	\$25.00	110-125	97 1/2	52	13 3/4	8 3/8	36
4956	25.00	199-216	93 1/2	52	13 3/4	8 3/8	36
4957	25.00	220-250	94 1/2	52	13 3/4	8 3/8	36

Extra for switches (identify by letter when ordering): A, canopy pull switch, single-pole, 3 amperes, \$1.00; C, levolver pull switch, single pole, 6 amperes, \$1.85; D, levolver pull switch, double pole, 6 amperes, recommended for fixtures to be used on 220-volt circuits, \$2.50.

Chain suspension units can be furnished with 3-conductor cord 6 feet long with two-prong plug having ground wire extending through the side, \$1.20.

For unit less two starter switches, deduct 65 cents each or \$1.30 for both.

Units can be supplied unwired at a reduction of 75 cents.

Wheeler RLM Fluorescent Lighting Units

Listed by Underwriters' Laboratories



Conforms with specifications of the RLM Standards Institute for a type of fluorescent unit which will provide uniform general illumination and color correction in industrial and commercial areas.

Furnished complete with lamp sockets and starter switch sockets mounted in the ends of the unit in such a manner to provide the desired lamp shielding angle of $17\frac{1}{2}^\circ$ below the horizontal.

High power factor tulamp ballast equipment, with removable and renewable separate starter switches located in the sockets, and a compensator which facilitates starting and insures satisfactory lamp performance, complete the unit. Fixture is wired, with pigtailed left for connecting to branch circuit. Can be furnished unwired.

Supplied with a hinged arrangement which will permit the reflector to be detached from the reflector hood.

When ordered unwired, the hood can be installed while wiring of the reflector body is completed at a bench or on the floor. Wired reflector assembly can then be quickly and firmly attached to hood through means of the new hinged arrangement. When wired, hood can be installed and reflector hung from the hinged hooks on the hood until wiring connections are made. After wiring is completed, reflector can be swung into contact with the hood and attached by means of the hinges.

Two $\frac{1}{2}$ -inch knockouts which can be used for pipe suspension are incorporated in the hood. If desired, unit can be supplied complete with two flat backed flanges for $\frac{1}{2}$ -inch pipe.

Gives 78% light output and lamp is so positioned as to provide for a $72\frac{1}{2}^\circ$ angle of cut-off.

Intended primarily for low bay mounting, it will provide maximum efficiency at mounting heights up to 12 feet above the floor. Spacing between units should not exceed mounting height of unit above floor.

Reflectors are porcelain enameled, gray outside, white inside. Cast ends, canopy and hanger finished in aluminum. Prices do not include lamps.

Packed 1 in a standard package.

For Chain Suspension

Line Voltage	Approx. Total Watts Consumed	FIXTURE DIMENSIONS, INCHES			Unwired		Wired		Approx. Ship. Wt. Lb.
		Length	Width	Depth	No.	Each	No.	Each	
110-125	97 $\frac{1}{2}$	52 $\frac{1}{4}$	13	7	4966	\$27.00	4960	\$27.75	43
199-216	93 $\frac{1}{2}$	52 $\frac{1}{4}$	13	7	4967	27.00	4961	27.75	43
220-250	94 $\frac{1}{2}$	52 $\frac{1}{4}$	13	7	4968	27.00	4962	27.75	43

For Two Stem Suspension

Line Voltage	Approx. Total Watts Consumed	Length	Width	Depth	No.	Each	No.	Each	Approx. Ship. Wt. Lb.
110-125	97 $\frac{1}{2}$	52 $\frac{1}{4}$	13	9	4969	\$28.00	4963	\$28.75	45
199-216	93 $\frac{1}{2}$	52 $\frac{1}{4}$	13	9	4970	28.00	4964	28.75	45
220-250	94 $\frac{1}{2}$	52 $\frac{1}{4}$	13	9	4971	28.00	4965	28.75	45

Extra for switches (identify by letter when ordering): A, canopy pull switch, single-pole, 3 amperes, \$1.00; C, levolier pull switch, single pole, 6 amperes, \$1.85; D, levolier pull switch, double pole, 6 amperes, recommended for fixtures to be used on 220-volt circuits, \$2.50.

Chain suspension units can be furnished with 3-conductor cord 6 feet long with two-prong plug having ground wire extending through the side, \$1.20.

For unit less two starter switches, deduct 65 cents each or \$1.30 for both.

Wheeler Vapor-Proof Fluorescent Lighting Units



Made for use in food plants, foundries, and similar locations where it is necessary to protect lamps, sockets and reflecting surfaces from moisture, dust, smoke and vapors.

The entire outer body of the reflector, including its closed ends, is enameled in one piece. All sockets and lamp operating equipment are mounted on a wiring channel which is installed through the mouth of the reflector.

The mouth of the reflector has a recessed flange to receive the hinged glass cover which seats against cushioning gaskets to form a moisture and dustproof seal.

Hinged dusttight glass cover is readily opened for access to lamps or starter switches by releasing toggle latches. Three types of glass are available: $\frac{1}{8}$ -inch double thick plain clear glass; $\frac{1}{4}$ -inch water white plate glass; and $\frac{1}{4}$ -inch tempered, clear safety plate glass.

All units are supplied complete with the latest type of high power factor ballast equipment employing separate and renewable starter switches.

Two lamp fixtures are supplied with high power factor tulamp ballasts resulting in an overall power factor above 95% and greatly minimizing any stroboscopic effect. A starting compensator is included in all two lamp units.

Fixtures are furnished wired, with pigtailed left for connecting to branch circuit.

All 20-watt units are supplied with a new hinged suspension canopy which swings open upon release of a single screw, exposing pigtailed for quick and easy splicing. Complete unit can be separated from upper portion of the canopy by removing two pivot screws. Canopy is tapped for $\frac{1}{2}$ -inch pipe.

All 40-watt units are supplied with hinged suspension canopy described above and with a hinged hanger which also swings open upon release of a single screw.

Distance from center to center of these suspension fittings, 30 inches. Canopy and hanger are tapped for $\frac{1}{2}$ -inch pipe. Pipe is not supplied.

Reflectors are porcelain enameled, gray outside, white inside. Canopy and hanger are finished in aluminum.

Prices do not include lamps.

Unit with $\frac{1}{4}$ -Inch Double Thick Plain Clear Glass	Unit with $\frac{1}{4}$ -Inch Water White Plate Glass		Unit with $\frac{1}{4}$ -Inch Tempered Clear Safety Plate Glass		
	No.	Each	No.	Each	
4973	\$20.50	C4972	\$25.25	H4972	\$31.00
4975	30.75	C4974	37.00	H4974	50.50
4977	32.00	C4976	40.50	H4976	50.75
4979	30.65	C4978	39.15	H4978	49.40
4981	41.00	C4980	52.50	H4980	67.50
4983	41.00	C4982	52.50	H4982	67.50

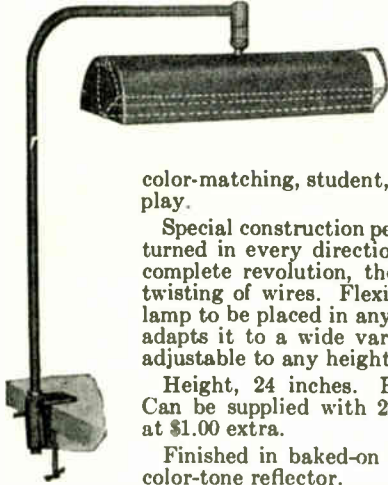
Watts	No. of Lamps	Line Voltage	FIXTURE DIMENSIONS, INCHES		
			Length	Width	Depth
20	1	110-125	27 $\frac{7}{8}$	10 $\frac{5}{8}$	8 $\frac{1}{8}$
20	2	110-125	29	14 $\frac{3}{4}$	9 $\frac{1}{8}$
40	1	110-125	51 $\frac{7}{8}$	10 $\frac{5}{8}$	8 $\frac{1}{8}$
40	1	220-250	51 $\frac{7}{8}$	10 $\frac{5}{8}$	8 $\frac{1}{8}$
40	2	110-125	53	14 $\frac{3}{4}$	9 $\frac{1}{8}$
40	2	220-250	53	14 $\frac{3}{4}$	9 $\frac{1}{8}$

Units for 199-216-volt operation can be supplied at same prices as 220-250-volt units.

For unit less starter switches, deduct 65 cents per switch.

Van Dyke Fluorescent Lamps

110 Volts, 60 Cycles, A.C.



This lamp provides ideal illumination for office, work desk, stenographer, draftsman, laboratory work, factory work bench, artist,

color-matching, student, and merchandise display.

Special construction permits the shade to be turned in every direction. Shade makes one complete revolution, thereby preventing the twisting of wires. Flexible joint enables the lamp to be placed in any desired position and adapts it to a wide variety of uses. Arm is adjustable to any height desired.

Height, 24 inches. Extension, 15 inches. Can be supplied with 24-inch arm extension at \$1.00 extra.

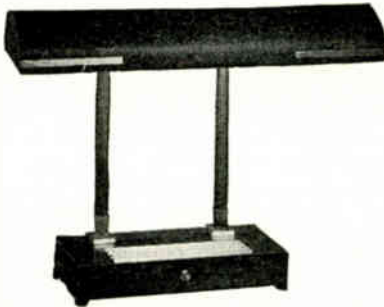
Finished in baked-on Morocco brown with color-tone reflector.

Wired complete but less fluorescent tube.

No.	1275	1276
Each	\$12.75	15.00
Length Hood..... inches	18	24
Wattage of Fluorescent Tube.....	15	20
Length Fluorescent Tube..... inches	18	24

No. 425 Van Dyke Fluorescent Lamps

110 Volts, 60 Cycles, A.C.



This lamp is recommended for use on desks, for the home, or for counter use, where a more decorative lamp is desired.

Base is made of a solid block of walnut, and all ornaments are of solid bronze.

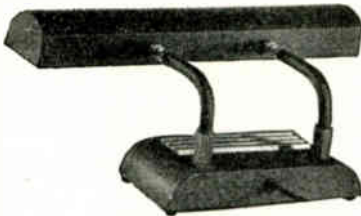
Standard finish is Morocco brown and bronze with waxed walnut base. Takes one 18-inch 15-watt tube.

Wired complete but less fluorescent tube.

No. 425..... each \$16.00

No. 1500 Van Dyke Lite-O-Day Fluorescent Lamps

110 Volts, 60 Cycles, A.C.



This lamp is made with short arms for use on a roll-top desk, piano, or other locations where a short-arm model is desirable.

Has solid bronze pen holder and ornaments, and adjustable shade. Height overall, 6 inches.

Uses 15-watt tube 18 inches long.

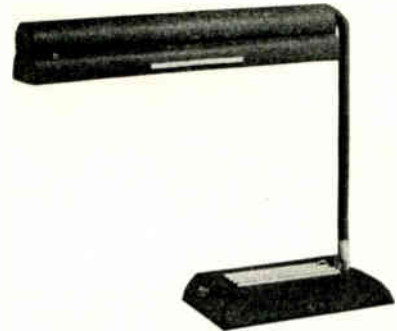
Morocco brown finish.

Wired complete but less fluorescent tube.

No. 1500..... each \$12.75

No. 1100 Van Dyke Lite-O-Day Fluorescent Lamps

110 Volts, 60 Cycles, A.C.



This lamp is recommended for the use of stenographers or for counters for color matching.

The arm makes one complete revolution only, preventing twisting of wires.

Shade tilts to any angle, particularly suited for use with a typewriter.

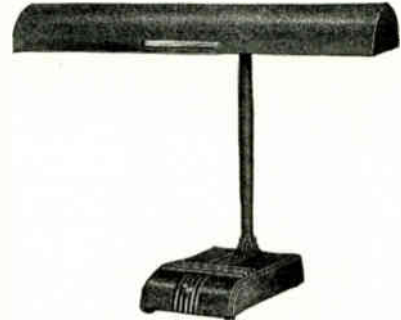
Morocco brown finish with solid hronze trim and color-tone reflector.

Wired complete but less fluorescent tube.

No. 1100..... each \$15.00

No. 2200 Van Dyke Fluorescent Lamps

110 Volts, 60 Cycles, A.C.



This lamp produces glareless daylight. Adjustable shade throws light at exactly the right angle.

Color-tone reflecting surface and is constructed entirely of Underwriters' Approved materials.

Uses 15-watt tube.

Wired complete but less fluorescent tube.

No. 2200, Without Fluorescent Tube..... each \$10.75

Van Dyke Suspended Type Fluorescent Lamps

110 Volts, 60 Cycles, A.C.



Each fixture is complete with rubber cord, spring plug and toggle switch.

Finished in Morocco brown with color-tone reflector.

Wired complete but less fluorescent tube.

No.	1175	1176	1177	1178
Each	\$8.75	9.75	14.25	17.25
Size..... inches	18	24	36	48

**Van Dyke Aristocrat Adjustable
Fluorescent Floor Lamps**

110 Volts, 60 Cycles, A.C.

This lamp can be adjusted in height from 4 feet to 6 feet, 6 inches, and is securely held at every point.

Extreme extension of arm, 18 inches. Shade makes one complete revolution to prevent twisting of wires. Movable joint above shade permits shade to be turned from horizontal or vertical position.

Individual manual type switch. Each lamp equipped with 8 feet of rubber cord and spring plug.

Finished in Morocco brown or ivory with polished chromium trim.

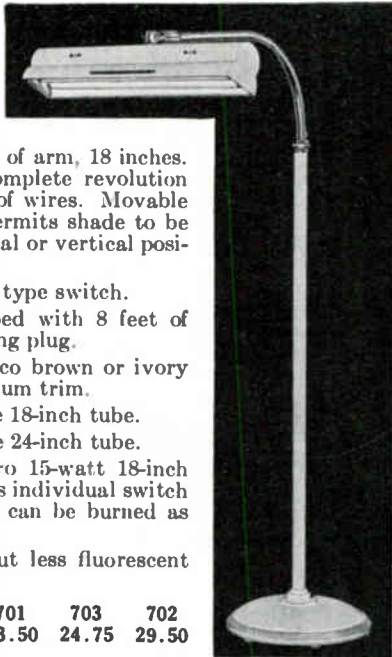
No. 701.—Uses one 18-inch tube.

No. 702.—Uses one 24-inch tube.

No. 702.—Uses two 15-watt 18-inch tubes. Each tube has individual switch so one or two tubes can be burned as desired.

Wired complete but less fluorescent tubes.

No.	701	703	702
Each	\$23.50	24.75	29.50



**No. 1000 Van Dyke Lite-O-Day
Fluorescent Lamps**

110 Volts, 60 Cycles, A.C.



For offices, merchandise display, and home use.

Has solid bronze pen holder and ornaments; adjustable shade.

Morocco brown finish.

Wired complete, but less fluorescent tube.

No.	1000	1024	1025
Each	\$12.75	14.50	22.50
Size Tube	18	24	18
No. of Tubes	1	1	2
No. of Watts	15	20	15

**No. 1002 Van Dyke Lite-O-Day Fluorescent
Double-Desk Lamps**

110 Volts, 60 Cycles, A.C.



A 2-light double-desk lamp recommended for use in the office or for the student.

Equipped with two separate switches and two adjustable shades. Heavy cast base, solid bronze penholder and trim.

Completely equipped with Underwriters' Approved materials. Indestructible spring action plug. Uses 15-watt fluorescent tubes.

Height, 14½ in. Shade size, 18x3¾ in. Base size, 10½x4½ in.

Brown Morocco finish with solid bronze appointments.

Wired complete but less fluorescent tubes.

No. 1002

Van Dyke Strip Lighting Fixtures

For All Side Mountings

110 Volts, 60 Cycles, A.C.



For all side mountings—bank cages, over pictures, bulletin boards, dressing mirrors and bathrooms.

Has two screw-on flanges and adjustable shade. Extension overall, 7 inches. Complete with cord and spring plug.

Finished in Morocco brown or ivory with bronze strip on shade. Wired complete but less fluorescent tube.

No.	118-B	124-B
Each	\$10.00	11.25
Length Fluorescent Tube	18	24

Greist Fluorescent White Knight Lamps



Inside finish and specially designed contours of reflectors provide maximum efficiency. Position of bulb in reflector of lamp gives light a forward directional control. Light spread over wide area on desk, making for comfortable seeing without glare or eyestrain.

Use with T-8, 18-inch, 15-watt daylight fluorescent bulb. Available for both a.c. and d.c.; specify when ordering. If not specified, lamp for a.c. current will be shipped.

No. 6033A

A double swinging arm unit especially designed for delivering well distributed high intensity illumination to drafting boards and other large working areas. Three-point adjustment assures maximum flexibility.

No.	6033A
Bank Bronze Finish, without Bulb.	each \$18.50
Size Shade	inches 18½x6
Height of Shade from Desk	inches 13
Horizontal Arm Extension to Shade Tip.	inches 29
Shipping Weight	pounds 11

No. 6019A

A slightly smaller unit suitable for smaller desks and working areas. With three-point horizontal adjustment.

No.	6019A
Bank Bronze Finish, without Bulb.	each \$17.00
Size Shade	inches 18x6
Height of Shade from Desk	inches 13
Horizontal Arm Extension to Shade Tip.	inches 28½
Shipping Weight	pounds 11

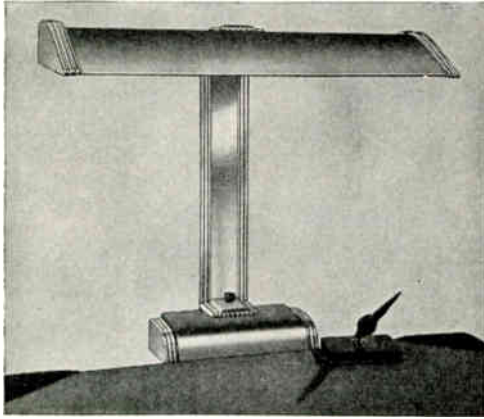
Greist Fluorescent White Knight Lamps

Inside finish and specially designed contours of reflectors provide maximum efficiency. Position of the bulb in the reflector of lamp gives the light a forward directional control. Light is spread over a wide area on the desk, making for easy comfortable seeing without glare or eyestrain.

Use with T-8, 18-inch, 15-watt daylight fluorescent bulb.

Available for both a.c. and d.c.; specify when ordering. If not specified, lamp for a.c. current will be shipped.

No. 6003A Desk Lamp

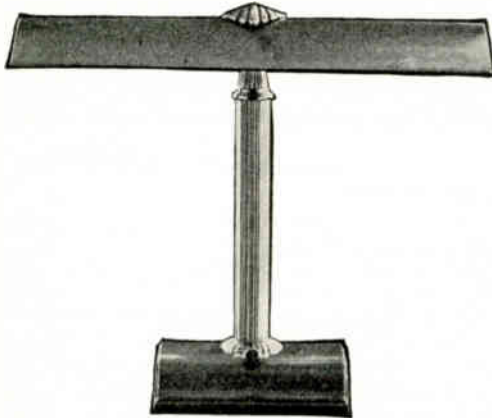


Lamp is 15½ inches high, with aluminum shade 18½ inches long. Shade has a polished highly efficient reflecting surface. Bank bronze finish.

Shipping weight, 10 pounds.

No. 6003A, without Bulb..... each \$17.50

No. 6026A Desk Lamp



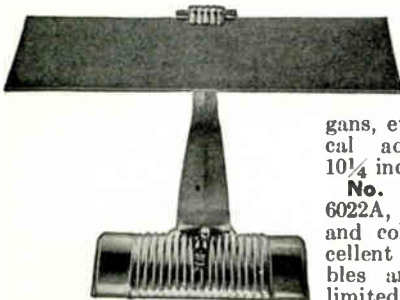
Overall height, 15 inches.

Shipping weight, 9½ pounds.

Enamel Bronze Finish, without Bulb..... each \$10.00

Bank Bronze Finish, without Bulb..... each 12.50

Nos. 6022A and 6022RA Vari-Purpose Lamps



No. 6022RA

Height, 10¼ inches.

No.	6022A	6022RA
Bank Bronze Finish, without Bulb.....	\$15.00	\$15.00
Ripple Green Finish, without Bulb.....	.....	13.50
Shipping Weight..... pounds	10	8

No. 6022A. A versatile unit for flat and roll top desks, pianos, organs, etc. Shade has vertical adjustment. Height, 10¼ inches.

No. 6022RA. Same as 6022A, except with shade and column reversed. Excellent for smaller desks, tables and where space is limited. Shade has vertical adjustment.

No. 1012 Faries Adjustable Portable Lamps



Maximum height, 25 inches; extends 24 inches.

Large rigid tubing with strong one-piece joint permits adjustment to any position.

Wired with key socket, 9 feet of rubber covered cord, and unbreakable rubber plug.

Brushed Brass.....each \$4.00
Statuary Bronze.....each 4.00

No. 1591 Faries Flexarm Portable Lamps



Maximum height, 21½ inches; extends 17 inches.

Decorative base with recessed felt pads.

Wired with turn button socket, 6 feet of rubbercovered cord, and unbreakable rubber plug.

Green.....each \$1.35
Bronze.....each 1.35
Chromium.....each 2.10

Emeralite Glass Shades



Color	*9x3½x5¼ INCHES		†10x4x5 INCHES		‡12x5x5¾ INCHES	
	No.	Each	No.	Each	No.	Each
Black Opaque.....			8750	\$3.50	9750	\$7.00
Green, Plain.....	8734	\$3.00	8752	3.50	9752	7.00
Green, Brocade.....	1435	4.00	8753	4.75	9753	9.00
Russet Brown, Plain..			8754	3.50	9754	7.00
Russet Brown, Brocade			8755	4.75	9755	9.00

*Uses one 40 to 60-watt bulb.

†Uses two 25 to 40-watt bulbs.

‡Uses two 25 to 60-watt bulbs.

Emeralite Plain Glass Cone Shades



Green, White Lined

No.	S64	S170
Each.....	\$1.00	1.50
Diam..in.	7	10
Depth.in.	5	5
Fitter.in.	2¼	2¼

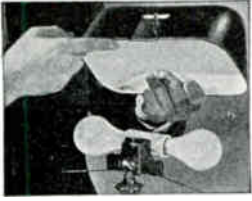
No. 0697 Plain Emeralite Half Shades



Pure white opal glass, plated outside with a rich emerald green. For 16 c. p. lamps. Twelve dozen in a case. Weight, 165 pounds.

No.	Fitter In.	Lgth. In.	Width In.	Each
0697	2¼	6	4½	\$1.25

Emeralite Daylite and Fluorescent Portable Lamps



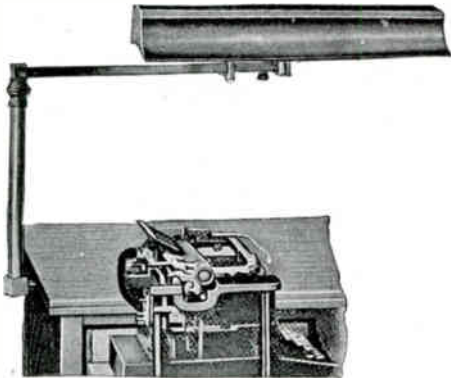
Emeralite Lift-Off Shade and Two Bulbs

Over a million Emeralite lamps have been sold since these well-known lamps appeared on the market. Hardly a business, industry, government office, profession or home is without at least some model of Emeralite lamps. This outstanding record of service results from high standards of manufacture and constant improvement of product. In line with this policy, Emeralite fluorescent lamps are made, as well as the well-known standard Emeralite type using standard Mazda bulbs.

Emeralite fluorescent lamps are a tested product. Cumber- some design of shade has been avoided.



Daylite Screen That Produces Daylight



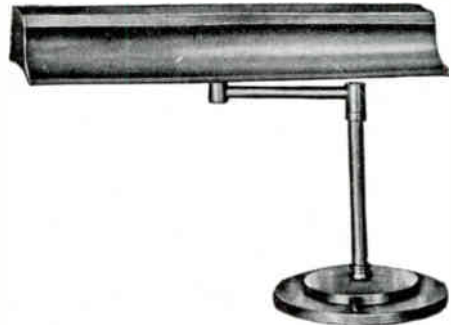
No. 0927-5030, with Fluorescent Shade

For fluorescent or 10½-inch double socket Emeralite shade. Attaches to desk with screws. Bracket adjusts four ways; telescopes 19 to 29 inches.

Finish, statuary bronze.

For clamp type, specify No. 0928.

- No. 0927-5030, with Fluorescent Shade.....each **\$20.00**
- No. 0927-8950, with Black Opaque Shade.....each **17.25**
- No. 0927-8952, with Green Plain Shade.....each **17.25**



No. 0948-5030, with Fluorescent Shade

With fluorescent shade, or 10½-inch lift-off shade with double socket and Daylite screen. Both arm and shade swing right or left.

Diameter of base, 7¼ inches.

Finish, statuary bronze.

- No. 0948-5030, with Fluorescent Shade.....each **\$17.50**
- No. 0948-8950, with Black Opaque Shade.....each **14.50**
- No. 0948-8952, with Green Plain Shade.....each **14.50**
- No. 0948-8953, with Green Brocade Shade.....each **15.75**
- No. 0948-8954, with Russet Brown Shade.....each **14.50**
- No. 0948-8955, with Russet Brown Brocade Shade.....each **15.75**



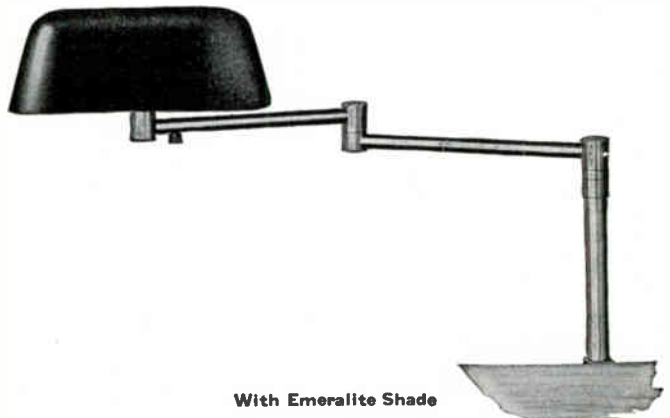
No. 0764-5030, with Fluorescent Shade

For fluorescent or 10½-inch double socket Emeralite shade. Furnished complete with two Eversharp pens. For only one pen, specify No. 0763 and deduct \$9.00.

Base, 7½x9½ inches; height, 18 inches.

Finish, statuary bronze.

- No. 0764-5030, with Fluorescent Shade.....each **\$36.50**
- No. 0764-8950, with Black Opaque Shade.....each **33.50**
- No. 0764-8952, with Green Plain Shade.....each **33.50**
- No. 0764-8953, with Green Brocade Shade.....each **34.75**
- No. 0764-8954, with Brown Plain Shade.....each **33.50**
- No. 0764-8955, with Russet Brown Brocade Shade.....each **34.75**



With Emeralite Shade

With 10½-inch lift-off shade, double socket and Daylite screen, or with fluorescent shade. Attaches to desk in any position with screws, or furnished with No. 0915 clamp. Arms and shade swing right or left.

Extends 23 inches between centers. Height, 19 inches.

Finish, statuary bronze.

- No. 0916-5030, with Fluorescent Shade.....each **\$19.00**
- No. 0916-8950, with Black Opaque Shade.....each **16.00**
- No. 0916-8952, with Green Plain Shade.....each **16.00**
- No. 0916-8953, with Green Brocade Shade.....each **17.25**
- No. 0916-8954, with Russet Brown Shade.....each **16.00**
- No. 0916-8955, with Russet Brown Brocade Shade.....each **17.25**

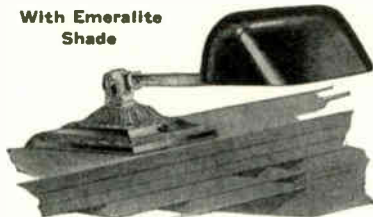
Emeralite Daylite and Fluorescent Portable Lamps Are Made in Over 200 Styles. Complete Information Will Be Sent on Request

Emeralite Daylite and Fluorescent Portable Lamps



With Emeralite Shade

No. E $\frac{1}{2}$ -5030, Fluorescent each \$20.00
 No. E $\frac{1}{2}$ -8950, Black Opaque..... each 17.00
 No. E $\frac{1}{2}$ -8952, Green Plain each 17.00
 Also made with two inkwells and with Sengbush inkwells.



With Emeralite Shade

With 10 $\frac{1}{2}$ -inch lift-off shade, double socket and Daylite screen, or with fluorescent shade.

Base is 7 inches square. Adjustable arm 7 $\frac{1}{2}$ inches between centers. Height, 12 inches.

Finish, statuary bronze.
 No. G-5030, Fluorescent. each \$17.00
 No. G-8950, Black Opaque. each 14.00
 No. G-8952, Green Plain. each 14.00
 No. G-8953, Green Brocade..... each 15.25
 No. G-8954, Russet Brown..... each 14.00
 No. G-8955, Russet Brown Brocade..... each 15.25



With Emeralite Shade

With 10 $\frac{1}{2}$ -inch lift-off shade, double socket and Daylite screen, or with fluorescent shade.

Base is 7 inches square; height, 18 inches.

Finish, statuary bronze.
 No. B-5030, Fluorescent. each \$17.00
 No. B-8950, Black Opaque. each 14.00
 No. B-8952, Green Plain. each 14.00
 No. B-8953, Green Brocade. each 15.25
 No. B-8954, Russet Brown. each 14.00
 No. B-8955, Russet Brown Brocade..... each 15.25



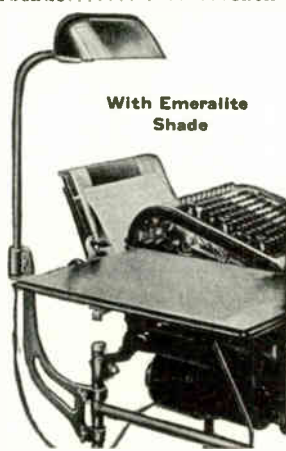
With Brass Shade

With 7-inch parabola brass shade, with or without Daylite screen or with fluorescent shade. Arm swings either right or left and telescopes from 25 to 36 inches; also adjusts vertically.

Clamps to any square edge desk, table or work bench.

Standard 13 inches high. Wired with 10 feet of approved cord, socket and plug.

Finish, statuary bronze.
 No. 0798, Brass, without Daylite Screen..... each \$9.00
 No. 0798-D, Brass, with Daylite Screen..... each 10.00
 No. 0798-5030 Fluorescent each 17.00

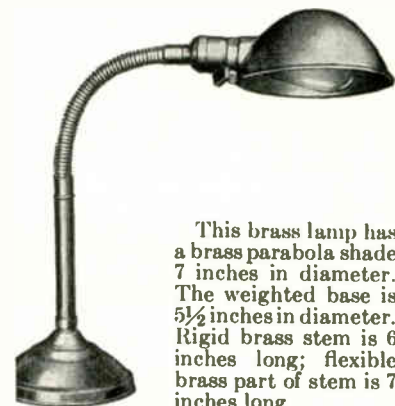


With Emeralite Shade

For double socket 10 $\frac{1}{2}$ -inch Emeralite or fluorescent shade. For adding and calculating machines. Adjustable clamp fits round or square leg stand.

Maximum height, 37 inches. Extension, 13 inches to outer edge of shade. For arm with 22-inch extension, specify U.M. and add \$1.00.

No. A.M.-5030, Fluorescent. ea. \$18.00
 No. A.M.-8950, Black Opaque..... each 15.00
 No. A.M.-8952, Green Plain. ea. 15.00



This brass lamp has a brass parabola shade 7 inches in diameter. The weighted base is 5 $\frac{1}{2}$ inches in diameter. Rigid brass stem is 6 inches long; flexible brass part of stem is 7 inches long.

Finish, old brass.

No. 0700, Brass..... each \$4.50



This Sightsaver Emeralite lamp has a Daylite screen. Accommodates 100-watt Type A Mazda bulb.

Diameter of base, 6 $\frac{1}{2}$ inches; diameter of shade, 11 inches. Height overall, 14 $\frac{1}{2}$ inches.

Finish, statuary bronze.

No. 0910-2205-H, Black Opaque..... each \$14.50

No. 0910-2260-H, Russet Brown Brocade..... each 18.50

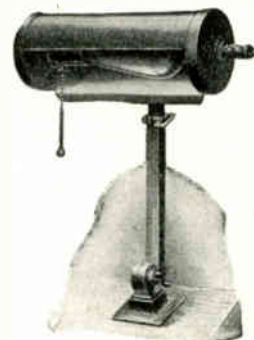
This single socket lamp without Daylite screen is for a pulpit or reading desk. Metal shade has adjustable shutter which permits light to show only on book or manuscript.

Height is adjustable from 9 to 15 inches. Telescopic arm is mounted on substantial joint.

Base is 2 inches square, attached by four screws. For one 25-watt T10 or 60-watt or smaller Type A lamp.

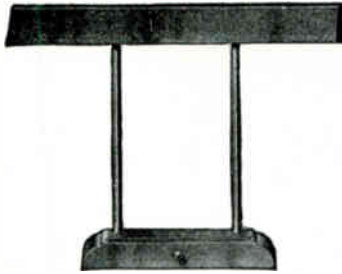
Finish, statuary bronze.

No. 0663..... each \$13.00



Faries Fluorescent Portable Lamps

No. 3093



Height overall, 14 $\frac{1}{4}$ in. Bottom of shade to desk level, 12 $\frac{1}{4}$ in. Shade, 18 $\frac{1}{8}$ x3 $\frac{1}{2}$ x2 $\frac{1}{8}$ in.; adjustable. Inner reflector, baked white enamel. Base, 10 $\frac{5}{8}$ x4 $\frac{1}{2}$ x1 $\frac{3}{4}$ in. Auxiliary and switch with pen or pencil rests in base.

No. 3093, Rippled Bronze & Gold. ea. \$10.00

No. 3064

Same as No. 3093, but equipped with sockets for two 15-watt T-8 bulbs.

No. 3064. each \$18.50

Height overall is adjustable 14 to 26 inches. Bottom of shade to desk level is adjustable 9 to 21 inches. Horizontal arm is adjustable up to 18 inches. With 3-inch flange base.

Finish, rippled bronze and chrome.

No. 3098

. . . each \$9.50

No. 3102, Same as No. 3098

but with Sockets for Two

15-Watt T-8 Bulbs. Not Available for D.C. . . . each

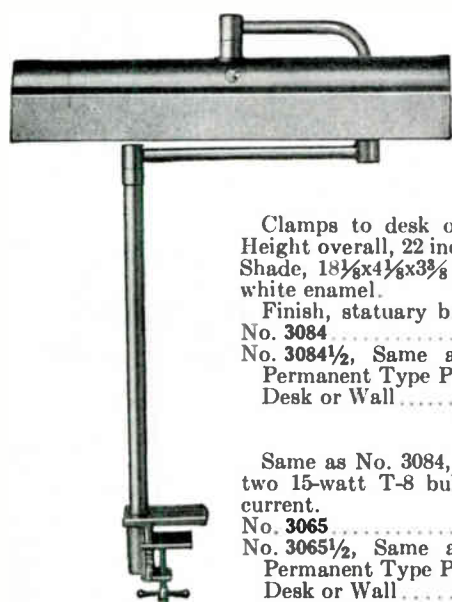
No. 3099, Same as No. 3098 but with Clamp as on

No. 3094. each

No. 3103, Same as No. 3102 but with Clamp as on

No. 3094. each

No. 3104. each



No. 3084

Clamps to desk or table $\frac{3}{4}$ to 2 inches thick. Height overall, 22 inches. Arm extension, 18 inches. Shade, 18 $\frac{1}{8}$ x4 $\frac{1}{8}$ x3 $\frac{3}{8}$ inches. Inner reflector, baked white enamel.

Finish, statuary bronze.

No. 3084. each \$21.00

No. 3084 $\frac{1}{2}$, Same as No. 3084 but with

Permanent Type Plate to Screw to Side of

Desk or Wall. each 21.00

No. 3065

Same as No. 3084, but equipped with sockets for two 15-watt T-8 bulbs. Not available for direct current.

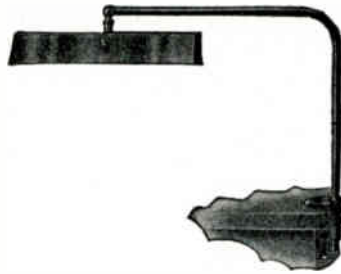
No. 3065. each \$28.50

No. 3065 $\frac{1}{2}$, Same as No. 3065 but with

Permanent Type Plate to Screw to Side of

Desk or Wall. each 28.50

No. 3094



Clamps to desks $\frac{5}{8}$ to 2 $\frac{5}{8}$ inches thick. Height overall, 22 inches. Vertical adjustment up to 17 inches from bottom of shade to desk level. Arm extension, 18 inches. Swings right or left. Shade, 18 $\frac{1}{8}$ x4 $\frac{1}{8}$ x3 inches, on swivel joint. Inner reflector, baked white enamel. Auxiliary and switch in shade.

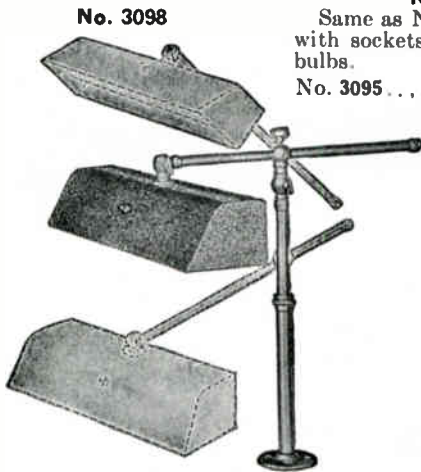
Finish, rippled bronze.

No. 3094. each \$10.00

No. 3095

Same as No. 3094, but equipped with sockets for two 15-watt T-8 bulbs.

No. 3095. each \$17.50



No. 3098

No. 3031



Height adjustable 45 to 55 inches from bottom of shade to floor. Arm extension, 18 inches. Shade, 18 $\frac{1}{8}$ x4 $\frac{1}{8}$ x3 inches. Inner reflector, baked white enamel. Wired with auxiliary and switch in shade.

Finish, rippled bronze and chrome.

No. 3031. ea. \$18.00

No. 3032

Same as No. 3031 but equipped with sockets for two 15-watt T-8 bulbs. Extra heavy base.

Not available for d.c. current.

No. 3032. each \$28.00

No. 3097



Fluorescent desk lamp for double desks. Height overall, 14 $\frac{1}{4}$ inches. Shades, 18 $\frac{1}{8}$ x3 $\frac{1}{2}$ x2 $\frac{1}{8}$ inches. Inner reflector, baked white enamel. Base, 10 $\frac{1}{2}$ x6 $\frac{1}{8}$ x2 inches.

Finish, rippled bronze and gold.

No. 3097. each \$20.00

No. 3096



For roll top desks, filing cabinets or pianos. Height overall, 6 $\frac{3}{8}$ inches. Extension, 11 inches to edge of shade. Shade, 18 $\frac{1}{8}$ x3 $\frac{1}{2}$ x2 $\frac{1}{8}$ inches. Inner reflector, baked white enamel. Base, 10 $\frac{5}{8}$ x4 $\frac{1}{2}$ x1 $\frac{3}{4}$ inches.

Finish, rippled bronze and gold.

No. 3096. each \$10.00

Faries Desk Lamps



No. 1999

No. 1999—Natural Light

Height overall, 26½ inches. Height to bottom of shade, 18½ inches. Metal shade is 14 inches in diameter and 8 inches deep; 8-inch inner reflector. Base is non-tipping, highly polished, and has two grooves for pen or pencil; 4½x8 inches. Wired with turn button socket, 9 feet of rubber covered cord, and unbreakable rubber plug.

Statuary Bronze.....each \$11.00
Satin Nickel.....each 11.00



No. 1989

No. 1989—Natural Light

Clamps to desks 1¼ to 2 inches thick. Height overall, 26½ inches. Height to bottom of shade, 18½ inches. Metal shade is 14 inches in diameter and 8 inches deep; 8-inch inner reflector. Swinging arm with horizontal extension 16½ to 24½ inches from mounting point to center of shade. Wired with switch at base of socket cover, 9 feet of rubber covered cord, and unbreakable plug.

Statuary Bronze.....each \$11.00
Satin Nickel.....each 11.00

No. 2223—Guardzman



Height overall, 15½ inches. Height to bottom of shade, 12 inches. Shade is 12 inches in diameter. Base is 6½ inches in diameter. Wired with turn button socket, 9 feet of rubber covered cord and unbreakable rubber plug.

Finish, statuary bronze.

No. 2223.....each \$5.00

No. 2208—Guardzman

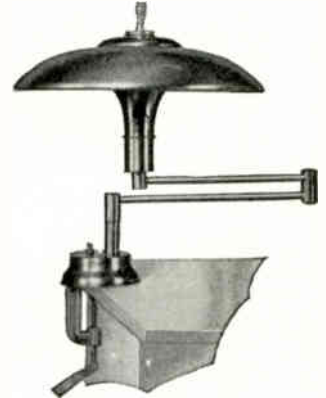


Height overall, 16 inches. Height to bottom of shade, 12½ inches. Shade is 13 inches in diameter. Base is 6 inches in diameter. Wired with turn button switch, 9 feet of rubber covered cord and unbreakable rubber plug.

Finish, statuary bronze and chrome.

No. 2208.....each \$7.50

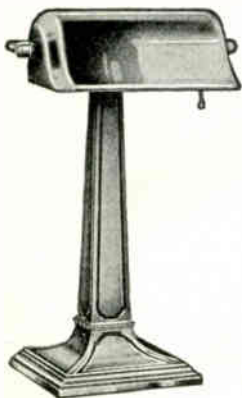
No. 2207—Guardzman



Clamps to desks 1¼ to 2 inches thick. Height overall, 17½ inches. Height to bottom of shade, 13 inches. Shade is 13 inches in diameter. Arm extends 21 inches. Base is 5 inches in diameter. Wired with turn button socket, 9 feet of rubber covered cord, and unbreakable rubber plug.

Finish, Normandie bronze and gold.

No. 2207.....each \$15.75



No. ES-468—With Greenalite Shade

Lamp has an adjustable Greenalite green glass shade with daylight screen. Overall height, 17¾ inches. The heavy, 7-inch square base is felted. Wired with 9 feet of rubber covered cord and unbreakable rubber plug.

Antique Bronze.....each \$12.00
Brushed Brass.....each 12.00
English Bronze.....each 12.00

Greenalite and Verdelite Shades



No. ES-400 Greenalite



No. 3134 Verdelite

These shades are made of two distinct compositions of glass fused into one solid piece. The outside layer is cool, restful green; the inside is soft white opal. By simply using a Mazda blue daylight bulb, these shades give the true daylight effect.

No. ES-400 Greenalite.....each \$3.50
No. 3134 Verdelite.....each 3.00

Dazor Floating Lamps

Reduces Eye-Strain Accidents and Increases Efficiency

Floating action, flexible, and easy to operate. It is floated through the air to any desired position and light is directed to any angle with the tips of the fingers. The weight of the reflector and bulb is balanced by a compensating spring, as in many scales, and not by friction or tight joints. The arm has a horizontal or vertical extension of 34 inches and rotates 360° at base. All fluorescent lamps also obtainable with 24-inch reach.

All lamps have 9 feet of all rubber cord, plug, and socket, approved by Underwriters'.

Incandescent Portable Clamp Types



No. R1

Illustration shows the all-purpose screw clamp base, No. 1007, which clamps to any horizontal or vertical surface up to 2 inches thick, and No. R2 reflector, with 6½-inch diameter. No. R1 reflector, shown in the insert, with 5½-inch diameter, is optional and recommended in most cases for shop use because of its steel construction and handy size.

Five clamp styles are available and optional and should be ordered by number: No. 1016 wall clamp, attaches to vertical surface by screw; No. 1014 drawing board clamp, screws to underside of board leaving edges free; No. 1007 screw clamp, also ideal for drawing board use; No. 1017 desk clamp, clamps to any flat horizontal surface from ¾ to 2½ inches thick; and No. 1020 bench clamp, screws to flat horizontal surface only.

Standard finish is statuary bronze, electro-plated.

Complete with any clamp and either reflector, less bulb. Each \$10.00

Fluorescent Portable Clamp Types

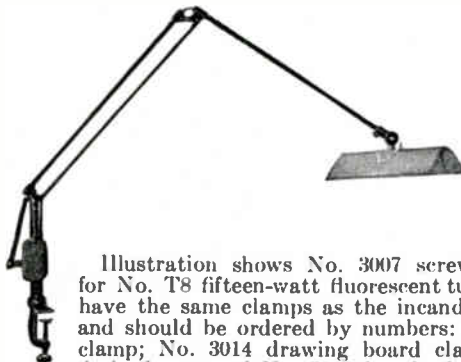


Illustration shows No. 3007 screw clamp base for No. T8 fifteen-watt fluorescent tube. All lamps have the same clamps as the incandescent models and should be ordered by numbers: No. 3016 wall clamp; No. 3014 drawing board clamp; No. 3017 desk clamp; and No. 3020 bench clamp.

In ordering specify style clamp by number and also electric current to be used, either 50 or 60-cycle a.c.

If used on current other than 50 or 60-cycle a.c., the proper resistor must be ordered additionally and plugged in on the line or severe damage will result.

All lamps and reflectors are statuary bronze finished.

Furnished complete with choice of clamps, less tube.

Each \$16.00
 No. 9424-C Resistor, for 110 Volts, D.C. each 1.50
 No. 7730-C Resistor, for 220 Volts, 50 or 60 Cycles, each 1.90
 No. 7930-C Resistor, for 220 Volts, D.C. each 1.90

No. 1015 Incandescent Portable Floor Types



Heavy 12-inch cast iron base.

Vertical standard of 1½-inch cold rolled steel tubing. Arm standard pivots to lamp standard.

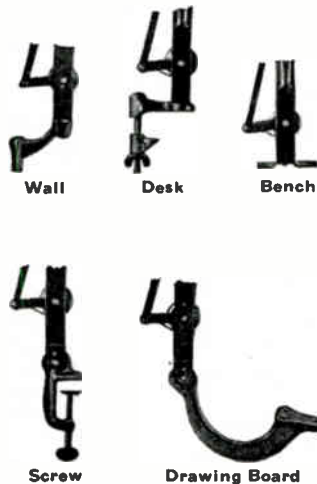
Lamp height from floor to arm connection, 45 inches.

Vertical adjustment, 9 to 69 inches above floor.

Standard finishes are statuary bronze, electro-plated or white enameled base, tube, and reflector with bright zin-o-lyte finished arms.

No. 1015 each \$16.00

Clamps



Wall

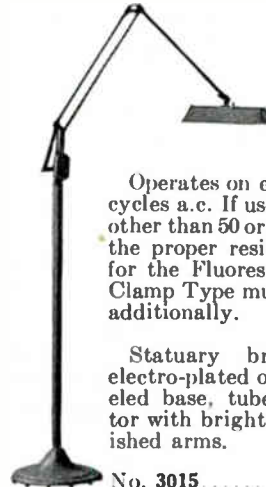
Desk

Bench

Screw

Drawing Board

No. 3015 Fluorescent Portable Floor Types

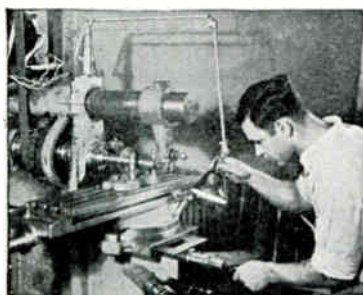


Same design as No. 1015, but uses a No. T8 15-watt fluorescent tube.

Operates on either 50 or 60 cycles a.c. If used on current other than 50 or 60 cycles a.c., the proper resistor as listed for the Fluorescent Portable Clamp Type must be ordered additionally.

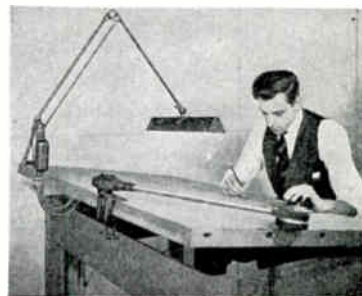
Statuary bronze finish, electro-plated or white enameled base, tube, and reflector with bright zin-o-lyte finished arms.

No. 3015 ea. \$22.00



THESE LAMPS furnish the need for a truly flexible lamp that will stay put. Used in every factory, shop, store, office, bank, school, university, hospital, institution, and home. Industrial application is extensive, as it is employed by draftsmen, inspectors, mechanics, jewelers, typewriter repairmen, etc.; and used on lathes, millers, shapers, presses, grinders, etc.; also by doctors, dentists, chiropractors, and other professionals.

Wherever concentrated local lighting is needed at the point of work, this lamp furnishes such light adjustable at finger tip control.



Ajusco Adjustable Lighting Brackets
With 3 Sets of Universal Joints for Adjustments



Showing No. 28 Shade

Bracket Only			Extras	
No.	Each	Lgth. In.	Description	Each
262E	\$3.80	18	No. 28 Shade	\$.60
262G	4.00	24	3/8-In. Factory Socket	.60
263H	4.20	30	Wiring 16-In. Out.	.40
263K	4.40	36	For Clamp Instead of Flange	.60
264L	4.60	42	*Portable Wiring	.80
264M	4.80	48		

With 4 Sets of Universal Joints for Adjustment



Bracket Only			Extras	
No.	Each	Lgth. In.	Description	Each
266G	\$4.70	24	No. 28 Shade	\$.60
266K	5.10	36	3/8-In. Factory Socket	.60
266M	5.50	48	Wiring 16-In. Out.	.40
			For Clamp Instead of Flange	.60

With Universal Joint at Base—Flexible End Arm

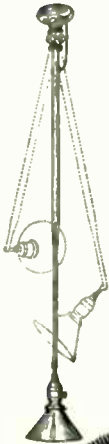


Bracket Only			Extras	
No.	Each	In., Lgth.	Description	Each
272E	\$3.20	18	No. 28 Shade	\$.60
272G	3.40	24	3/8-In. Factory Socket	.60
272H	3.60	30	Wiring 16-In. Out.	.40
272K	3.80	36	With Clamp, Add.	.60

Ajusco Ceiling Fixtures

Universal joint at top allows free action in any direction. Telescopic slide arm enables adjustment in length. Universal joint next to socket permits angulation of reflector.

Furnished complete with socket, shade, and wiring.



No.	Each	Extended Length Over All Inches	Telescopic Adjustment Inches	Minimum Length Over All Inches
105	\$8.00	70	15	55
106	8.00	82	18	64
107	8.00	94	20	74
108	8.50	106	20	86
109	9.00	118	20	98
110	9.50	130	20	110

For chrome finish, add \$3.50.

Ajusco Flexible Arms

Lacquered jap bronze finish.



Size In.	Type A Regular Style	Type B Extra Stiff	Type C Extra Stiff
	1/2-In. I.P. Ends Each	1/2-In. I.P. Ends Each	3/4-In. I.P. Ends Each
9	\$.40	\$.60	\$.80
12	.50	.70	.90
15	.60	.80	1.00
18	.70	.90	1.10
24		1.10	1.30

General Information on Above Items

Standard package, 12; can be assorted styles. Standard finish, black, unless otherwise stated. *Portable wiring constitutes 10-foot cord and plug which can be furnished on any bracket above. Lamp bulbs are not included in above prices.

Ajusco Adjustable Lighting Brackets
With 2 Sets of Universal Joints



Showing style No. 16 and 18 shades. 1/2 inch I.P. male connection.

Bracket Only			Extras	
No.	Each	Lgth., In.	Description	Each
240C	\$2.80	12	No. 16 Steel Shade	\$.60
240D	2.90	15	No. 18 Porcelain Shade	.80
240E	3.00	18	3/8-In. Factory Socket	.60
240F	3.10	21	Wiring 16-In. Out.	.40

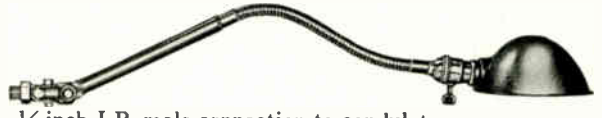
With 3 Sets of Universal Joints



1/2 inch I.P. male connection

Bracket Only			Extras	
No.	Each	Lgth., In.	Description	Each
242D	\$3.70	15	No. 28 Shade	\$.60
242E	3.80	18	No. 16 Steel Shade	.60
242G	4.00	24	No. 18 Porcelain Shade	.80
242II	4.20	30	3/8-In. Factory Socket	.60
242K	4.40	36	Wiring 16-In. Out.	.40

With Universal Joint at Base—Flexible End Arm



1/2 inch I.P. male connection to conduit.

Bracket Only			Extras	
No.	Each	Lgth., In.	Description	Each
244E	\$3.20	18	No. 28 Shade	\$.60
244F	3.30	21	No. 16 Steel Shade	.60
244G	3.40	24	No. 18 Porcelain Shade	.80
244H	3.60	30	3/8-In. Factory Socket	.60
244K	3.80	36	Wiring 16-In. Out.	.40

Ajusco Fluorescent Brackets

With 3 Sets of Universal Joints for Adjustment

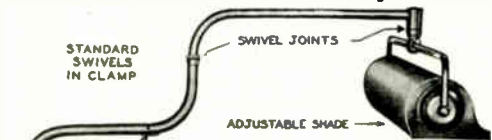


This bracket has an 18-inch shade for 15-watt T8 lamp. Control auxiliaries for 110-125 volts, 60-cycle, a.c. Wired with 10-foot cord, plug, and toggle switch.

Furnished in English bronze finish.

No.	282G	282H	282K
Each	\$14.20	14.40	14.60
Length Over All	inches 24	30	36

4 Swivel Joints for Adjustment



For drafting boards, desks, tables, benches. Overall arm reach, 0 to 24 inches; adjustment in height, 12 to 22 inches.

Auxiliaries for 110-125 volts, 60-cycle, a.c. Furnished with 10-ft. cord, plug, and toggle switch. Lacquered English bronze is stock finish.

For plated statuary bronze or chrome, add \$4.00.

Flange is for attachment to wall or back of desk.

With 18-Inch Shade—For 15 Watt Lamp

No. 235F, with Flange	each \$19.00
No. 235C, with Clamp	each 20.00

With 24-Inch Shade—For 20-Watt Lamp

No. 236F, with Flange	each \$20.00
No. 236C, with Clamp	each 21.00

Graybar Silvray Fixtures

Indirect Luminaires for Use with Silvered Bowl Mazda Lamps

Graybar Silvray Indirect Luminaires are designed specifically for use with the Silvered Bowl Mazda lamp. This results in the employment of the "sealed beam" principle which insures high efficiency, accurate light control and low maintenance cost. The Silvered Bowl lamp in these luminaires eliminates the need for separate reflectors and consequently does away with the factor of reflector cleaning maintenance. An inherent advantage of the Silvered Bowl lamp is its wide distribution characteristic. As a result, uniform ceiling brightness is obtained without spottiness or high brightness directly above the fixture.

The design of this line is modern and graceful due to the narrow cross-section of all luminaires. This advantage of design is possible because the bowl of the lamp protrudes through the center of the fixture and is made part of the fixture design.

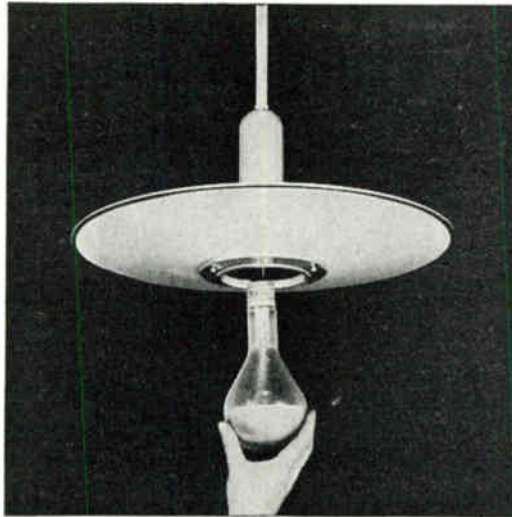
Relamping is simple. There is no need for taking the fixture apart, lowering the bowl or handling fixture parts when relamping. High lighting efficiency is inherent. Light output as high as 90 per cent is available. Maintenance of efficiency

is assured because dust and accumulations in the fixture have no effect on the output of light from the Silvered Bowl Mazda lamp.

A feature of Silvray luminaires is the fact that several sizes of Silvered Bowl lamps may be used in the same fixture without changing the fixture itself. This is accomplished through the use of conversion rings. Provision has also been made to enable hanger lengths to be shortened on the job with a minimum of labor.

All fixtures are constructed of heavy gage metal or of metal-and-plastic combinations and are triple plated over a base copper coat to guarantee the permanence of the finish. Specially prepared heat-resisting enamels are used on units other than those with metallic finishes. Correctly designed baffles are used to provide complete shielding of the lamp neck.

The Silvray line contains units for both commercial and home lighting. The commercial lighting lines are covered by the Challenger and Standard lines. The home lighting line is known as the Sight Saver line. Separate catalogs are available on both lines.



Graybar Silvray Fixtures—Commercial Line

No. 207PL—Liteking



Modern lighting practice favors the use of translucent plastic because it combines the best features of glass and metal. This unit furnishes totally indirect illumination but avoids the "blind spot" of opaque metal units.

High in efficiency. Has an output of 89.5 per cent (E.T.L.). The bowl is protected against warping or deterioration by a series of chrome-and-aluminum concentric rings which separate it from the lamp.

Deep canopy accommodates a pull switch.

Suspension finished in triple-plated cadmium.

No.	Eastern List Price Each	Silvered Bowl Wattage	Suspension Length Inches	Diam. Inches
207PL	\$18.50	300 or 500	26	18

No. 1500—ConEd



A late and modern development in indirect lighting design. For natural coffer ceilings, department store basements, areas over and under mezzanines and similar hard-to-light spaces.

This unit is of steel construction, spot-welded for rigidity. The body and canopy are finished in flat white enamel. The husk is finished in aluminum. The vertical planes of the rings prevent both the trapping of light and accumulation of dust. The lamp is completely shielded from view.

A mogul to medium socket reducer must be inserted when a 200-watt lamp is used.

No.	Eastern List Price Each	Silvered Bowl Wattage	Suspension Length Inches	Diam. Inches
1500	\$18.50	200 or 300	14	19

No. 230—Gauntlet



This all-metal unit is constructed of heavy gage, triple-plated copperized steel, and finished in French grey heat resistant enamel. Has wide chrome bands on both upper and lower louver. A luminous appearance is achieved by permitting a small portion of the light to be directed to the under-surface of the upper louver.

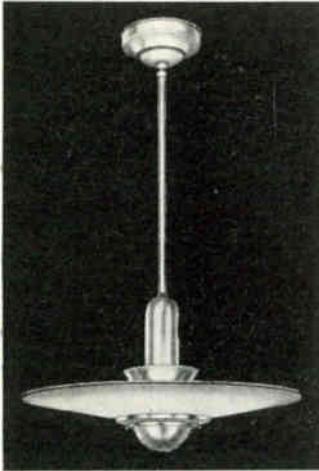
Self-aligning swivel joint in suspension assures straight hanging.

Deep canopy with knockout is standard.

No.	Eastern List Price Each	Silvered Bowl Wattage	Suspension Length Inches	Diam. Inches
203	\$18.50	300 or 500	26	20
203	\$2.00	750 or 1000	36	26

Graybar Silvray Fixtures
Commercial Line

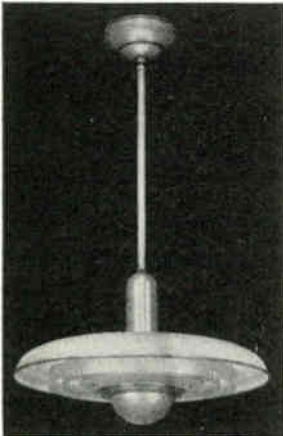
No. 207—Pinnacle



An efficient indirect luminaire. Solidly constructed of triple-plated heavy gage copperized steel. The shallow contour enables this unit also to be furnished in a very narrow diameter to accommodate high wattage lamps. Available in two standard finishes: French grey enamel with black beaded edge and chrome bulb ring, or plated satin cadmium.

No.	Enamel Eastern List Price Each	Cadmium Eastern List Price Each	Silvered Bowl Wattage	Suspension Lgth. Inches	Diameter In.
207	\$17.00	\$18.50	300 or 500	26	20
207	32.00	35.00	750 or 1000	36	25
207-16	16.00	17.00	300 or 500	26	16
207-20	20.00	21.50	750 or 1000	36	20

No. 5050—Dover



Constructed of heavy gage copperized steel. The inside of the dome is finished in aluminum. The exterior is finished in glossy oyster white enamel. Two concentric metal bands and a chrome and oyster white bulb ring separate the lamp from the dome. Special construction of the suspension permits shortening of hanger lengths. Three-way rod support holds bowl to suspension. Aluminum baffle shields the neck of the lamp.

No.	Eastern List Price Each	Silvered Bowl Wattage	Suspension Length Inches	Diameter Inches
5050	\$19.00	300 or 500	36	19

No. 208—Crusader



An all-metal indirect unit of high efficiency. The rolled-edge treatment of the triple-plated solid steel bowl is designed to create an appearance of dense glass.

Standard finish is oyster white enamel. Also available in metallic plated chrome or cadmium.

Chrome-plated bulb ring and deep canopy are standard.

Suspension is cadmium plated.

No.	Eastern List Price Each	Silvered Bowl Wattage	Suspension Lgth. Inches	Diam. In.
208	\$16.00	300 or 500	26	20
208	31.50	750 or 1000	36	25
208	20.00	750 or 1000	36	20

No. 300—Puritan

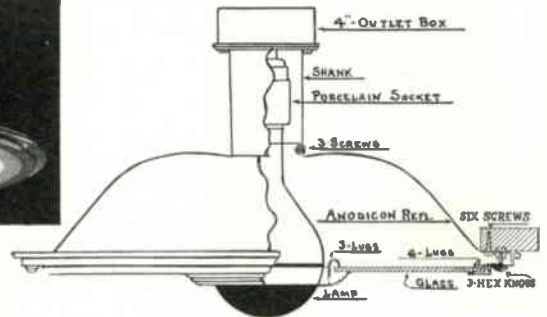


Used in department stores and in offices. A combination metal-and-glass unit. Features a luminous metal louver which blends with a flashed opal glass insert set into the lower ring. Self-aligning ball swivel joint in suspension assures straight hanging, and the Silvray bayonet adjustment in husk makes assembly easy.

Constructed of heavy gage copperized steel, triple plated. Standard finish, two-tone aluminum and cadmium pewter.

No.	Eastern List Price Each	Silvered Bowl Wattage	Suspension Length Inches	Diam. In.
300	\$25.50	150	15	15
300	26.75	200	26	18 1/2
300	29.50	300 or 500	26	21 1/2
300	52.50	750 or 1000	36	28

No. 350—Windsor



A late development in recess lighting. This unit furnishes high-intensity downlight. Special reflector contour and Silvered Bowl lamp combine to eliminate the need for both expensive heavy glass diffusing plates and reflector maintenance. Wide chrome ceiling band supports glass insert decorated with etched concentric rings. Chrome bulb ring separates glass from lamp.

Furnished with a 4-inch outlet box which holds a cylindrical shank attached to the reflector.

For use close-mounted to ceiling, unit is furnished with special canopy to cover shank.

No.	Eastern List Price Each	Silvered Bowl Wattage	Recessed Length Inches	Length to Bowl of Lamp Inches	Diameter Inches
350	\$15.50	200	6 1/4	8 1/4	17 3/4
350	20.00	300 or 500	8 3/4	11 1/4	20 1/4
350CM	17.00	200	...	8 1/4	17 3/4
350CM	21.50	300 or 500	...	11	20 1/4

Graybar Silvray Domestic Fixtures

Sight Saver Line for Home Light Conditioning

The use of Silvered Bowl lamp lighting in offices, schools, stores, banks and public buildings has created a demand for this same eye-sight conserving quality of light for home use. As a result, Silvray has created for domestic use a complete line of ornamental units which embody many of the best features of the commercial luminaires.

There are styles for every room, inviting complete modernization of the entire home.

Among the types available are some that clip on to the bowl of the lamp. Others are designed for screw-base installation. For permanent installation there are the completely wired units here illustrated.



No.	Eastern List Price Each	Silvered Bowl Wattage	Length Overall Inches	Diameter Inches
4515-S	\$7.00	150	11 $\frac{3}{4}$	14
4520-S	7.50	200	18 $\frac{3}{4}$	14

No.	Eastern List Price Each	Silvered Bowl Wattage	Length Overall Inches	Diameter Inches
2610-S	\$5.25	100	11	10
2615-S	5.50	150	11 $\frac{3}{4}$	12

No.	Eastern List Price Each	Silvered Bowl Wattage	Length Overall Inches	Diameter Inches
4915-S	\$7.00	150	11 $\frac{3}{4}$	12



No.	Eastern List Price Each	Silvered Bowl Wattage	Length Overall Inches	Diameter Inches
4215-S	\$5.25	150	11 $\frac{3}{4}$	12
4220-S	5.75	200	18 $\frac{3}{4}$	14

No.	Eastern List Price Each	Silvered Bowl Wattage	Length Overall Inches	Diameter Inches
6120-S	\$16.00	200	36	16

For use in large rooms. Equipped with a chrome suspension which gives it a greater overall length.

No.	Eastern List Price Each	Silvered Bowl Wattage	Length Overall Inches	Diameter Inches
2620-S	\$8.25	200	18 $\frac{3}{4}$	16

Graybar Direct Lighting Globes

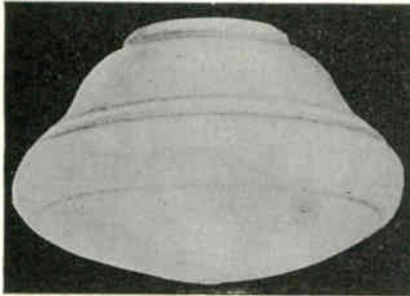
For use with standard fixtures. Made in standard sizes to accommodate the various sized lamps generally used in commercial lighting. Available in both plain and decorated styles.

Globes are of a uniform quality and weight. They are shaped to give the maximum lighting results that can be obtained with modern diffusing glass. They have a high efficiency and, with low brightness, the light is evenly and correctly distributed without shadows or bright spots. The glass is of a uniform quality, free of streaks, blisters, checks or other imperfections.

The standard line, series No. 66, 88, and 99, is available in either homogeneous opal diffusing glass or in a three-layer cased glass.

The homogeneous opal diffusing glass is a single layer white glass of selected density and uniformity.

In the cased globe, inner and outer layers are crystal glass and the diffusing middle layer is white glass. This type of globe is strong, with high light output, excellent diffusion, and no glare. Due to the smooth surface of this glass, dust and dirt do not settle on the surfaces as they do on a rough surfaced glass.



No. 6620, Plain



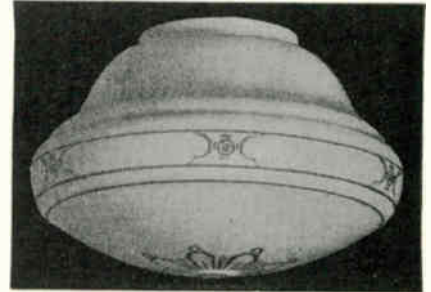
No. 8820, Plain



No. 9930, Plain

Series No. 66—Opal or Cased
Furnished in plain, or in D-3 and D-4 decorative styles. When ordering, specify which style wanted and whether opal or cased.

No.	Opal Each	Cased Each	Fitter Inches	Diam. In.	Depth In.	Recom- mended Wattage	Std. Pkg.	Ship. Wt. Lb. per Pkg.
6675	\$1.20	\$1.40	4	9	5	75	8	21
6680	1.80	2.20	4	10	6	75-100	8	28
6610	3.10	3.80	*4 or 6	12	7	100-150	4	16
6620	4.00	4.80	6	14	8½	200	2	14
6630	5.90	7.10	6	16	9¼	200-300	2	19

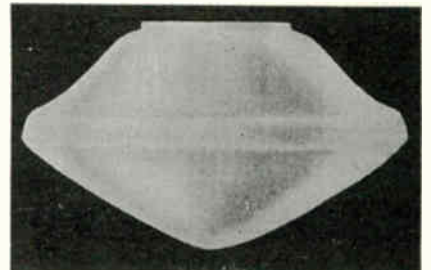


No. 6620, D-4

Series No. 88—Opal Only
In plain or D-452 decorative styles; specify when ordering.

Also furnished with ground neck (neck- less) for use with G type fixture only. When ordering, specify ½ after number —i.e., 8820½.

No.	Opal Each	Fitter Inches	Diam. In.	Depth In.	Recom- mended Wattage	Std. Pkg.	Ship. Wt. Lb. per Pkg.
8875	\$1.20	4	9	6½	75	8	24
8880	1.80	4	10	6½	75-100	8	27
8810	3.10	*4 or 6	12	8¾	100-150	4	17
8820	4.00	6	14	8¾	200	2	10
8830	5.90	6	16	10¾	200-300	2	16
8850	9.10	†6 or 8	18	11	500	1	10



No. 8820½

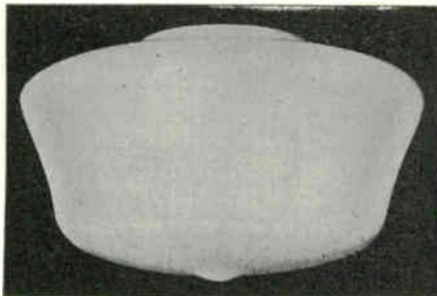
Series No. 99—Opal or Cased
Furnished in plain, or in D-1, D-2, and D-6 decorative styles. When ordering, specify which style wanted and whether opal or cased.

No.	Opal Each	Cased Each	Fitter Inches	Diam. In.	Depth In.	Recom- mended Wattage	Std. Pkg.	Ship. Wt. Lb. per Pkg.
9975	\$1.20	\$1.40	4	9	6¼	75	8	25
9980	1.80	2.20	4	10	6½	75-100	8	29
9910	3.10	3.80	*4 or 6	12	7¾	100-150	4	19
9920	4.00	4.80	6	14	9	200	2	14
9930	5.90	7.10	6	16	10	200-300	2	17
9950	9.10	11.00	†6 or 8	18	12	500	1	20



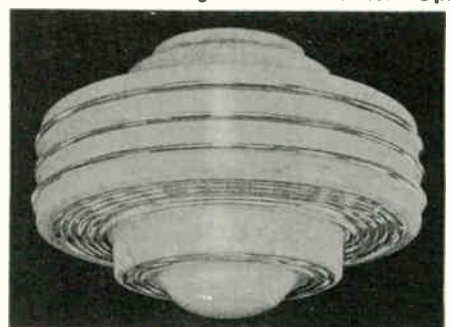
No. 9930, D-1

Series No. 92—Selenite Glass—Opal



No. 9216

Series No. F273—Crystal and Enamel—Opal



No. F273-14

No.	Opal Each	Fitter Inches	Diam. Inches	Depth Inches	Recom- mended Wattage	Std. Pkg.	Ship. Wt. Lb. per Pkg.
9208	\$.80	4	8½	6	100	12	22
9209	.90	4	9	6½	100	4	12
9210	1.30	4	10	6¾	150	8	26
9212	2.10	*4 or 6	12	7	150	4	18
9214	2.90	6	14	8½	200	2	18
9216	4.10	6	16	9	300	2	16
9218	6.40	6	18	10¾	500	1	15

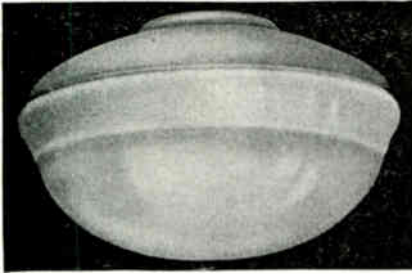
No.	Opal Each	Fitter Inches	Diam. Inches	Depth Inches	Recommended Wattage	Std. Pkg.	Ship. Wt. Lb. per Pkg.
F273-8	\$2.20	4	8¾	6¼	75-100	12	24
F273-14	6.30	6	14¾	9¼	200	2	18

*The 4-inch size is standard; 6-inch size supplied on re- quest only.

†Specify either 6 or 8-inch size when ordering.

Graybar Semi-Indirect Lighting Globes

Series No. 33



No. 3330, Plain

Made of clear crystal glass. The lower half is coated on the outside with a ceramic enamel which redirects the downward light. The upper half is etched on the inside for better diffusion.

Furnished in plain or in D-5 decorative styles; specify when ordering.

No.	Each	Fitter Inches	Diam. Inches	Depth Inches	Recommended Wattage	Std. Pkg.	Estimated Wt. Lb. per Pkg.
3375	\$3.00	4	9	6 $\frac{1}{4}$	75	8	22
3380	3.40	4	10	6 $\frac{1}{2}$	75-100	8	27
3310	4.50	*4 or 6	12	7 $\frac{3}{4}$	100-150	4	20
3320	6.90	6	14	9	200	2	14
3330	8.60	6	16	10	200-300	2	18
3350	12.30	†6 or 8	18	12	500	1	13

Series No. 77



No. 7730, Plain

Made of cased glass of dual opacity with light density top for diffusion and heavy density bottom for reflection. One-piece construction with two-layer diffusing alabaster top and three-layer alabaster reflecting bottom. Thus approximately two-thirds of the light is directed upward and softly diffused, without ceiling shadows, over a wide area. The remaining one-third downward transmitted light is of low brightness, free from glare.

Furnished in plain or in D-452 decorative styles; specify when ordering.

Also furnished with ground neck (neckless) for use with G type fixture only. When ordering, specify $\frac{1}{2}$ after number—i.e., 7730 $\frac{1}{2}$.

No.	Each	Fitter Inches	Diam. Inches	Depth Inches	Recommended Wattage	Std. Pkg.	Estimated Wt. Lb. per Pkg.
7775	\$3.30	4	9	6 $\frac{1}{2}$	75	8	24
7780	3.80	4	10	6 $\frac{1}{2}$	75-100	8	27
7710	5.00	*4 or 6	12	8 $\frac{3}{8}$	100-150	4	17
7720	7.60	6	14	8 $\frac{7}{8}$	200	2	10
7730	9.60	6	16	10 $\frac{3}{8}$	200-300	2	16
7750	13.70	†6 or 8	18	11	500	1	10

No. 2130—Plain Only



Made of clear crystal glass. The lower half is coated on the outside with a ceramic enamel which redirects the downward light. The upper half is etched on the inside for better diffusion.

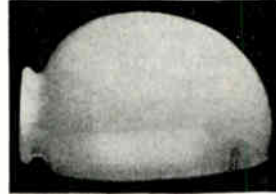
No.	Each	Fitter Inches	Diam. Inches	Depth Inches	Recommended Wattage	Std. Pkg.	Estimated Wt. Lb. per Pkg.
2130	\$7.60	6	16	8	200-300	2	20

*The 4-inch size is standard; 6-inch size supplied on request only. †Specify either 6 or 8-inch size when ordering.

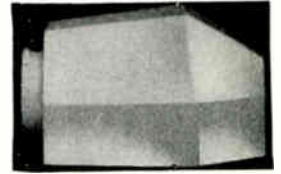
Graybar Miscellaneous Glassware

These shades are designed for use with some of the wall brackets and ceiling fixtures. They also can be used as replacements with fixtures of other makes that have standard fittings.

Made of a single layer homogeneous opal white glass of density carefully selected for diffusing qualities. This glass is light in weight and warm in color providing a more refined appearance than ordinary white commercial glass.



No. G-42

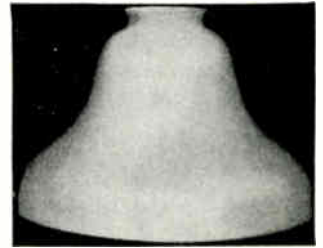


No. G-9504

No.	Each	Diam. In.	Depth In.	Fitter In.	Std. Pkg.	Ship. Wt. Lb. per Std. Pkg.
G-42	\$.80	5 $\frac{1}{2}$	3 $\frac{1}{2}$	2 $\frac{1}{4}$	36	30
G-9504	.80	5	3 $\frac{1}{2}$	2 $\frac{1}{4}$	36	30



Nos. G-747 and G-975



Nos. G-615, G-699, and G-700

G-747	\$.54	4 $\frac{3}{4}$	4 $\frac{5}{8}$	2 $\frac{1}{4}$	24	32
G-975	.66	6 $\frac{1}{8}$	5	2 $\frac{1}{4}$	27	37
G-615	.66	6	4	2 $\frac{1}{4}$	36	29
G-699	.90	7	5	2 $\frac{1}{4}$	24	30
G-700	1.24	8	5	2 $\frac{1}{4}$	24	42



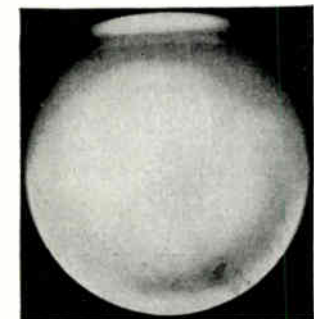
Nos. G-346, G-347, and G-348

No.	G-346	G-347	G-348
Each.....	\$.88	1.24	1.40
Diam....in.	7	7 $\frac{1}{2}$	9
Depth...in.	2 $\frac{3}{4}$	3 $\frac{3}{8}$	3 $\frac{1}{2}$
Fitter...in.	2 $\frac{1}{4}$	2 $\frac{1}{4}$	2 $\frac{1}{4}$
Std. Pkg...	24	24	24
Ship.Wt.lb.	33	33	34



Nos. G-340, G-341, and G-342

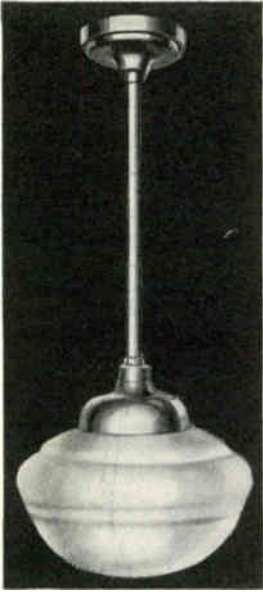
No.	G-340	G-341	G-342
Each.....	\$.66	.88	1.24
Diam....in.	6	7	8
Depth...in.	4 $\frac{1}{2}$	5 $\frac{1}{8}$	5 $\frac{3}{8}$
Fitter...in.	2 $\frac{1}{4}$	2 $\frac{1}{4}$	2 $\frac{1}{4}$
Std. Pkg...	24	24	24
Ship.Wt.lb.	27	33	33



Nos. G-608-6 and G-608-8

No.	G-608-6	G-608-8
Each.....	\$.70	1.10
Diam....in.	6	8
Depth...in.	6	8
Fitter...in.	3 $\frac{1}{4}$	4
Std. Pkg...	27	12
Ship. Wt. lb.	32	30

Graybar M-Type (Shelcrest) Fixtures



No. M6H-9920

This fixture is made of genuine molded bakelite which offers additional insulating properties not found in metal fixtures. It is particularly suitable for use in any location where exposed metal fixtures are subject to corrosion.

The globe holder for both hanging and ceiling models is a saddle type shaped to accurately seat the globe from the inside and under the neck. To remove globe, tilt to a 30° angle and slip off the holder. Either the 4 or the 6-inch fitter can be used with the standard holder.

The hanging type is really a chain suspension encased in a rigid stem. This stem is in three 6-inch sections (3/4-inch diameter) which permits shipping in a knockdown form, and also makes this fixture adaptable for varying mounting heights. It is easy to install. The extra strong supporting chain attaches to a brass slotted hickey, adaptable to all outlet conditions. The canopy is a shallow slip type with knockout. It drops the full length of the chain.

The ceiling type has the standard shallow canopy with knockout molded in one piece with the socket cover. The mounting is accomplished by a slotted strap.

Fixtures are already wired with No. 14 stranded asbestos covered wire: Ground leg, white; live leg, brown.

Japanese bronze finish. Also obtainable in ivory. The finish is practical and resistant to wear as the color permeates the entire material and surface scratches do not show.

Globes recommended for use with this fixture: 99, 66, 33, and 88.



No. M4C-6620

Packed twelve in a standard package. Fixture parts are numbered and packed in individual cartons, 8x8x6 inches.

No.	M4C	M6C	M4H	M6H	M7H
Each	\$3.75	4.00	6.30	6.90	9.00
Suspension	Ceiling	Ceiling	Stem	Stem	Stem
Fitter	4	6	4	6	6
Fixture Length Less Glass	4 1/2	5	23	24	24
Socket	Medium	Medium	Medium	Medium	Mogul
Ship. Weight per Standard Package	21	24	24	27	30

Graybar X-Type (Chase) Fixtures



No. X6H4-9920

This economical safety type fixture was designed to take the place of the low-price screw type fixture.

The safety type holder has three rigid arms projecting from the socket cover which slip under the neck of the globe on the inside.

A snug fitting ring drops over the globe opening concealing the assembly.

The ceiling type is mounted by means of a steel strap and barrel nuts. The tube suspension type (3/4-inch heavy gage brass tubing) has a swivel joint which is concealed when the fixture is in place.

The hanging type is mounted by a hickey.

Steel chain is standard on the chain pendant type (which is otherwise made of brass), except when brass chain is ordered. Six-inch slip stem is provided.

Made of 22-gage brass.

Standard finish is plated Statuary bronze. Finishes such as English bronze or satin chromium can be obtained.

Fixtures regularly wired with No. 16 cotton covered slow burning asbestos wire.

Globes recommended for use with this fixture: 66, 88, 99, 33, and 77 up to 300-watt capacity.



No. X6C-9920

No.	X4C	X6C	X7C	X4H	X6H	X7H	X4H4	X6H4	X7H4
Each	\$2.40	2.70	4.05	3.30	3.60	4.35	4.50	4.50	5.25
Suspension	Ceiling	Ceiling	Ceiling	Chain	Chain	Chain	Stem	Stem	Stem
Fitter	4	6	6	4	6	6	4	6	6
Fixture Length Less Glass	4	6	6	36	36	36	26	26	26
Socket	Medium	Medium	Mogul	Medium	Medium	Mogul	Medium	Medium	Mogul
Standard Package	25	25	25	24	24	24	Bulk	Bulk	Bulk
Ship. Wt. per Std. Pkg.	30	30	40	53	55	61	..	..	..

Graybar Lighting Catalog Which Lists a Complete Line of Fixtures, Glassware, and Accessories Can Be Furnished. Any Graybar Office Will Also Give Recommendations Regarding the Lighting Equipment Suitable to Meet Your Specific Needs.

Graybar G-Type (Chase) Fixtures

This fixture is designed particularly to be used with the neckless type enclosing globe of either direct or semi-indirect design.

The lines are exceptionally graceful for so sturdily a constructed fixture, which is appropriate for use in luxurious interiors or the most businesslike office.

The holder is designed to give the maximum safety. It has two wide ledges. The globe is tipped and slides over these ledges until it rests in place. Then, a covering ring drops down and screws on to the holder. The globe cannot be removed until the ring has been raised.

The small shallow canopy is flanged sufficiently to accommodate a canopy switch, and a concealed patented swivel joint insures plumb hanging.

Fixtures are already wired with No. 16 Deltabeston.

Constructed of 22-gage brass with a satin chromium finish.

In the hanging type, the simplicity of design makes it easy to install.

Globes recommended for use with this fixture: 77½ and 88½ (Neckless).

Packed 10 in a standard package.

No.	G4C	G6C	G4H	G6H	G7H
Each	\$3.00	3.30	4.80	4.80	5.70
Suspension	Ceiling	Ceiling	Stem	Stem	Stem
Fitter	4	6	4	6	6
Fixture Length Less Glass	5½	6½	26	26	26
Socket	Medium	Medium	Medium	Medium	Mogul
Ship. Weight per Standard Package	17	17	20	20	25

Graybar Lighting Catalog Which Lists a Complete Line of Fixtures, Glassware and Accessories Can Be Furnished. Any Graybar Office Will Also Give Recommendations Regarding the Lighting Equipment Suitable to Meet Your Specific Needs.



No. G6H-8820½



No. G6C-8820½

Graybar Adapter Units

The use of Adapter Units improves lighting conditions. These units screw into any existing ceiling socket like an ordinary lamp bulb. No wiring or installation expense is necessary. The objectionable features of the bare lamp are overcome and the advantages of direct or indirect lighting are obtained.

No. 8410 No-Wire-Lite (Inland Glass)



Made of Snow White glass with metal holder of white enamel.

No.	Each	Diam. Hold-In.	Diam. Globe In.	Depth In.	Wattage Lamp	Std. Pkg.	Ship. Wt. Lb.
8410	\$1.80	4	10	7½	150	12	32

No. 952 Glare Chaser (Bryant)



Made of plastic. Suspended from the socket by three bead chains. Finished in cream ivory.

Packed in bulk.

No.	Each	Type Holder	Diam. Globe In.	Depth In.	Wattage	Std. Pkg.	Ship. Wt. Lb.
952-S	\$.82	Short Neck	10½	5¼	100-150	..	..
952-L	.88	Long Neck	10½	5¼	100-150	..	..

Catchon Holders (Wakefield)



Nos. 66, 88, 99, 33 and 77 globes are recommended for use with these holders. Equipped with three holder screws. Finished in statuary bronze.

No.	Each	Diameter Holder Inches	Wattage	Std. Pkg.	Ship. Wt. Lb.
6146	\$.42	4	...	12	8
2166	.54	6	...	12	9

Sight Savers (Silvray)

Constructed of heavy gage die-drawn steel. Heat resistant enamel is applied. Striping is done by hand.

Used with Silvered Bowl Mazda lamps.

Finished in French grey and eggshell cream, with chrome borders, sepia stripings.



No.	Eastern List Price Each	Diameter Holder Inches	Diameter Inches	Depth Inches	Silvered Bowl Lamp Wattage	Std. Pkg.	Ship. Wt. Lb.
2610	\$2.10	..	10	7	100	12	23
2615	2.35	..	12	7¾	150	12	31
2620	4.50	..	16	9	200	8	46

No. 42 Line Inland Hangers, Holders and Globes

Graybar Economy Lighting Fixtures
External Cushion Type Safety Holder



With Telescopic Hanger for All Modern Lighting Requirements



With Ceiling Holder for Low Ceiling Mountings

The No. 42 Line is used in stores, offices, schools and all types of public buildings. The contour evenly distributes light over the working plane, and results in lighting effects well in keeping with "Better Light—Better Sight" theories.

Telescopic Hangers

With this hanger, there is no need to cut stems and thread pipe for special ceiling heights. Being easy to adjust and simple to assemble, quick installation is assured.

The adjustable feature is made possible by an ornamental clutch and telescoping tubes which permit a maximum overall length of 46 inches and a minimum of 29 inches; fully equipped with 54 inches of No. 16 wire (unassembled).

A medium base socket with an adjustable feature of 6 inches plus or minus permits proper lamp placement. Hanger is constructed of No. 18 gage spun aluminum with a brushed permanized finish.

Specify kind of socket when ordering.

No.	Hanger Only Each	Description	Pkg. Qty.	Ship. Wt. Lb.
K214	\$6.75	With Medium Base Socket.....	1	3½
K216	7.05	With Medium Socket.....	1	3¾
K216M	8.55	With Mogul Socket.....	1	3¾
K218	9.30	With Mogul Base Socket.....	1	4

Ceiling Holders

Holder is equipped with medium base socket and wire (unassembled); has a socket extension feature for proper lamp placement. Installation is easy and quick.

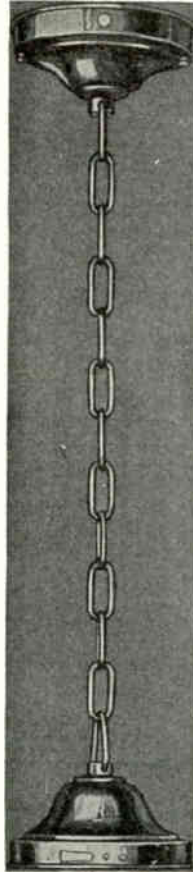
Specify kind of socket when ordering.

No.	Hanger Only Each	Description	Pkg. Qty.	Ship. Wt. Lb.
K644	\$3.15	With Medium Base Socket.....	1	1½
K646	4.05	With Medium Socket.....	1	2
K646M	5.55	With Mogul Socket.....	1	2
K648	6.30	With Mogul Base Socket.....	1	2¼

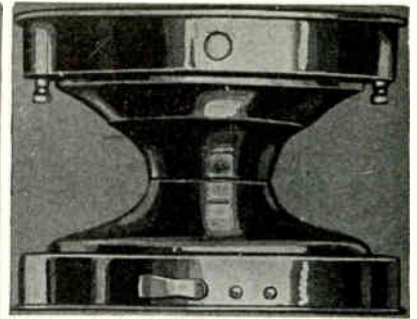
Translite Globes

Globes, of efficient Translite glass, are made in various sizes to meet every lighting requirement. All globes are finished with rolled edges and glazed.

No.	Each	GLASS SIZE, INCHES			Recom. Lamp Size Watts	Std. Pkg.	Ship. Wt. Lb.
		Diameter	Fitter	Depth			
4210	\$1.65	10	4	5¾	100	12	32
4212	2.82	12	6	6¾	150	6	23
4214	3.63	14	6	7½	200	2	15
4216	5.34	16	6	8¼	300	1	10
4220	16.29	20	8	10	500	1	13



No. 1160 Strap Canopy Chain Pendant



No. 1260, Ceiling Collar

A safe, simple and foolproof method for holding enclosing glassware. Designed to form a cushion around the neck of the glassware, allowing for expansion and contraction and eliminating the possibility of globe breakage. Permits ease and speed in installation.

Nos. 66, 88, 99, 92, 33, and 77 globes are recommended for use with these fixtures.

Fixtures are made of copper-plated steel; 22-gage brass can be had at additional charge.

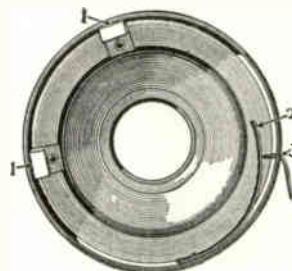
Made in ceiling and hanging types. Hanging types are available with either swivel stem or chain. Canopy is 6 inches in diameter with knockout.

Wired with Underwriters' approved asbestos wire and sockets; No. 16 wire for medium base sockets; No. 14 wire for mogul base sockets.

Holders aluminized inside. Standard finish, statuary bronze; pewter finish, optional.

No.	Each	Suspension	Fitter Inches	Length Overall Inches	Socket
1140	\$2.13	Strap Canopy Chain....	4	30	Medium
1160	2.13	Strap Canopy Chain....	6	30	Medium
1160M	2.88	Strap Canopy Chain....	6	30	Mogul
1143S	3.48	½-Inch Swivel Stem....	4	24	Medium
1163S	3.48	½-Inch Swivel Stem....	6	24	Medium
1163SM	4.23	½-Inch Swivel Stem....	6	24	Mogul
1240	1.29	Ceiling.....	4	4¾	Medium
1260	1.29	Ceiling.....	6	4¾	Medium
1260M	2.49	Ceiling.....	6	4¾	Mogul

Parts



1. Stationary arms, ½-inch by 22-gage brass.

2. Spring, ½x3 inches, 20-gage. Acts as a cushion around neck of glass.

3. Lever, 18-gage brass.

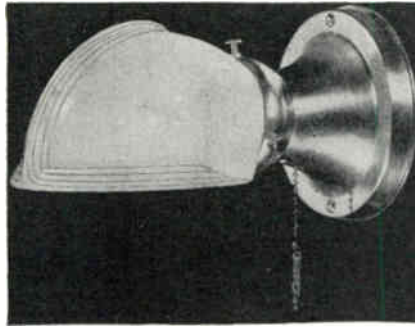
To lock glass in position close lever (3) which expands spring (2).

Graybar Wall Brackets

Constructed of brass. Fixture comes wired. Extension types are available in polished chromium or white enamel finish; flush types, in polished chromium.



No. 1134



No. 1125, Pull Chain
No. 1132, Keyless



No. 1075

Extension Type

Screw type holders.		1125		1132	
No.	1134	1125	1132	No.	1075
Each	\$3.75	2.70	2.55	Each	\$2.70
Type Socket	Key	Pull Chain	Keyless	Type Socket	Turn Knob Switch
Diameter of Fitter	2 1/4 inches	2 1/4	2 1/4	Height	7 1/2 inches
Diameter of Canopy	4 3/4 inches	4 1/2	4 1/2	Width	4 1/4 inches
Extension	6 inches	9	9	Extension	2 3/4 inches
Height	9 1/2 inches				

Flush Type

No.	1075	1049
Each	\$2.70	2.40
Type Socket	Turn Knob Switch	Keyless
Height	7 1/2 inches	7 1/2
Width	4 1/4 inches	4 1/4
Extension	2 3/4 inches	2 3/4

Graybar Midas Line (Chase) Semi-Indirect Fixtures

With Plastic Bowl

Plastic bowl is a recent development in the lighting field. It now has a definite place in the lighting industry, and has become recognized as a standard for a reflecting medium.

This new Chase semi-indirect fixture is the result of years of careful scientific study, and the problems of making plastics satisfactory and suitable for commercial use have been overcome. Chase Brass & Copper engineers, in cooperation with the laboratory of the American Cyanamid Company who produce the beetle powder from which this bowl is made, began this development of plastics for lighting, which has continued up to the present time. Much progress has been made in three years—the overall efficiency has been raised from 82% to 87%.

Some of the outstanding features of plastic are: The exceedingly light weight—75% lighter than glass; the fact that it is practically unbreakable; it blends into the ceiling and has no black areas, no bright spots and no dark rings—gives a soft pleasant sunny light, and, if properly hung, will distribute light evenly.

Available in ceiling or hanging type and comes complete with plastic bowl, holder, stem and canopy.

Has Underwriters' Labels.

The hanging type has a concealed swivel in stem for self-aligning. Stem construction is such that fixture can be shortened on the job.

Fixtures come wired as follows: 200-300 medium base, No. 16 slow burning Deltabeston; 300-500 Mogul base, No. 16 asbestos covered Deltabeston; 750-1000 Mogul base, No. 14 asbestos covered Deltabeston.

Light output, not less than 86%. Surface brightness of bowl, less than 2 footcandles per square inch.

Metal parts are brass, 22 gage or more.

Furnished in satin chromium finish. Special finishes on order.

No.	1579	1544	1546	*1549	*1543
Each	\$3.75	9.00	10.05	15.00	25.50
Suspension	100-W.	†200-300-W.	†200-300-W.	300-500-W.	750-1000-W.
Socket	Ceiling Medium	Ceiling Medium	Stem Medium	Stem Mogul	Stem Mogul
17-Ga. Stem Diam.	1/2 in.	1/2	1/2	1/2	5/8
Canopy	5 in.	5	5	5	6
Bowl Diam.	9 in.	16	16	19	23
Length Over All	9 1/2 in.	14 1/2	28	33 1/2	46 1/2
Standard Package	6	4	4	4	4
Ship. Wt. per Std. Pkg.lb.	14	16	16	23	31

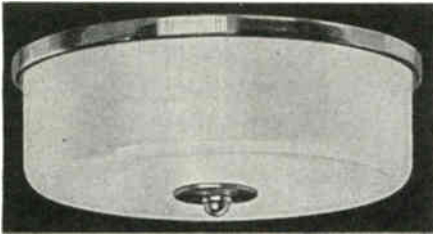
*Lampshield can be supplied; also a socket and switch for two-filament lamp.

†Not suitable for use with 300-w. medium base skirted lamp.



Graybar Ceiling Units

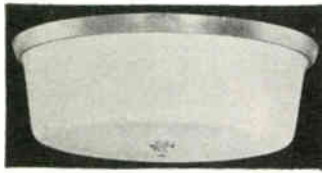
Brass Shallow Band



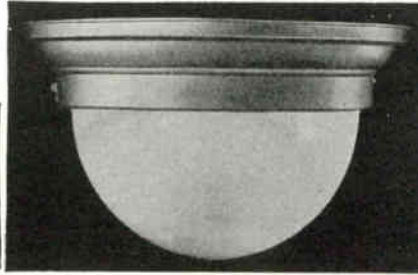
Standard finish is Silvertint.

No.	Each	White Monax Glass Inches	Polished Chromtint Band Inches	Sockets	Wattage Lamps
1738	\$3.75	8x2½	8½	2	2-40
1739	5.40	10x3	10½	2	2-100
1808	8.25	12x4	12½	2	2-100
1809	10.50	14x4½	14½	3	3-100

Graybar Ceiling Fixtures



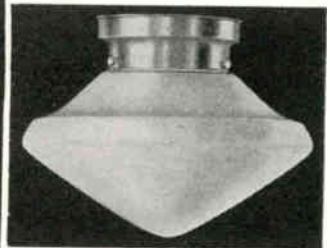
No. 1230



No. 1208



No. 11077



No. 11076

Designed to provide scientific illumination, simple mechanical operation—safety and security in the methods of holding the glass units. Has keyless type socket. Made of brass.

Fixture comes wired with No. 18 or 16 wire, depending on size of lamp.

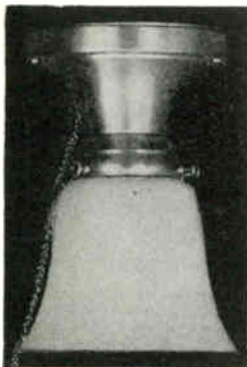
Nos. 1230, 1232, 1545, and 1548 are furnished in satin chromium finish; No. 1208, brushed brass; No. 1209, statuary bronze; No. 11077, copper brushed brass; and No. 11076, polished chromium.

No.	*1230	*1232	*1545	*1548	*1208	*1209	†11077	‡11076
Each	\$7.50	9.00	7.50	9.00	4.80	5.55	1.20	1.65
No. of Lights	2	2	2	2	2	2	1	1
Type Holder	Close-Up	Close-Up	Close-Up	Close-Up	Hinged Band 11½" Diam. 2½" Depth	Hinged Band 13½" Diam. 2½" Depth	Ceiling Band Screw Type	Ceiling Band
Diameter Fitter...inches	10	12	10	12	8	10	4	4
Diameter Globe...inches	4	4½	4¾	4¾	8	10		
Depth Globe...inches					6	7		

Graybar Beam Lights

Made of brass. Fixture comes wired.

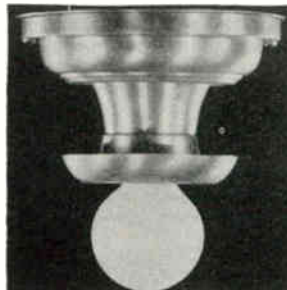
Nos. 1320 and 1321 are furnished in polished chromium or white enamel; No. 1315, polished chromium or English bronze; Nos. 1089, 1088, 1290, and 1291, polished chromium or ivory.



No. 1320



No. 1315



No. 1088



No. 1290

No.	1320	1321	1315	1089	1088	1290	1291
Each	\$2.70	2.55	1.65	1.65	1.50	1.95	2.25
Type Socket	Pull Chain	Keyless	Keyless	Pull Chain	Keyless	Keyless	Pull Chain
Diameter of Fitter...inches	2¼	2¼	4¾	5½	5½	7	7
Diameter of Canopy...inches	4½	4½	5½	6	6		
Height...inches	9	9	5½	6	6		

*Complete with glassware. †No. 608 globe. ‡Supplied with knockout switch for canopy. §Nos. 88, 66, and 99 globes recommended.

No. 8331 Faries Ceiling Lights



Diameter, 6 inches; depth, 1½ inches. Furnished with brass shell socket with strap attached; 6-inch leads.
 No. 8331, Brushed Brass each \$1.50
 No. 8331A, Colonial Brass each 1.50
 No. 8331B, Polished Chromium each 1.85

Faries Ceiling Bands



Brass ceiling band 6¼ inches in diameter and 2 inches deep. Furnished with two screw holes, without strap.

No. 635—For 3¼-Inch Glass

No. 635H, Brushed Brass per 100 \$26.00
 No. 635P, Dipped and Lacquered per 100 25.00

No. 636—For 4-Inch Glass

No. 636H, Brushed Brass per 100 \$28.00
 No. 636P, Dipped and Lacquered per 100 27.00

Faries Outlet Box Covers



For ¾-inch iron pipe thread x ¼-27 connector. All thread wire, ¼-27, is 3 inches long. With decorative knob.

No. 2977—With 4½-Inch Canopy

No. 2977, Brushed Brass per 100 \$37.50
 No. 2977A, Ivory per 100 37.50

No. 2978—With 5-Inch Canopy

No. 2978, Brushed Brass per 100 \$40.00
 No. 2978A, Ivory per 100 40.00

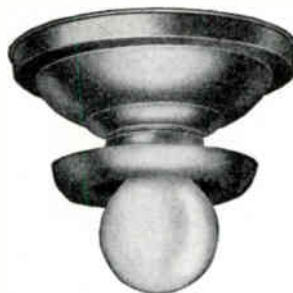
Faries Steel Offset Bridge Straps



Tapped 8-32 at both ends. Slotted to fit ears of 3 or 4-inch outlet box. Center hole, 1⅛ inch to slip fixture stud.

No.	8522	7806B	7806	7806D
Per 100	\$5.50	5.50	5.50	7.50
Length	4½ inches	5½	6	6¾
Length Screw Hole Centers. in.	4⅞	5⅞	5½	6½

No. 8328 Faries Ceiling Lights



For ball lamp. Diameter, 5⅝ inches; depth, 3 inches. Furnished with strap.

No. 8328B, White Enamel per 100 \$40.00
 No. 8328D, Chrome Polished per 100 55.00
 No. 8328E, Polished Brass per 100 50.00
 No. 8328F, Normandie Bronze per 100 50.00
 No. 8328C, Ivory per 100 40.00
 No. 8328G, Brushed Nickel per 100 50.00

No. 8298 Faries Ceiling Bands



For 6-inch glass. Used with receptacle; made of heavy spun brass. Diameter, 9¼ inches; depth, 2 inches.

Furnished with two screw holes, without strap.
 No. 8298G, Brushed Brass per 100 \$90.00
 No. 8298H, Black per 100 90.00
 No. 8298I, Unfinished per 100 70.00

No. 1024 Faries Drop Cord Canopies



Drop cord canopy with large eyelet and two screw holes. Diameter, 5⅝ inches; depth, 2¼ inches.

No. 1024, Brushed Brass per 100 \$35.00
 No. 1024A, White Enamel per 100 35.00
 No. 1024B, Ivory per 100 35.00

No. 811 Faries Heavy Steel Offset Bridge Straps



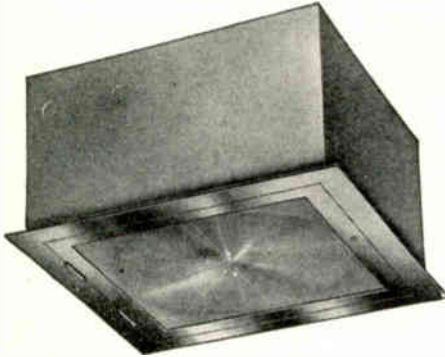
Tapped 8-32 at both ends. Slotted to fit ears of 3 or 4-inch outlet box. Offset 1⅝ inch deep notched to accommodate porcelain receptacle.

No. 811 per 100 \$10.00

Wheeler Flush Lighting Units

Single Gang Units

Two Gang Units



No. 1860, Single Gang Unit

tion of building before it is plastered. Each box is equipped with compartment in which all wiring can be done.

Front consists of door and trim constructed of 12-gage steel and fastened to box by means of four concealed screws with adjustable toggle nuts which make front self-aligning.

Door is cut out to take standard size lens and is provided with a means of holding lens in place. Door is fastened to trim by two hinges and is provided with means of locking by a screw on opposite side from hinges.

Boxes and trims finished aluminum bronze inside and outside unless otherwise specified.

Box portion is constructed of 16-gage steel welded together at corners.

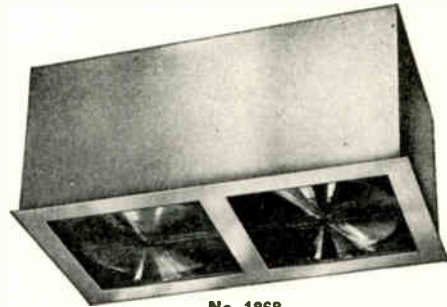
No.	Each	Lamp Position	Lamp Watts	Lens Size In.	Trim In.	Box, INCHES	Depth
1860	\$23.00	Vertical	25-60	6½	9¾	8½	8
1861	17.00	Horizontal	25-60	6½	9¾	8½	4½
1862	24.00	Vertical	75-150	8½	12	10½	11½
1863	20.00	Horizontal	75-150	8½	12	10½	5½
1864	31.00	Vertical	200-300	12	15½	14¼	13
1865	27.00	Horizontal	200-300	12	15½	14¼	8

If lens is required for greater diffusion, suffix No. with letters VFD and add \$1.00 to price.

Special chromium-plated reflector for use in any of above boxes, \$3.00 extra for 6½ and 8½-inch sizes; \$4.00 for 12-inch size.

Wire guard for 12-inch plate only, \$3.00 extra.

Designed to set into ceiling or wall so that front will be flush with finished plaster. Box portion is equipped with adjustable flanges on outside so that box can be fastened into position during construction.



No. 1868

special box can be provided with removable top for relamping from above.

Box is made of 20-gage steel. Front is made of 12-gage steel and is fastened to box by four concealed screws with toggle nuts, thereby making front self-aligning. Baffles are provided on each front to prevent any light leakage around trim. Front can be furnished in any sprayed finish.

No.	*Each	Type of Front	Lamp Position	Lamp Watts	Lens Size In.	Trim In.	Box, INCHES	Depth
1868	\$30.00	Fixed	Vertical	60-100	6½	16½x8¾	15½	7¾ 10½
1869	36.00	Fixed	Vertical	75-150	8½	19½x10½	18¼	9¾ 11
1870	46.00	Fixed	Vertical	150-300	12	28 x14¼	26½	13¼ 12¾

*Does not include lamps.

Information on hinged fronts or removable top boxes upon application.

Four Gang Units

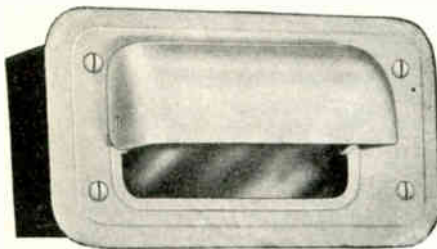
Can be furnished with either hinged or fixed fronts as described above. Wire guards are available for these units when used in gymnasiums. When no other finish is specified, these units are finished in aluminum bronze inside and outside.

No.	*Each	Type of Front	Lamp Position	Lamp Watts	Lens Size In.	Trim Inches	Box, INCHES	Depth
1872	\$75.00	Fixed	Vertical	150-200	12	27¼x27¼	25¾	25¾ 11¾
1873	76.00	Fixed	Vertical	300	12	27¼x27¼	25¾	25¾ 12¾

*Does not include lamps.

Information on hinged fronts or removable top boxes upon application.

No. 1878 Visor Type



The visor type night light is designed to furnish direct or indirect light over the bed or table in hospital sick rooms. The visor swings up or down and is designed to remain in any position in which it is placed.

Box is made of 14-gage steel painted aluminum bronze inside and outside. Dimensions of box: 6 inches long, 3 inches wide, and 3¼ inches deep. Face plate is made of cast aluminum and is equipped with a clear glass panel over which the visor swings. Face 6¾x3¾ inches. Face plate and visor are finished in baked white enamel.

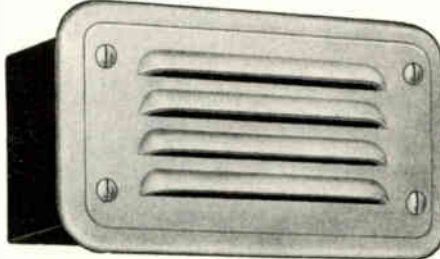
Lamp watts, 25-40.

Can be furnished with toggle switch at an additional cost.

No. 1878.....each \$7.00

Wheeler Hospital Night Lights

No. 1877 Louver Type



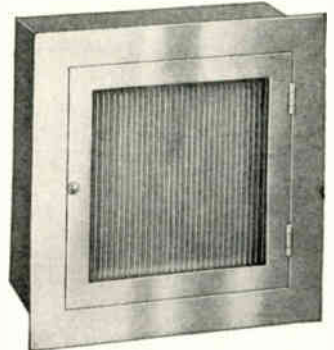
The louver type night light is designed for hospital sick room lighting. These units are usually mounted on the wall 18 inches or 2 feet above the floor. The louvers in the face plate obstruct the light from shining into the patients' eyes, but do not prevent the light from illuminating the floor of the room.

The box is made of 14-gage steel and is finished aluminum bronze inside and outside. Dimensions of box: 6 inches long, 3 inches wide, and 3¼ inches deep. The face plate is made of cast aluminum and is finished in baked white enamel. Face, 6¾x3¾ inches. A clear glass panel is provided behind the louvers to prevent dust from collecting in the box.

Lamp watts, 25-40.

No. 1877.....each \$5.00

No. 1879 Lens-In-Door Type



The lens-in-door type is a corridor night light designed to set flush with the finished wall.

The box is made of 16-gage steel with welded joints and is finished aluminum bronze inside and outside. Dimensions of box: 8½ inches long, 8½ inches wide, and 3¼ inches deep. The front consists of door and trim made of 12-gage steel and finished in baked white enamel. Trim, 9¾x9¾ inches. The lens is a Spredlite diffusing type.

Lamp watts, 25-100.

No. 1879.....each \$15.00

Graybar Exit Units



No. 700, Flush—Guarded
No. 115, Surface—Guarded
No. 722, Flush—Plain
No. 117, Surface—Plain

Standard glass—red letters on opal glass.

Optional—white letters on red, green, or black background; green or black letters on white background.

Boxes have knockouts for 1/2-inch conduit.

Standard finish of box is black.



No. 736, Flush—Cast Front
No. 746, Surface—Cast Front Hinged
No. 726, Surface—Plain Hinged

Surface Type

No.	Each	Style	Letter Inches	Face Inches	Depth In.	Lights
115-5	\$8.10	Single Face—Guarded	5	6 x12	3	1
115-6	10.11	Single Face—Guarded	6	7 3/4 x12	3	1
117-5	4.98	Single Face—Plain	5	6 x12	3	1
117-6	5.82	Single Face—Plain	6	7 3/4 x12	3	1
726-5	10.11	Single Face—Plain Hinged	5	13 x 7	3	1
726-6	11.67	Single Face—Plain Hinged	6	13 x 8 3/4	3	1
746-5	12.72	Single Face—Cast Hinged	5	14 x 8 1/2	3 1/2	1
746-6	14.52	Single Face—Cast Hinged	6	14 1/8 x 9 7/8	3 1/2	1

Flush Type

No.	Each	Style	Letter Inches	Face Inches	Insert Inches	Depth In.	Lights
700-5	\$7.26	Flush—Guarded	5	8 x14	6 1/2 x12 1/2	3	1
700-6	8.04	Flush—Guarded	6	9 3/4 x14	8 1/4 x12 1/2	3	1
722-5	6.36	Flush—Plain	5	8 x14	6 1/2 x12 1/2	3	1
722-6	7.26	Flush—Plain	6	9 3/4 x14	8 1/4 x12 1/2	3	1
736-5	9.09	Flush—Cast	5	8 x14	6 1/2 x12 1/2	3	1
736-6	10.92	Flush—Cast	6	9 3/4 x14	8 1/4 x12 1/2	3	1

Graybar Wall and Ceiling Exit Units



No. 209, Wall Type

Has 4-inch red lettering on two sides. Wired complete with strap, screws and knurled nuts.

Standard finish is statuary bronze.



No. 210, Ceiling Type

No.	Each	Style	Diameter Canopy Inches	Depth Overall Inches	Lights
209	\$6.90	Wall	7 1/2	8 3/4	1
210	6.90	Ceiling	7 1/2	8 3/4	1

Graybar Exit Globes



Provides an exit sign, and also a spot-light effect downward.

Available in ruby glass, with matt white spray finish on the inside, and 3-inch letters.

Also furnished in green glass, without extra charge.

No.	Each	Size Globe Inches	Fitter Inches	No. in Std. Pkg.	Shp. Wt., Lb. Pkg.
843R-1	\$2.40	5 3/4 x 4 1/4	3 1/4	6	12
844R-1	3.45	7 1/2 x 6 1/4	4	8	27

Wheeler Exit Signs



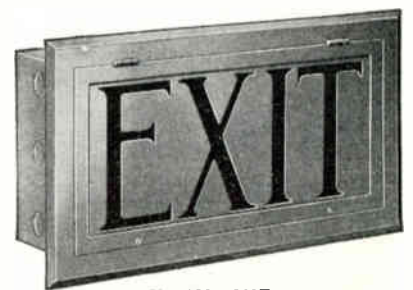
No. 2332

These signs meet the requirements of modern theaters, auditoriums, and public buildings. Available in a variety of designs, single-faced, double-faced, and triangular, with 5, 6, or 8-inch letters to comply with state

so specified on order, without additional charge.

Stenciled exit signs are recommended for use wherever possible. The letters are stenciled Old Roman and are backed with imported ruby glass, which is sandblasted on the back to give even, diffused light.

When the sign is lighted, only the red letters "Exit" can be seen, with no undesirable light around the letters.



No. 2331-SHF

laws. Wire guards also available for Wheeler Exit Signs.

Made of heavy gage sheet iron, finished aluminum bronze inside and dark bronze outside. Signs can be finished outside in any color to match woodwork or wall finish, if desired and

Standard Single-Faced Exit Signs

Stenciled Letters Backed with Imported Ruby Glass

Height Letter Inches	Surface Type			Flush Type				
	Box, Inches Length	Each	Depth Box In.	No.	Each	Depth Box In.		
5	14	7	2330	7.00	3	2331	\$7.60	4
6	14	8	2334	10.75	3	2333	11.00	4
8	14	10	2336	13.25	3	2335	13.50	4

Stenciled Letters Backed with Imported Ruby Glass With Steel Moulding

Height Letter Inches	Surface Type			Flush Type				
	Box, Inches Length	Each	Depth Box In.	No.	Each	Depth Box In.		
5	14	7	2339	\$9.90	3	2332	\$10.50	4
6	14	8	2344	13.25	3	2337	13.50	4
8	14	10	2345	15.75	3	2338	16.00	4

Listings above cover only steel boxes with painted finish. Any of above types can be furnished in bronze.

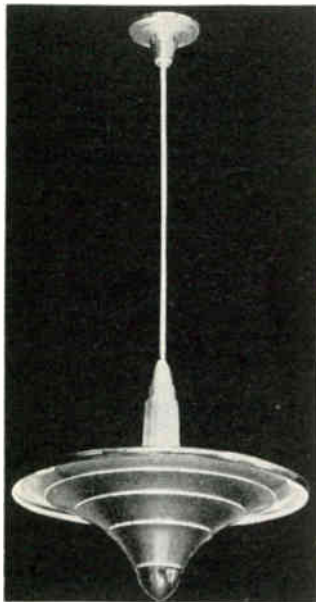
Flush Type Exit Signs with Hinged Fronts

Height Letter Inches	Steel Front			Bronze Front			
	Box, Inches Lgth.	Ht.	Dpth.	No.	Each	No.	Each
5	14	7	4	2331-SHF	\$13.50	2331-BHF	\$20.50
6	14	8	4	2333-SHF	17.00	2333-BHF	24.00
8	14	10	4	2335-SHF	19.50	2335-BHF	26.50

Height Letter Inches	Steel Front			Bronze Front			
	Box, Inches Lgth.	Ht.	Dpth.	No.	Each	No.	Each
5	14	7	4	2364-SHF	\$13.40	2364-BHF	\$20.40
6	14	8	4	2365-SHF	15.00	2365-BHF	22.00
8	14	10	4	2366-SHF	17.50	2366-BHF	24.50

Curtis Eye-Comfort Luminaires

Edge-Ray



Elegance and refinement distinguish Edge-Ray luminaires among indirect lighting fixtures. The method of self-illumination of the bowl exterior, an exclusive Edge-Ray feature, is accomplished so that the bowl appears to be composed of concentric circles of light.

Made of Alzak aluminum. Lustrous aluminum finish with polished highlights.

No. 1200

For use with 200-watt medium screw base lamp. Bowl diameter, 17 inches; depth, 6 inches; suspension, 30 inches.

No. 1200.....each \$20.80

No. 1250

For use with 500 or 300-watt Mogul screw base lamp. Bowl diameter,

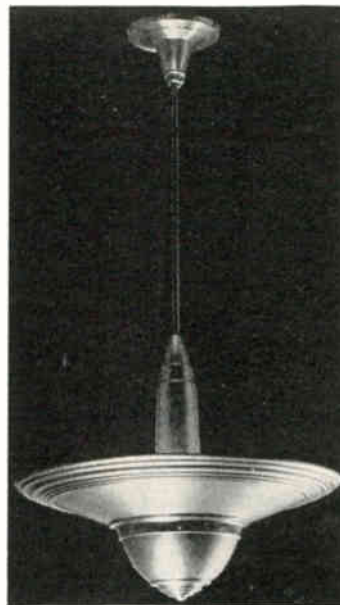
21 $\frac{3}{8}$ inches; depth, 8 inches; suspension, 36 in.
No. 1250.....each \$26.90

No. 1270

For use with 750 to 1500-watt Mogul screw base lamp. Bowl diameter, 27 $\frac{1}{2}$ inches; depth, 11 inches; suspension, 48 inches.

No. 1270.....each \$40.80

Winner



Efficiency marks this tailored design as outstanding. The Winner bowl contains a silver mirror X-Ray reflector which provides the even distribution and high light output constituting the best quality indirect illumination. The straightforward appearance of Winner harmonizes with modern office and school interiors.

Made of Alzak aluminum. Bronzed aluminum reflecting surface with silver mirror X-Ray reflector.

Bowl diameter, 19 $\frac{1}{2}$ inches; depth, 7 inches; suspension from top of bowl to ceiling, 36 inches.

No. 5090

For use with 500 or 300-watt Mogul screw base inside frosted lamp.
No. 5090.....each \$20.80

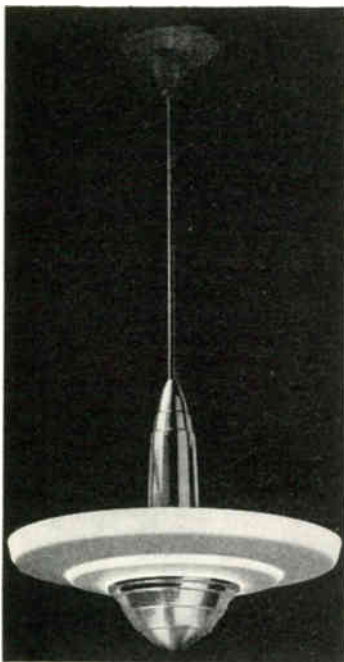
No. 5091

For use with 750 to 1000-watt Bipost lamp. A 500-watt Bipost lamp can be used by lowering Bipost socket 1 $\frac{1}{2}$ inches within socket cover; spacer supplied.

No. 5091.....each \$24.70

Curtis Economy Line Luminaires

No. 5505, Halo



Halo adds warmth or coolness to lighting effects with no impairment to lighting performance. A small portion of light is diffused through the colored bowl while the Lunax reflector cup directs most of it upward for indirect lighting.

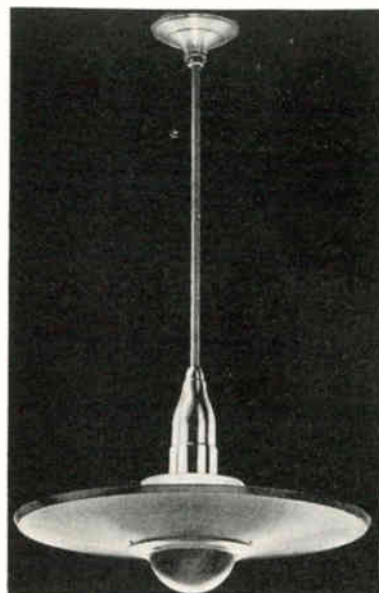
For use with 500 or 300-watt lamp.

Made of Lunax aluminum. Polished aluminum hanger and metal cup. Orange or empire yellow opal glass bowl. Color is specially fired on glass bowls, and is permanent and true.

Bowl diameter, 17 $\frac{3}{4}$ inches; depth, 6 inches; suspension, 36 inches.

No. 5505..each \$25.70

No. 1025, Quoit



Quoit has a distinctive, smooth beauty. This shallow design is sturdily constructed. A single conical lamp neck shield forms part of the fixture, and completely conceals the lamp neck from view under normal installation conditions. A second shield will be provided for low ceiling installations (no charge) when specified on order.

For use with the 500 or 300-watt Mogul base p.s. inside frosted lamp.

Made of Alzak aluminum. Satin aluminum finish with polished bands.

Bowl diameter, 20 inches; depth, 4 $\frac{1}{2}$ inches; suspension from top edge of bowl to ceiling, 36 inches.

No. 1025.....each \$15.60

Alabax Porcelain Lighting Fixtures

Alabax Porcelain Lighting Fixtures will not tarnish, rust, stain or change their color. They are easy to clean—soap and water restore their original luster.

These fixtures are approved by the National Board of Fire Underwriters' Laboratories. An unusual degree of protection is afforded because the porcelain is a complete insulator.

All Alabax Fixtures with pull control are protected against damage by a snub, which takes the strain of unusual or unnecessary pulling or abuse. The chain or cord can be broken without damage to the pull mechanism.

Alabax Fixtures are supplied in several attractive glazes: white, jet black, ivory and light green. The colors in these glazes cannot change—they are permanently fired in at a temperature of approximately 2300°F. The glaze becomes an integral part of the fixture, and is not subject to peeling or change in color.



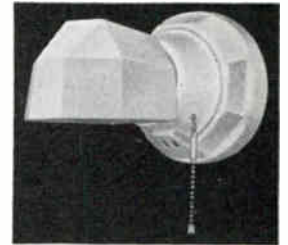
No. AL-2107



No. AL-2401



No. AL-2108. Length, 6¾ inches; width, 4¾ inches. Pull, with convenience outlet. White.....each \$2.31
Color.....each 2.76



No. AL-9234

Diameter, 5½ inches. With convenience outlet and glass. No. AL-9234. Pull. White.....each \$2.70
Color.....each 3.30
No. AL-9236. Keyless. White.....each \$2.55
Color.....each 3.15

Diameter, 5¼ inches. No. AL-2106. Pull, with short chain and long cord. White.....each \$1.35
Color.....each 1.80
No. AL-2107. Keyless. White.....each \$1.20
Color.....each 1.65

Diameter, 5½ inches. No. AL-2400. Pull, with long cord. White.....each \$1.35
Color.....each 1.80

No. AL-2401. Keyless. White.....each \$1.20
Color.....each 1.65



No. AL-859

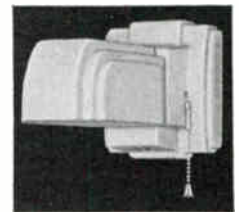
Diameter, 4½ inches. No. AL-859. Pull, short chain and long cord. White Only.....each \$2.10
No. AL-898. Keyless. White Only.....each \$1.17



No. AL-3140. Diameter 5⅝ inches. Keyless. Ivory.....each \$.90



No. AL-3100. Length, 6⅝ inches; width, 4 inches. Pull, with convenience outlet. White.....each \$1.86
Color.....each 2.31



No. AL-2380

Length, 5 inches; width, 4½ inches. With convenience outlet and glass.

No. AL-2380. Pull. White.....each \$2.85
Color.....each 3.30
No. AL-2382. Keyless. White.....each \$2.70
Color.....each 3.15

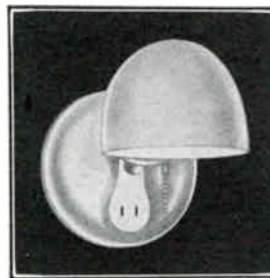


No. AL-2007 ND

Diameter, 4¾ inches. No. AL-2007 ND. Pull, with short chain, long cord. White.....each \$1.20
Color.....each 1.65
No. AL-2011 ND. Keyless. White.....each \$1.05
Color.....each 1.50



No. AL-2300. Diameter, 5½ inches. Keyless, with glass. White.....each \$3.00
Color.....each 3.45



No. AL-990

Diameter, 5⅝ inches. With convenience outlet and 2¼-inch shade holder; no glass. No. AL-990. Pull. White.....each \$2.40
Color.....each 3.00
No. AL-980. Keyless. White.....each \$2.10
Color.....each 2.70



No. AL-3130. Height, 6¼ inches; width, 3½ inches. Keyless. White.....each \$3.48

Curtis X-Ray Show Window Reflectors

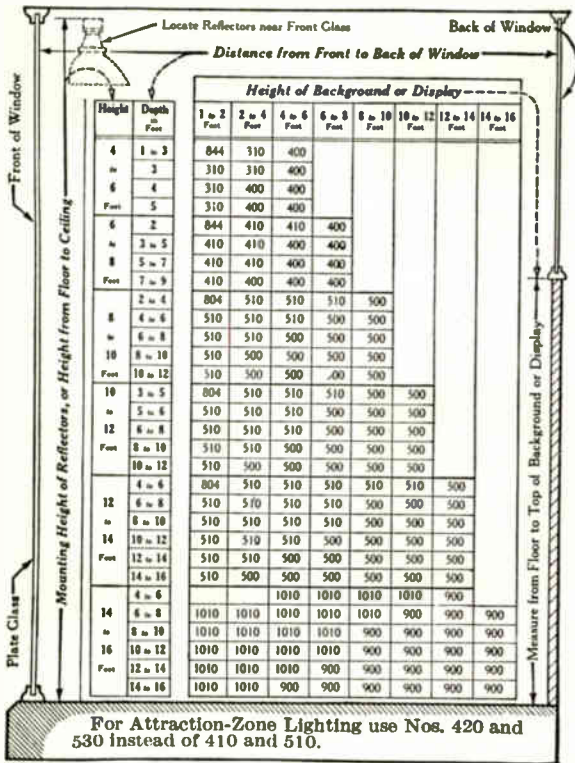
Planning Show Window Lighting

Show windows are usually classified according to their size. For good general lighting, deep windows require distributing reflectors; shallow windows, semi-concentrating types; very shallow windows, concentrating types.

The number of reflectors to use for lighting a window is influenced by the brightness of neighboring windows, the intensity of street illumination, goods displayed, color of background, as well as the merchant's realization of the advertising and selling value of bright, well-lighted windows. In general, the following center-to-center spacing is suggested:

- Large Cities, Business District 12 Inches
- Large Cities, Suburban District 12 to 18 Inches
- Small Cities 12 to 18 Inches
- Towns 15 to 24 Inches

Selecting the Correct Reflector



It is easy to determine the proper reflector to use from the table above. First, locate in the left column, "Height," the height above the floor at which the reflectors will be mounted. Next, in the second column, find the depth from back to front of window. Then move along this line to the column under "Height of Background or Display" corresponding to that of the window. The reflector designated in this space is the one to use. Example: for a show window 9 feet high, 5 feet deep, and with background 5 feet high, No. 510 Reflector should be used.

Attraction-Zone Lighting

In many shallow windows, it is desirable to place more light on the lower portion of the display than in the rest of the window. This kind of illumination is known as Attraction-Zone Lighting, for when this area is brightly lighted, it attracts the average passer-by to the entire display. Attraction-Zone X-Ray Reflectors concentrate 35 to 50 per cent more light on this vital selling zone than do ordinary semi-concentrating type reflectors.

For show windows in which Attraction-Zone Lighting is desired, use Nos. 420 and 530 instead of Nos. 410 and 510 as indicated in the above table.

No. 310 Curtis Favorite X-Ray Show Window Reflectors

Semi-Concentrating Type—For Shallow Windows
For 100-Watt Lamp



Diameter, 7 inches; height without holder, 5 5/8 inches. Standard package, 20. Weight, 26 pounds.

No. 310 each \$2.95

ACCESSORIES: No. 12100 holder (Form 0, 2 1/4 inches), screw engaging, for CurtiStrip or X-Ray sockets; No. 14310 finishing flange; and plaster ring, available on special order.

No. 844 Curtis Comet X-Ray Show Window Reflectors

Concentrating Type—For Very Shallow Windows
For 150 or 100-Watt Lamp



Diameter, 8 5/8 in.; height without holder, 4 3/8 inches. Standard package, 12. Weight, 19 pounds.

No. 844 each \$3.25

ACCESSORIES: Nos. 10300, 10400 or 10500 holder (Form A, 3 1/4 inches), for 100-watt lamp—No. 10300 holder with No. 10012 extension ring for 150-watt lamp; No. 10517 finishing flange; No. 104027 plaster ring; and No. 12844 louver (control-ring type) for use only in combination with No. 10517 flange.

Curtis X-Ray Show Window Reflectors

Distributing Type—For Deep Windows



No. 400

Furnished with No. 10668 adjustable holder (Form B, 3 3/4 inches). Fits standard porcelain, CurtiStrip or X-Ray sockets with shade holder groove.

No. 400 Jack

For 150 or 100-Watt Lamp
Width, 8 1/2 inches; depth, front to back, 8 inches; height with holder, 8 3/4 in. Standard package, 10. Weight, 21 pounds.

No. 400 each \$4.00

ACCESSORIES: No. 11400 finishing flange; No. 12400-N louver; and No. 440 color-ray.

No. 500 King

For 300, 200 or 150-Watt Medium Base Lamp
Width, 10 inches; depth, front to back, 10 1/2 inches; height with holder, 10 inches. Standard package, 10.

No. 500, Weight of Std. Pkg., 30 pounds each \$4.50

ACCESSORIES: No. 11500 finishing flange; No. 12500-N louver; and No. 55 color-ray.

Semi-Concentrating Type—For Shallow Windows

Furnished with No. 10668 adjustable holder (Form B, 3 3/4 inches). Fits standard porcelain, CurtiStrip or X-Ray sockets with shade holder groove.

No. 410 Jill

For 150 or 100-Watt Lamp
Width, 9 3/8 inches; depth, front to back, 9 1/2 inches; height with holder, 8 1/2 inches.

Standard package, 10. Weight, 25 pounds.

No. 410 each \$4.00

ACCESSORIES: No. 11410 finishing flange; No. 14006 plaster ring; Nos. 12410-N and 12410-P louvers; and No. 441 color-ray.

No. 510 Queen

For 300, 200 or 150-Watt Medium Base Lamp
Width, 10 1/2 inches; depth, front to back, 10 3/4 inches; height with holder, 10 1/4 inches. Standard package, 10.

No. 510, Weight of Std. Pkg., 38 Pounds each \$4.50

ACCESSORIES: No. 11510 finishing flange; No. 14007 plaster ring; Nos. 12510-N and 12510-P louvers; and No. 55 color-ray.

No. 900 Curtis Giant X-Ray Show Window Reflectors

Distributing Type—For Deep Windows
For 500 or 300-Watt Lamp



Furnished with No. 10413 holder (5-inch X-Ray); fits X-Ray mogul sockets only. No. 8300-B socket (1/2-inch back outlet) is also included; with 3/8-inch reducer.

Width, 13 inches; depth, front to back, 13 inches; height with holder and socket, 13 3/4 inches.

Standard package, 4.

Weight, 26 pounds.

No. 900..... each \$9.75
ACCESSORIES: No. 10432 finishing flange; No. 14008 plaster ring; No. 12900-N louver; and No. 99 color-ray.

No. 804 Curtis Aladdin X-Ray Show Window Reflectors

Concentrating Type—For Very Shallow Windows
For 200-Watt Lamp



Diam. 10 1/2 in.; height without holder, 6 1/2 in. Standard package, 12. Weight, 23 pounds.

No. 804..... each \$4.75

ACCESSORIES: No. 10667 holder (Form X, 3 3/4 inches)—fits standard porcelain, X-Ray or CurtiStrip sockets with shade holder groove;

No. 10417 finishing flange; No. 14035 plaster ring; No. 13351 louver (control-ring type); and No. 10556 color-ray.

No. 1010 Curtis Blimp X-Ray Show Window Reflectors

Semi-Concentrating—For Attraction-Zone Lighting
For 500 or 300-Watt Lamp



Furnished with No. 10010 holder (3 3/4-inch X-Ray); fits X-Ray mogul sockets only. No. 8300-B socket (1/2-inch back outlet) is also included; with 3/8-inch reducer.

Diameter, 13 inches; height with holder and socket, 12 3/8 inches.

Standard package, 4.

Weight, 26 lbs.

No. 1010..... each \$9.25

ACCESSORIES: No. 14110 finishing flange; No. 14111 plaster ring; No. 12110 louver (U type); No. 10870 color-ray.

Curtis X-Ray Show Window Reflectors

Semi-Concentrating—For Attraction-Zone Lighting



Furnished with No. 10668 adjustable holder (Form B, 3 3/4 inches). Fits standard porcelain, CurtiStrip or X-Ray sockets with shade holder groove.

No. 420 Master

For 150 or 100-Watt Lamp

Diameter, 8 5/8 inches; height with holder, 7 1/8 inches.

Standard package, 10.

Weight, 20 pounds.

No. 420..... each \$3.59

ACCESSORIES: No. 10517 finishing flange; No. 14027 plaster ring; and No. 12420 louver (U type).

No. 530 Monarch

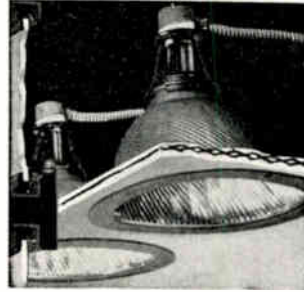
For 300, 200 or 150-Watt Medium Base Lamp

Diameter, 9 3/4 inches. Height with holder, 9 1/8 inches.

No. 530, Std. Pkg., 10; Weight, 28 Pounds..... each \$4.00

ACCESSORIES: No. 14026 finishing flange; No. 14028 plaster ring; and No. 12531 louver (U type).

Curtis Accessories for X-Ray Show Window Reflectors



Finishing flanges and plaster rings are used in recessing X-Ray reflectors above the show window ceiling. On wood or board ceilings, flanges only are used to finish off the opening and to support the reflector properly. When recessing is done in plaster ceilings, it is necessary to use a plaster ring as a ground to plaster up to and also as a base for mounting finishing flange.

Finishing Flanges

Substantially made of heavy gage metal, supplied unfinished. May be painted on the job to match window ceiling.

†MIN. DIMENSIONS, INCHES
Dist. of Socket to Back of Flange

No.	Each	For Reflector	Height	Spacing	Dist. of Socket to Back of Flange	Wt. Lb. Std. Pkg. of 10
14310	\$.40	310 Favorite...	7 5/8	9	3 1/4	3
11400	.90	400 Jack.....	10 1/4	10 1/2	3 3/4	15
*11410	.90	410 Jill.....	10 1/4	11 1/8	4 3/8	16
*10517	.45	420 Master.....	9 1/4	10 5/8	4 1/2	10
11500	1.05	500 King.....	11 5/8	12	4 3/8	22
*11510	1.05	510 Queen.....	11 3/4	12 1/2	5	24
*14026	.50	530 Monarch...	10 1/2	12 1/4	5 1/8	10
*10417	1.05	804 Aladdin...	11	13 1/4	6 5/8	24
*10417	1.05	810 Saturn.....	10	13 1/4	6 5/8	24
*10517	.90	844 Comet.....	7 3/4	10 5/8	5 1/16	16
*10432	1.15	900 Giant.....	15 7/8	15 3/8	5 3/8	26
*14110	1.10	1010 Blimp.....	13 5/8	15 1/2	5 1/2	26

*Plaster rings for use with these flanges listed below.

†Use flange for pattern to cut hole, or write for template.

When plaster rings are used, minimum spacing increases to the dimensions shown in the table below.

Plaster Rings

No.	Each	For Use with Finishing Flange and Reflector	Minimum Spacing	Distance	Wt. Lb. Std. Pkg. of 10
14006	\$.95	11410 and 410 Jill.....	12 1/2	12 5/8	20
14007	1.25	11510 and 510 Queen.....	13 3/4	14	24
14008	1.50	10432 for 900.....	16 1/8	16 1/4	26
14027	.80	10517 and 420, 844.....	10 5/8	11	10
14028	.85	14026 and 530 Monarch.....	11 3/4	12 3/8	10
14035	.85	10417 and 804, 810.....	13 1/4	13 3/8	10
14111	1.40	14110 for 1010 Blimp.....	15 1/2	15 7/8	26

‡The distance from front to back of plaster ring, measured on mounting screw hole centers.

Louvers

Standard louvers for concealing the light source may be easily installed in X-Ray reflectors. Louvers are snapped into the dimples of the reflector and held in place by spring clips. Louvers do not interfere with use of color-ray.

Types N and P are finished in gray; others, black.

Type N Louvers—Fins at Right Angles to Glass

No.	Each	For Use with	Wt. Lb. Each
12400-N	\$2.10	400 Jack.....	1
12410-N	2.10	410 Jill.....	1
12500-N	2.25	500 King.....	1
12510-N	2.25	510 Queen.....	1
12900-N	3.00	900 Giant.....	2

Type P Louvers—Fins Parallel to Glass

12410-P	\$2.10	410 Jill.....	1
12510-P	2.25	510 Queen.....	1

Circular Louver (Similar to Control Ring)
12844 \$2.85 844 Comet, Only Used with 10517 Flange..... 1

Type U Louvers—Semi-Circular Fins

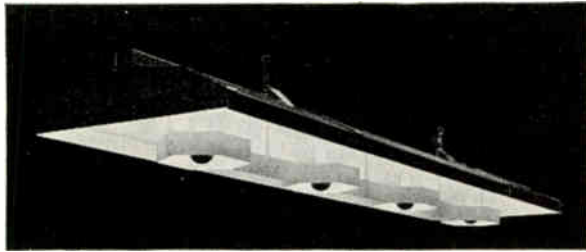
12110	\$2.85	1010 Blimp.....	2
12420	2.10	420 Master.....	2
12531	2.25	530 Monarch.....	2

Color-Ray

Each color-ray consists of metal frame with four sheets of colored gelatin: red, blue, green and amber.

Complete information and prices furnished on request.

Model B Curtis Light Hoods



Light Hood produces high intensity, shadowless, indirect lighting for industry. The Light Hood is a self-contained indirect lighting unit which can be used independently of structural conditions. It includes its own ceiling and wire-way. The specially treated white under-surface of the hood acts as a light reflecting ceiling and spreads the light evenly over the working area below.

This Light Hood is designed to form a continuous source of light, and may be assembled to any desired length.

A few suitable locations for Light Hood are:

Mass, or assembly line production in fine manufacture—radio, jewelry, instruments, tools, metal products, etc.

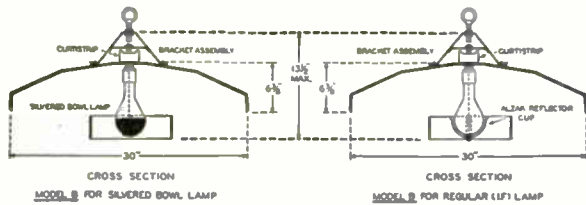
Work centers in the printing trade—over imposing stones, presses, proofreaders' tables, type cases, make-ready frames.

Inspection work in food industry—over sorting, grading, packing tables.

Operations in the textile and garment industry—over weaving, spinning, and knitting machines. Errors are rapidly checked in these fine operations. Over cutting and sewing tables.

Laboratory and undertaking work—in hospitals, research clinics, chemistry and physics laboratories; in embalming and autopsy rooms.

Engineering and arts—over drafting, designing, and tracing tables.



For Use with Silvered Bowl Lamps

No.	Each	Length Feet	No. of Lamps Required	Shipping Weight Pounds
1700	\$57.50	10	4	165
1775	45.65	7 1/2	3	125
1705	30.70	5	2	100

For Use with Regular (I.F.) Lamps

No.	Each	Length Feet	No. of Lamps Required	Shipping Weight Pounds
1710	\$68.95	10	4	165
1785	54.20	7 1/2	3	125
1715	36.65	5	2	100

Specifications shown in the illustration above apply to Model B when used with Regular (I.F.) Lamps except that individual Alzak Reflectors must be used with each lamp. No. 1777 Alzak Reflector, with supporting strap, should be used with each lamp. These may be ordered separately if it is desired to convert silvered bowl light hoods, which are already installed, for use with Regular (I.F.) Lamps. Specify quantity of reflectors needed.

CurtiStrip Wiring Channel



CurtiStrip is a large capacity (30 No. 14 rubber covered wires) wiring channel and raceway that offers unusual flexibility and a wide range of uses with its standardized fittings. Channel and cover are made of 20-gage cold rolled steel, cadmium plated. The patented snap-in flat cover permits outlets to be installed on any spacing. The cover, placed between sockets and fittings, is cut to length required with tinner's shears and snaps into the lips of the channel. Channel can be cut to any length with a hacksaw.

Channel and cover are regularly supplied in 10-foot lengths. Sections longer than 10 feet may be coupled together to form a continuous channel.

Size, 2 1/2 inches wide and 1 5/8 inches deep.

No.	Per Foot	Description	Std. Pkg. Feet
1	\$.40	Channel with Cover	100
1-A	.35	Channel Only	100
1-B	.10	Cover Only	100

CurtiStrip Fittings

Standard finish, cadmium plate.

No.	Each	Description	Std. Pkg.
*6	\$.20	End Cap for Closing Ends of CurtiStrip; Has 1/2-Inch Knockout	10
No. 6			
16	.30	Coupling for Connecting Two Pieces of CurtiStrip	10
No. 16			
†5	.40	Standard Porcelain Socket with Shade Holder Groove	50
No. 5			
†5-A	.40	Special Porcelain Socket, No Shade Holder Groove	50
No. 5			
19	.45	Nipple Attachment for 3/8-Inch Conduit or Fittings	10
No. 19, 19-BX			
19-BX	.30	Attachment for 1/2-Inch BX or Greenfield	10
No. 9			
9	.10	Strap for Holding CurtiStrip against Any Flat Surface	10
No. 24			
24	.90	Bracket Assembly	10
No. 2			
2	.80	Universal Hanger; Includes Two-Piece Perforated Hanger, 1 Strap, 4 Angle Brackets and 6 Bolts	10
No. 15			
15	.50	Hanger for Mounting CurtiStrip on Transom Bar or Side Wall	10

*No. 46 Extended End Cap should be used where wire connection is made through end of CurtiStrip; 25 cents each.
 †CurtiStrip Sockets can be spaced as close as 2 3/4 inches on centers. Their two-piece construction simplifies wiring.

Benjamin Turnlox Glassteel Diffusers

Complete with Hood, Reflector, and Globe

Listed by Underwriters' Laboratories



Provides soft, even light over a wide range of intensities. Direct and reflected glare is eliminated. Openings at the top of the reflector give ample light on the ceiling to relieve contrasts between the unit and its background.

Composed of 2 separable elements—a hood with a wiring terminal base and a complete assembly of reflector globe and lamp, which can be taken down as 1 piece for easy cleaning. A slight upward pressure against the reflector rim, less than a quarter turn to the left and reflector assembly is released from hood; to put up simply turn right and reflector is secured.

The terminal base in the hood is extremely simple to wire. Both wiring leads are brought in through the single center hole in the hood and terminal base.

A single lever on the side of the reflector controls the clamping or release of the globe in the unit.

Reflector is porcelain enameled steel with Benjamin Turnlox bayonet-lock coupling. Reflectors have lamp holders and bayonet plate.

Terminal base, Underwriters' listed, simple to wire. One type of terminal base is standard in outlet box, ceiling, and pendant type hoods and accommodates reflectors with medium or mogul base lamp holders.

Outlet box, angle, and pendant type hoods are provided. Outlet type has 1 hole slotted for easy attachment.

Reflectors are white porcelain enameled inside and out with blue-black bead. Spring clamp globe holder, hood, and bayonet plate are electro-plated.

Pendant Hood Type with Keyless Lamp Holder

Cast iron; tapped 1/2 inch standard; 3/4 inch when specified.

Size Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	With Opal Glass Globe		Wt. Lbs.	With Daylight Glass Globe		Wt. Lbs.
				Cat. No.	Each		Cat. No.	Each	
*150, 200	18	13 1/8	4	7201	\$9.30	50	7226	\$9.80	50
300, 500	20	15 5/8	4	7202	12.90	64	7227	13.65	64
750, 1000	24 1/2	18 3/8	2	7203	18.90	75	7228	20.65	75

Ceiling Hood Type with Keyless Lamp Holder

Cast iron; fits 3 1/4 or 4-inch standard round or octagonal outlet boxes of 1 1/2 inches or more in depth.

Size Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	With Opal Glass Globe		Wt. Lbs.	With Daylight Glass Globe		Wt. Lbs.
				Cat. No.	Each		Cat. No.	Each	
*150, 200	18	12 3/4	4	9201	\$9.30	52	9226	\$9.80	52
300, 500	20	15	4	9202	12.90	66	9227	13.65	66
750, 1000	24 1/2	18	2	9203	18.90	77	9228	20.65	77

Extra Reflectors for Easy Maintenance of System

Units complete, except for hood, are available for easy maintenance of system. When ordering, specify Catalog No. of complete unit with explanation "Less Hood" and deduct 80 cents from price.

*When using 150-watt lamp, socket extension No. 91 must be used to correctly position lamp in reflector.

Lamp Holders

Shock-absorbing lamp holders furnished in place of regular rigid lamp holder at an advance of 10 cents in price. When ordering, suffix regular reflector number with "SHB."

Benjamin Turnlox RLM Dome Reflectors

Porcelain Enameled Steel

Listed by Underwriters' Laboratories



Typical Curve

Construction permits reflector, together with lamp, to be taken down with one simple movement.

Unit consists of two separable elements; hood with wiring terminal base, and reflector to which is assembled lamp holding element. Contact is made at any point where reflector heel may be entered in hood. Polarization is by circular design of contacts.

One type of terminal base is standard in ceiling, angle, and pendant type hoods and accommodates reflectors with medium or mogul base lamp holders. Three types of hoods are provided, ceiling type outlet box, pendant and angle,



Bayonet Type Coupling Permits Taking Down Reflector and Lamp as a Complete Unit

side entrance type; outlet type has holes slotted for attachment.

Reflector is seamless porcelain enameled steel, green outside and white inside, with bayonet-lock coupling and porcelain lamp holder. Angle of cutoff, 12 1/2°. Hood and bayonet plate, electro-plated.

Pendant Type Hood with Reflector and Keyless Rigid Lamp Holder

Cast iron; tapped 1/2 inch standard, 3/4 inch if specified.

No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt., Lb.
7640	\$3.60	75	12	9 1/4	10	41 1/2
7641	3.60	100	12	9 3/4	10	42
7642	3.80	150	14	10 7/8	10	49
7643	4.40	200	16	12	10	56
7644	5.70	300, 500	18	13 3/4	5	43
7645	7.60	750, 1500	20	16 3/8	5	54

Ceiling Type Hood with Reflector and Keyless Rigid Lamp Holder

Cast iron; fits 3 1/4 or 4-inch standard outlet boxes of 1 1/2 inches or more depth.

No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt., Lb.
9640	\$3.60	75	12	8 7/8	10	44 1/2
9641	3.60	100	12	9 3/8	10	45
9642	3.80	150	14	10 1/2	10	52
9643	4.40	200	16	11 5/8	10	59
9644	5.70	300, 500	18	13 3/8	5	46
9645	7.60	750, 1500	20	16 1/4	5	57

Angle Type Hood with Reflector and Keyless Rigid Lamp Holder

Cast iron; tapped 1/2 inch standard, 3/4 inch if specified.

No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt., Lb.
3640	\$3.60	75	12	10 7/8	10	41 1/2
3641	3.60	100	12	10 3/8	10	42
3642	3.80	150	14	11 1/2	10	49
3643	4.40	200	16	12 5/8	10	56
3644	5.70	300, 500	18	14 3/8	5	43
3645	7.60	750, 1500	20	17 1/4	5	54

Prices do not include wires or lamps.

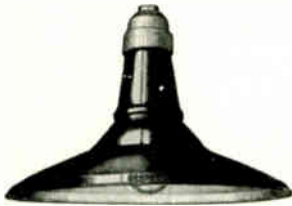
Lamp Holders

PULL CHAIN. Medium base only, 80 cents advance list.
 SELF-LOCKING. Medium base only, 50 cents advance list.
 SHOCK-ABSORBING. Medium or mogul base, 10 cents advance list.

Benjamin Turnlox Shallow Dome Reflectors

Porcelain Enameled Steel

Listed by Underwriters' Laboratories



Characteristic Distribution Curve

The reflector is seamless porcelain enameled steel with Benjamin Turnlox bayonet-lock coupling. The reflector includes Underwriters' listed standard porcelain lamp holder and a 3-point bayonet plate.

One type of terminal base is standard in ceiling, angle and pendent type hoods and accommodates reflectors with medium or mogul base lamp holders.

Three types of hoods are provided, ceiling type outlet box, pendent, and angle side entrance. Outlet type hood has one hole slotted for easy attachment.

Reflectors are porcelain enameled steel; green outside, white inside. Hood and bayonet plate are electro-plated to prevent corrosion.

Pendent Hood and Reflector with Keyless Rigid Lamp Holder

Pendent hoods are cast iron, tapped 1/2 inch standard; 3/4 inch if specified.

Cat. No.	Each	Size Lamp Watts	DIMEN., INCHES		Std. Wt., Lbs.	
			Diam.	Height	Pkg.	Std. Pkg.
7437	\$3.50	50, 60	12	8 1/4	10	40
7421	3.60	75, 100	12	9 1/4	10	40
7423	3.80	150	14	10 1/4	10	43
7425	4.40	200	16	11 1/4	10	55
7509	5.70	300, 500	18	13	5	49

Ceiling Type Hood and Reflector with Keyless Rigid Lamp Holder

Ceiling type hoods are of cast iron and fit 3 1/4 or 4-inch octagonal or round outlet boxes of 1 1/2 inches or more depth.

Cat. No.	Each	Size Lamp Watts	DIMEN., INCHES		Std. Wt., Lbs.	
			Diam.	Height	Pkg.	Std. Pkg.
9437	\$3.50	50, 60	12	7 7/8	10	43
9421	3.60	75, 100	12	8 7/8	10	43
9423	3.80	150	14	9 7/8	10	46
9425	4.40	200	16	10 7/8	10	58
9509	5.70	300, 500	18	12 5/8	5	52

Angle Type Hood and Reflector with Keyless Rigid Lamp Holder

Angle type hoods are cast iron. Tapped 1/2-inch standard; 3/4 inch when specified.

Cat. No.	Each	Size Lamp Watts	DIMEN., INCHES		Std. Wt., Lbs.	
			Diam.	Height	Pkg.	Std. Pkg.
3437	\$3.50	50, 60	12	8 7/8	10	40
3421	3.60	75, 100	12	9 7/8	10	40
3423	3.80	150	14	10 7/8	10	43
3425	4.40	200	16	11 7/8	10	55
3509	5.70	300, 500	18	13 5/8	5	49

Prices do not include wires or lamps.

Extra Reflectors

Fixtures, complete, except for hoods, are available for easy maintenance of the system. When ordering, specify catalogue number of complete fixture with the explanation "Less Hood," and deduct 80 cents from list price.

Lamp Holders

Pull chain lamp holders with straight inner pull for medium base only, 80 cents advance list. When ordering suffix regular reflector number with "PUL."

Self-locking lamp holder prevents unauthorized lamp removal, medium base only, 50 cents advance list. When ordering, suffix regular reflector number with "LOK."

Shock-absorbing lamp holders lengthen life, medium or mogul base. 10 cents advance list. When ordering suffix regular reflector number with "SHB."

Benjamin Turnlox Flat Cone Reflectors

Porcelain Enameled Steel

Listed by Underwriters' Laboratories



No. 7402



Typical Curve

Composed of two separable elements; a hood with a wiring terminal base, and a complete assembly of reflector and lamp which can be taken down as one piece for easy cleaning.

Automatic polarization is provided by the circular contact design and contact may be made at any point where bayonet plate can be inserted in the hood.

The pendent, ceiling and angle hoods are interchangeable. Made of cast iron, electro-plated.

The porcelain enameled steel reflector is green outside, reflecting white inside. Cut-off at 85°.

Lamp holder assembly consists of a three-point bayonet plate, lamp holder and attaching screws. Plate and screws are electro-plated.

Packed 10 in a standard package.

Pendent Type Hood with Reflector and Keyless Rigid Lamp Holder

Hoods tapped, 1/2 inch standard; 3/4 inch, if specified.

No.	Each	Size Lamp Watts	Diameter Inches	Height Inches	Shipping	
					Wt., Lb.	Std. Pkg.
7431	\$3.60	50, 60	14	7 1/2	43 1/2	
7411	3.60	75, 100	14	8 1/2	44 1/2	
7402	3.80	150	16	9 1/2	52	
7403	4.40	200	18	10 3/8	62 1/2	

Ceiling Type Hood with Reflector and Keyless Rigid Lamp Holder

Hoods fit 3 1/4 or 4-inch octagonal or round outlet boxes of 1 1/2 inches or more depth; also plaster covers with mounting holes on 2 3/4-inch centers.

No.	Each	Size Lamp Watts	Diameter Inches	Height Inches	Shipping	
					Wt., Lb.	Std. Pkg.
9431	\$3.60	50, 60	14	7 1/8	46 1/2	
9411	3.60	75, 100	14	8 1/8	47 1/2	
9402	3.80	150	16	9 1/8	55	
9403	4.40	200	18	10	65 1/2	

Angle Type Hood with Reflector and Keyless Rigid Lamp Holder

Hoods tapped, 1/2 inch standard; 3/4 inch, if specified.

No.	Each	Size Lamp Watts	Diameter Inches	Height Inches	Shipping	
					Wt., Lb.	Std. Pkg.
3431	\$3.60	50, 60	14	8 1/8	43 1/2	
3411	3.60	75, 100	14	9 1/8	44 1/2	
3402	3.80	150	16	10 1/8	52	
3403	4.40	200	18	11	62 1/2	

Prices do not include wires or lamps.

Extra Reflectors

Fixtures, complete except for hoods, are available for maintenance of the system. When ordering, specify catalog number of complete fixture with the explanation. Less Hood, and deduct 80 cents from price.

Lamp Holders

PULL CHAIN; with 6-foot cord extension. For medium base units, 80 cents advance list. To order, suffix fixture number with PUL.

SHOCK-ABSORBING; for medium base fixtures, 10 cents advance in list over fixtures with standard rigid holder. To order, suffix fixture number with SHB.

Benjamin Turnlox RLM Bowl Reflectors

Porcelain Enamelled Steel

Listed by Underwriters' Laboratories



No. 7169



Typical Curve

Has a hood with a wiring terminal base, and a complete assembly of reflector and lamp which can be taken down as one piece for easy cleaning. Automatic polarization is provided by the circular contact design and contact may be made at any point where bayonet plate can be inserted in the hood.

The pendent, ceiling and angle hoods are interchangeable. Made of cast iron, electro-plated.

The porcelain enameled steel reflector is green outside, reflecting white inside. Cut-off at 60°. An auxiliary aluminum oxide inner reflector fits around lamp neck.

Pendent Type Hood with Reflector and Keyless Rigid Lamp Holder

Hoods tapped, 1/2 inch standard; 3/4 inch, if specified.

No.	Each	Size Lamp Watts	Diameter Inches	Height Inches	No. in Std. Pkg.	Shipping Wt., Lb. Std. Pkg.
7156	\$3.20	60	7	8 7/8	10	32
7161	3.40	100	8	10 1/8	10	35
7169	3.80	200	10	12 3/8	10	44
7173	5.60	300, 500	12	14 3/8	5	31
7177	6.80	750-1500	16	18 3/8	5	43

Ceiling Type Hood with Reflector and Keyless Rigid Lamp Holder

Hoods fit 3 1/4 or 4-inch octagonal or round outlet boxes of 1 1/2 inches or more depth; also plaster covers with mounting holes on 2 3/4-inch centers.

No.	Each	Size Lamp Watts	Diameter Inches	Height Inches	No. in Std. Pkg.	Shipping Wt., Lb. Std. Pkg.
9156	\$3.20	60	7	8 1/2	10	37
9161	3.40	100	8	9 7/8	10	41
9169	3.80	200	10	12	10	49
9173	5.60	300, 500	12	14 1/8	5	34
9177	6.80	750-1500	16	17 3/4	5	48

Angle Type Hood with Reflector and Keyless Rigid Lamp Holder

Hoods tapped, 1/2 inch standard; 3/4 inch, if specified.

No.	Each	Size Lamp Watts	Diameter Inches	Height Inches	No. in Std. Pkg.	Shipping Wt., Lb. Std. Pkg.
3156	\$3.20	60	7	9 1/2	10	43
3161	3.40	100	8	10 7/8	10	41
3169	3.80	200	10	13	10	50
3173	5.60	300, 500	12	15 1/8	5	33
3177	6.80	750-1500	16	18 3/4	5	42 1/2

Prices do not include wires or lamps.

Extra Reflectors

Fixtures, complete except for hoods, are available for maintenance of the system. When ordering, specify number of complete fixture with the explanation, Less Hood, and deduct 80 cents from price.

Lamp Holders

PULL CHAIN; with 6-foot cord extension. For medium base units, 80 cents advance list. To order, suffix fixture number with PUL.

SHOCK-ABSORBING; for medium base fixtures, 10 cents advance in list over fixtures with standard rigid holder. To order, suffix fixture number with SHB.

Benjamin Turnlox Elliptical Angle Reflectors

Porcelain Enamelled Steel

Listed by Underwriters' Laboratories



Composed of two separable elements; a hood with a wiring terminal base, and a complete assembly of reflector and lamp which can be taken down as one piece for easy cleaning.

Automatic polarization is provided by the circular contact design and contact may be made at any point where bayonet plate can be inserted in the hood.

The three types of hoods are interchangeable; pendent, ceiling, and angle. Made of cast iron, electro-plated.

Reflector is porcelain enameled steel, green outside, reflecting white inside. Cut-off at 72 1/2°.

Couplings, 3/4 to 1-inch size (No. 1267) or 3/4 to 1 1/4-inch size (No. 1269).

Pendent Type Hood with Reflector and Keyless Rigid Lamp Holder

No.	Each	Size Lamp Watts	Width In.	Depth In.	Height In.	Size Tap. In.	Std. Pkg.	Shipping Wt., Lb. Std. Pkg.
7522	\$3.80	*75, 100	12 3/4	9 1/8	14 1/2	1 1/2	10	52
7525	4.50	150	12 3/4	9 1/8	15 3/8	1 1/2	10	53
7526	5.10	200	16 1/4	11 1/2	17 1/8	1 1/2	10	66 1/2
7537	9.10	300, 500	20	14 3/4	20 7/8	3/4	5	44
7538	10.10	750, 1500	21 7/8	14 7/8	23	3/4	2	29

Ceiling Type Hood with Reflector and Keyless Rigid Lamp Holder

Fit 3 1/4 or 4-inch standard octagonal or round outlet boxes of 1 1/2 inches or more depth; also plaster covers with mounting holes on 2 3/4-inch centers.

9522	\$3.80	*75, 100	12 3/4	9 1/8	14 1/8	...	10	55
9525	4.50	150	12 3/4	9 1/8	15	...	10	56
9526	5.10	200	16 1/4	11 1/2	16 3/4	...	10	69 1/2
9537	9.10	300, 500	20	14 3/4	20 1/2	...	5	49
9538	10.10	750, 1500	21 7/8	14 7/8	22 5/8	...	2	30

Angle Type Hood with Reflector and Lamp Holder

With No. 3 Hood Rigid Lamp Holder

3522	\$3.80	*75, 100	12 3/4	9 1/8	15 1/8	1 1/2	10	54
3525	4.50	150	12 3/4	9 1/8	16	1 1/2	10	56
3526	5.10	200	16 1/4	11 1/2	17 3/4	1 1/2	10	68
3537	9.10	300, 500	20	14 3/4	21 1/2	3/4	5	40
3538	10.10	750, 1500	21 7/8	14 7/8	23 3/8	3/4	2	27

With No. 3R Hood Rigid Lamp Holder

3522R	\$3.80	*75, 100	12 3/4	9 1/8	15 1/8	1 1/2	10	54
3525R	4.50	150	12 3/4	9 1/8	16	1 1/2	10	56
3526R	5.10	200	16 1/4	11 1/2	17 3/4	1 1/2	10	68
3537R	9.10	300, 500	20	14 3/4	21 1/2	3/4	5	40
3538R	10.10	750, 1500	21 7/8	14 7/8	23 3/8	3/4	2	27

*Suitable for 60-watt lamps if No. 91 socket extension is used.

†Tapped 3/4 inch size, when specified, without extra charge.
‡Provides three reflector positions, 120° apart. Use fixtures with No. 3 hoods where reflector must face directly towards the conduit support; No. 3R, where reflector must face directly away from the conduit support.

Prices do not include wires or lamps.

Extra Reflectors

Fixtures, complete except for hoods, are available for maintenance of the system. When ordering, specify catalog number of complete fixture with the explanation, Less Hood, and deduct 80 cents from price.

Lamp Holders

SELF-LOCKING; for medium base fixtures at 50 cents advance list. To order, suffix catalog number of fixture with LOK. Key No. 1399, to release lamp, \$1.00.

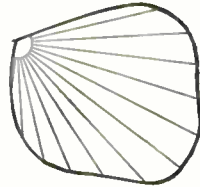
PULL CHAIN; with 6-foot cord extension. For medium base units, 80 cents advance list. To order, suffix fixture number with PUL.

Benjamin Turnlox RLM Symmetrical Angle Reflectors

Porcelain Enameled Steel
Listed by Underwriters' Laboratories



No. 7541



Typical Curve

Composed of two separable elements; a hood with a wiring terminal base, and a complete assembly of reflector and lamp which can be taken down as one piece for easy cleaning.

Automatic polarization is provided by the circular contact design and contact may be made at any point where bayonet plate can be inserted in the hood.

The cast iron pendent, ceiling and angle type hoods are interchangeable; electro-plated.

Reflector is porcelain enameled steel, green outside, reflecting white inside.

Pendent Type Hood with Reflector and Lamp Holder

Hood is tapped 1/2 inch standard; 3/4 inch, if specified.

Size Lamp Watts	With Keyless Rigid Lamp Holder		With Shock-Absorbing Lamp Holder		Diam. In.	Width In.	Ht. In.	Std. Pkg.	Ship. Wt. Lb.
	No.	Each	No.	Each					
100	7541	\$3.25	7541-SHB	\$3.35	8	7	11 3/4	10	33
150	7542	3.75	7542-SHB	3.85	10	8 3/4	13 1/2	10	41 1/2
300, 500	7543	5.35	7543-SHB	5.45	14	12 1/2	18 3/8	5	35
750, 1500	7544	8.00	7544-SHB	8.10	16	14 1/2	21 1/4	5	41

Ceiling Type Hood with Reflector and Lamp Holder

Hood, 3 3/4 or 4-inch standard octagonal or round outlet boxes of 1 1/2 inches or more depth; also plaster covers with mounting holes on 2 3/4-inch centers.

100	9541	\$3.25	9541-SHB	\$3.35	8	7	11 1/4	10	36
150	9542	3.75	9542-SHB	3.85	10	8 3/4	13	10	44 1/2
300, 500	9543	5.35	9543-SHB	5.45	14	12 1/2	18 3/8	5	38
750, 1500	9544	8.00	9544-SHB	8.10	16	14 1/2	20 7/8	5	44

Angle Type Hood with Reflector and Lamp Holder

Hood is tapped 1/2 inch standard; 3/4 inch, if specified.

100	3541	\$3.25	3541-SHB	\$3.35	8	7	12 1/4	10	33
150	3542	3.75	3542-SHB	3.85	10	8 3/4	14	10	41 1/2
300, 500	3543	5.35	3543-SHB	5.45	14	12 1/2	19 3/8	5	35
750, 1500	3544	8.00	3544-SHB	8.10	16	14 1/2	21 7/8	5	41

†Provides three reflector positions, 120° apart. Use fixtures with No. 3 hoods where reflector must face directly towards the conduit support; No. 3R, where reflector must face directly away from the conduit support. No. 3 hood regularly supplied.

Prices do not include wires or lamps.

Extra Reflectors

Fixtures, complete except for hoods, are available for maintenance of the system. When ordering, specify catalog number of complete fixture with the explanation, Less Hood, and deduct 80 cents from price.

Lamp Holders

SELF-LOCKING: for medium base fixtures at 50 cents advance list over fixtures with rigid holders. To order, suffix catalog number of rigid holder fixture with LOK. Key No. 1399, to release lamp, \$1.00.

PULL CHAIN: with 6-foot cord extension. For medium base fixtures, at 80 cents list over fixtures with rigid holders. To order, suffix catalog number of rigid holder fixture with PUL.

Benjamin Keyless Rigid Lamp Holder Assemblies



No. 2760

Listed by Underwriters' Laboratories
Medium Base—660 Watts, 600 Volts
Mogul Base—1500 Watts, 600 Volts

Standard for Turnlox and Floor-Service reflectors using holder of this type. Consists of a porcelain lamp holder and a Turnlox bayonet attaching plate with composition gasket and attaching screws.

Medium holders with lamp-grip shells to retard loosening of lamps; mogul holders with finger type lamp grip.

	Medium Base	Mogul Base
No.	2751	2760
Each.....	\$.55	1.10
No. in Std. Pkg.....	10	5
Ship. Wt. Std. Pkg....lb.	8	7

Benjamin Shock-Absorbing Lamp Holder Assemblies



No. 2753

Listed by Underwriters' Laboratories
Medium Base—660 Watts, 600 Volts
Mogul Base—1500 Watts, 600 Volts

Lengthen lamp life by guarding the lamp filament against vibration, jars and shocks. Consists of a porcelain lamp holder and a Turnlox bayonet attaching plate with composition gasket and attaching screws.

Medium holders with lamp-grip shells to retard loosening of lamps; mogul holders with finger type lamp grip.

	Medium Base	Mogul Base
No.	2753	2762
Each.....	\$.65	1.20
No. in Std. Pkg.....	10	5
Ship. Wt. Std. Pkg....lb.	10	7

No. 2752 Benjamin Pull Chain Medium Base Lamp Holder Assemblies

Listed by Underwriters' Laboratories
660 Watts, 250 Volts



No 2752.....each \$1.35

This pull chain lamp holder with the Benjamin inner pull feature provides a reliable method of individually controlling Benjamin Medium Base Turnlox Reflector equipment.

Consists of one-piece medium base porcelain lamp holder and a Turnlox bayonet attaching plate with composition gasket and attaching screws.

Plate and screws electro-plated. Standard package, 10. Weight standard package, 8 1/2 lbs.

No. 2754 Benjamin Turnlox Self-Locking Medium Base Lamp Holder Assemblies

Listed by Underwriters' Laboratories
660 Watts, 600 Volts



SELF ACTING LAMP LOCK
INSERT KEY HERE TO RELEASE LAMP

The socket automatically locks as the lamp is screwed in.

May be used in all medium base Turnlox reflector equipment.

Consists of a medium base porcelain lamp holder with self-locking feature, bayonet attaching plate, composition gasket and screws. Screws and plate are electro-plated.

No.	Each	Std. Pkg.	Wt., Lbs. Std. Pkg.
2754	\$1.05	10	11

Key Only for Releasing Lamp

1399	1.00	1	1/2
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Benjamin Hoods

For Medium and Mogul Base Reflectors

Listed by Underwriters' Laboratories

1500-Watts, 600-Volts

No. 7 Turnlox Pendent Type Hoods



Standard for Turnlox pendent fixtures. Complete with universal type of wiring terminal base.

Hood body is cast iron, electro-plated; porcelain terminal base.

Tapped 1/2-inch standard; 3/4-inch, when specified.

Packed 10 in a standard package.

Weight per standard package, 14 pounds.

No. 7.....each \$.80

No. 9 Turnlox Ceiling Type Hoods



Hood body is cast iron, electro-plated. Fits 3 1/4 or 4-inch standard octagonal or round boxes 1 1/2 inches or more deep; also plaster covers with screw holes spaced on 2 3/4-inch centers. One hole is slotted for easy attachment.

Complete with terminal base.

Packed 10 in a standard package.

Weight per standard package, 17 pounds.

No. 9.....each \$.80

Turnlox Angle Type Hoods



Hood body is cast iron, electro-plated. Complete with terminal base.

Side outlet tapped 1/2-inch standard; 3/4-inch, when specified.

Provides three reflector positions, 120° apart. Use No. 3 hood where reflector must face directly towards the conduit support; No. 3R, where reflector must face directly away from the conduit support.

Packed 10 in a standard package.

Weight per standard package, 16 pounds.

No. 3.....3 3R
Each.....\$.80 .80

No. 47 Floor-Service Turnlox Pendent Type Hoods



Standard for all Floor-Service Turnlox pendent fixtures. Complete with universal type wiring terminal base.

Hood body is cast iron, electro-plated; porcelain terminal base.

Tapped 1/2-inch standard; 3/4-inch, when specified.

Packed 10 in a standard package.

Weight per standard package, 21 pounds.

No. 47.....each \$1.20

No. 49 Floor-Service Turnlox Ceiling Type Hoods



Hood body is cast iron, electro-plated. Complete with terminal base.

Fits 3 1/4 or 4-inch standard octagonal or round boxes 1 1/2 inches or more deep; also plaster covers with screw holes spaced on 2 3/4-inch centers. One hole is slotted for easy attachment.

Packed 10 in a standard package.

Weight per standard package, 24 pounds.

No. 49.....each \$1.20

No. 750 Terminal Base

For use with all the hoods listed above. Made of porcelain.

Packed 10 in a standard package.

Weight per standard package, 3 1/2 pounds.

No. 750.....each \$.25

Benjamin Threaded-Hood Glassteel Diffusers

Listed by Underwriters' Laboratories



No. 26300



Opal Curve

Provides soft, evenly diffused illumination through a wide range of intensities, and over both upright and flat surfaces, by the combined lighting characteristics of the glass diffusing globe and the porcelain enameled steel reflector. Of the light output, 11 per cent reaches the ceiling and 89 per cent below horizontal.

Reflector has apertures in top; white porcelain enameled inside and out with blue-black head.

Type RR porcelain enameled threaded hood with easy-to-wire porcelain socket; white porcelain enamel finish.

Globe holder is electro-plated to resist corrosion.

Bayonet lock construction permits the easy removal of reflector and globe as a unit. Globe is quickly and easily removed by releasing locking clamp. No set screws.

Prices do not include wires or lamps.

Pendent Type Hood with Socket, Reflector and Glass Globe

Hood with X-type fitting tapped 1/2 inch and keyless medium base, rigid socket, No. 263; with X-fitting tapped 1/2 inch and mogul base rigid socket, No. 264. Tapped 3/4 inch when specified.

Size Lamp Watts	With Opal Glass Globe		With Daylight Glass Globe		Diam. In.	Ht. In.	Std. Pkg.	Shp. Lb. Std. Pkg.
	No.	Each	No.	Each				
*150, 200	26300	\$9.00	26310	\$9.50	18	11 3/4	4	50
300, 500	26302	12.50	26312	13.25	20	13 5/8	4	60
750, 1000	26303	18.50	26313	20.25	24 1/2	16 3/4	2	75

Ceiling Type Hood with Socket, Reflector and Glass Globe

Hood with keyless medium base rigid socket, No. 267; with mogul base rigid socket, No. 268. Fits 4-inch standard octagonal or round outlet boxes of 1 1/2 inches or more depth.

*150, 200	26304	\$9.00	26314	\$9.50	18	11	4	50
300, 500	26306	12.50	26316	13.25	20	12 7/8	4	60
750, 1000	26307	18.50	26317	20.25	24 1/2	16 1/4	2	75

*For correct positioning of 150-watt lamp, use No. 91 socket extension.

Shock-Absorbing Sockets

Lengthens lamp life; 10 cents advance in fixture list price. To order, suffix fixture number with SHB.

Benjamin Threaded-Hood Diffusing Globe Units

Listed by Underwriters' Laboratories

Same as Glassteel Diffusers listed above, but reflector does not have apertures in top.

Prices do not include wires or lamps.

Pendent Type Hood with Socket, Reflector and Glass Globe

Porcelain enameled steel hood with X-type fitting tapped 1/2 inch standard; 3/4-inch, if specified.

Size Lamp Watts	With Opal Glass Globe		With Daylight Glass Globe		Diam. In.	Ht. In.	Std. Pkg.	Shp. Lb. Std. Pkg.
	No.	Each	No.	Each				
*150, 200	26350	\$9.00	26360	\$9.50	18	11 3/4	4	50
300, 500	26352	12.50	26362	13.25	20	13 5/8	4	60
750, 1000	26353	18.50	26363	20.25	24 1/2	16 3/4	2	75

Ceiling Type Hood with Socket, Reflector and Glass Globe

Fits 4-inch standard octagonal or round outlet boxes of 1 1/2 inches or more depth.

*150, 200	26354	\$9.00	26364	\$9.50	18	11	4	50
300, 500	26356	12.50	26366	13.25	20	12 7/8	4	60
750, 1000	26357	18.50	26367	20.25	24 1/2	16 1/4	2	75

*For correct positioning of 150-watt lamp, use No. 91 socket extension.

Benjamin Socket-Reflectors

Porcelain Enameled Steel

Listed by Underwriters' Laboratories

Weatherproof, one-piece units, for indoor or outdoor use where interchangeability of reflectors and easy removal for cleaning are not considerations.

Complete unit includes reflector, socket and X-type fitting; an auxiliary aluminum oxide inner reflector which fits around lamp neck is supplied with all reflector sizes where it is of advantage.

The porcelain enameled steel reflector is green outside, reflecting white inside. The finish offers effective resistance to the deteriorating effects of fumes, moisture and grime and is easily cleaned.

Tapped 1/2 inch standard; when specified, tapped 3/4 inches, or supplied with 1/2 inch I.P. size insulating drop cord bushing, No. 1265. Strain relief cord grip at additional charge.

Elliptical angle reflector; medium base units tapped 1/2 inch standard, 3/4 inch, when specified; mogul units tapped 3/4 inch standard. For coupling in either 3/4 to 1 inch size (No. 1267) or 3/4 to 1 1/4 inch size (No. 1269).

Symmetrical angle reflector tapped 1/2 inch standard, 3/4 inch, when specified.

Socket adapter straps, for changing lamp position, furnished at no extra charge.

SELF-LOCKING SOCKETS: prevent unauthorized lamp removal; furnished, when specified, on medium-base socket-reflectors. For rigid locking socket, add 50 cents to list price of fixture with regular rigid socket and suffix number of same with LOK. For shock-absorbing locking socket add 60 cents to list price of fixture with regular rigid socket and suffix number of same with ASL. Key No. 1399, for releasing lamps in both types, \$1.00.

Prices do not include wires or lamps.

RLM Dome Reflectors



No. 5642

Cut-off at 72 1/2°.



Typical Curve

Size Lamp Watts	With Keyless Rigid Socket		With Pull Chain Socket		With Keyless Shock-Absorbing Socket		Diam. In.	Ht. In.	Std. Pkg.	Ship. Wt., Lb.
	No.	Each	No.	Each	No.	Each				
75	5640	\$3.30	5640-PUL	\$4.10	5640-SHB	\$3.40	12	7 1/2	10	31
100	5641	3.30	5641-PUL	4.10	5641-SHB	3.40	12	8	10	31 1/2
150	5642	3.50	5642-PUL	4.30	5642-SHB	3.60	14	9 3/8	10	39 1/2
200	5643	4.10	5643-PUL	4.90	5643-SHB	4.20	16	10 3/4	10	48
300, 500	5644	5.30	.....	.....	5644-SHB	5.40	18	12 3/8	5	39
750, 1500	5645	7.20	.....	.....	5645-SHB	7.30	20	14 3/8	5	49

Shallow Dome Reflectors



No. 5423

Cut-off at 77 1/2°.



Typical Curve

Size Lamp Watts	With Keyless Rigid Socket		With Pull Chain Socket		With Keyless Shock-Absorbing Socket		Diam. In.	Ht. In.	Std. Pkg.	Ship. Wt., Lb.
	No.	Each	No.	Each	No.	Each				
50, 60	5437	\$3.20	5437-PUL	\$4.00	5437-SHB	\$3.30	12	6 1/2	10	28 1/2
75, 100	5421	3.30	5421-PUL	4.10	5421-SHB	3.40	12	7 1/2	10	30
150	5423	3.50	5423-PUL	4.30	5423-SHB	3.60	14	8 3/8	10	36
200	5425	4.10	5425-PUL	4.90	5425-SHB	4.20	16	9 3/8	10	43 1/2
300, 500	5509	5.30	.....	.....	5509-SHB	5.40	18	11 1/4	5	36 1/2

Benjamin Socket-Reflectors

Porcelain Enameled Steel

Listed by Underwriters' Laboratories

RLM Bowl Reflectors



No. 6169

Cut-off is 60°.



Typical Curve

Size Lamp Watts	With Keyless Rigid Socket		With Pull Chain Socket		With Keyless Shock-Absorbing Socket		Diam. In.	Ht. In.	Std. Pkg.	Ship. Wt., Lb.
	No.	Each	No.	Each	No.	Each				
60	6166	\$2.90	6166-PUL	\$3.70	6166-SHB	\$3.00	7	7 1/8	10	24
100	6161	3.10	6161-PUL	3.90	6161-SHB	3.20	8	8 1/2	10	27
200	6169	3.50	6169-PUL	4.30	6169-SHB	3.60	10	10 3/8	10	28 1/2
300, 500	6173	5.20	.....	.....	6173-SHB	5.30	12	12 3/4	5	23
750, 1500	6177	6.40	.....	.....	6177-SHB	6.50	16	16 3/8	5	35

Flat Cone Reflectors



No. 5402

Cut-off is 85°.



Typical Curve

Size Lamp Watts	With Keyless Rigid Socket		With Pull Chain Socket		With Keyless Shock-Absorbing Socket		Diam. In.	Ht. In.	Std. Pkg.	Ship. Wt., Lb.
	No.	Each	No.	Each	No.	Each				
50, 60	5431	\$3.30	5431-PUL	\$4.10	5431-SHB	\$3.40	14	5 1/2	10	31
75, 100	5401	3.30	5401-PUL	4.10	5401-SHB	3.40	14	6 3/4	10	32
150	5402	3.50	5402-PUL	4.30	5402-SHB	3.60	16	7 3/4	10	39 1/2
200	5403	4.10	5403-PUL	4.90	5403-SHB	4.20	18	8 3/8	10	50

Prices do not include wires or lamps.

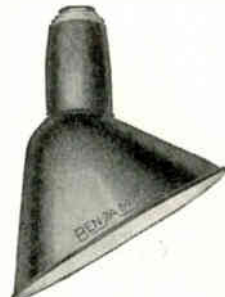
Benjamin Angle Socket-Reflectors

Porcelain Enameled Steel

Listed by Underwriters' Laboratories



No. 5525



No. 5542

Elliptical Angle Reflectors
Cut-off is 72 1/2°.

Size Lamp Watts	With Keyless Rigid Socket		With Pull Chain Socket		With Keyless Shock-Absorbing Socket		Diam. In.	Ht. In.	Std. Pkg.	Ship. Wt., Lb.
	No.	Each	No.	Each	No.	Each				
*75, 100	5522	\$3.50	5522-PUL	\$4.30	5522-SHB	\$3.60	12 3/4	12 3/4	10	38 1/2
150	5525	4.20	5525-PUL	5.00	5525-SHB	4.30	12 3/4	13 3/8	10	39
200	5526	4.80	5526-PUL	5.60	5526-SHB	4.90	16 1/4	15 3/8	10	50 1/2
300, 500	5537	8.70	.....	.....	5537-SHB	8.80	20	19 3/8	5	40
750, 1500	5538	9.70	.....	.....	5538-SHB	9.80	21 1/2	21 1/4	2	35

RLM Symmetrical Angle Reflectors

Size Lamp Watts	With Keyless Rigid Socket		With Pull Chain Socket		With Keyless Shock-Absorbing Socket		Diam. In.	Ht. In.	Std. Pkg.	Ship. Wt., Lb.
	No.	Each	No.	Each	No.	Each				
100	5541	\$2.95	5541-PUL	\$3.75	5541-SHB	\$3.05	8	9 3/8	10	24
150	5542	3.45	5542-PUL	4.25	5542-SHB	3.55	10	11 3/4	10	28 1/2
300, 500	5543	4.95	.....	.....	5543-SHB	5.05	14	17 3/8	5	32
750, 1500	5544	7.60	.....	.....	5544-SHB	7.70	16	19 1/2	5	38

*Takes 60-watt lamps, if No. 91 socket extension is used.

Prices do not include wires or lamps.

Benjamin Socket-Reflector Glassteel Diffusers

Listed by Underwriters' Laboratories



No. 5203



Opal Curve

Has porcelain enameled steel reflector with apertures in the top for passage of light to the ceiling. Finish; white inside and out, bead is blue-black. Globe-holder and lever, electro-plated.

The X-type separable fitting is tapped 1/2-inch standard, 3/4-inch when specified. Rigid, keyless two-piece porcelain sockets No. 4651, medium; No. 4657, mogul base are standard. Complete unit consists of reflector, globe and socket with X-type fitting.

Size Lamp Watts	With Opal Glass Globe		With Daylight Glass Globe		Diam. In.	Ht. In.	Std. Pkg.	Ship. Wt. Lb. Std. Pkg.
	No.	Each	No.	Each				
*150, 200	5201	\$9.00	5226	\$9.50	18	11 1/4	4	56
300, 500	5202	12.50	5227	13.25	20	13 1/2	4	60
750, 1000	5203	18.50	5228	20.25	24 1/2	16 1/2	2	73

*For correct positioning of 150-watt lamp, use No. 91 socket extension.

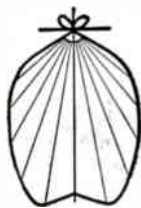
SHOCK-ABSORBING SOCKET; for medium and mogul base fixtures at 10 cents advance in list price. To order, suffix number with SHB.

Benjamin Luminous Top Silvered Lamp Diffusers

Listed by Underwriters' Laboratories



No. 7249



Typical Curve

Designed for use with silvered bowl lamps to provide high quality illumination. Furnished in Socket-Reflector, Turnlox and Floor-Service Turnlox constructions.

Closed-bead construction prevents corrosion.

Opal glass section extends 2 5/8 inches above the dome section of reflector, surrounds the skeleton neck of the unit and permits approximately five per cent of the light from the unit to reach the ceiling.

The skeleton neck, the section of the fixture neck covered by the opal glass cylinder, is formed in a special welded-truss construction which rigidly joins the reflector to the spun metal neck-cap carrying the socket or lamp holder.

TURNLOX; weatherproof bayonet mechanism permits removal of reflector and lamp from hood as a unit. Supplied with Turnlox hoods and rigid, keyless, lamp holder assemblies; No. 2760, mogul base; No. 2745, medium base. Pendant and angle hoods tapped 1/2 inch standard, 3/4 inch when specified. Ceiling hoods fit 3 1/4 or 4-inch standard octagonal or round outlet boxes, 1 1/2 inches or more deep.

SOCKET-REFLECTOR; standard Socket-Reflector, separable X-type fittings and keyless, rigid sockets, No. 4657 mogul base, No. 4645 medium base. Fitting tapped 1/2 inch standard, 3/4 inch when specified.

Reflectors are white inside and out. Neck-cap, white porcelain; skeleton construction, electro-plated. Caps on X-fittings are cast aluminum. Turnlox hoods, electro-plated.

Packed 4 in a standard package.

Type of Construction	200-Watt Lamp		300-500-Watt Lamp		Diam. In.	Ht. In.	Wt. Lb. Std. Pkg.	Ship. Wt. Lb. Std. Pkg.
	No.	Each	No.	Each				
Socket-Reflector.	5247	\$9.55	5249	\$10.00	20	12 3/4	42	
Turnlox Pendant.	7247	9.85	7249	10.40	20	14 1/2	43	
Turnlox Ceiling..	9247	9.85	9249	10.40	20	14 1/8	43	
Turnlox Angle....	3247	9.85	3249	10.40	20	15 1/8	43	

Prices do not include wires or lamps.

Benjamin RLM Silvered Bowl Diffusers

For 300-500-Watt Silvered Bowl Lamps

Porcelain Enameled Steel

Listed by Underwriters' Laboratories



No. 7253



Typical Curve

Porcelain reflector has special deep-dome shape with deep skirt section to insure adequate shielding of filament images from view in the section of the lamp bulb above bowl. Three welded stirrups provide for attaching Alzak aluminum inner reflector. Blue-black, closed bead construction prevents corrosion.

Inner reflector is Alzak aluminum with etched, semi-spherical reflecting surface. Attached to porcelain reflector by three screws.

TURNLOX; weatherproof bayonet mechanism permits removal of reflector and lamp from hood as a unit. Supplied with Turnlox hoods and rigid, keyless, lamp holder assemblies, No. 2760 mogul base. Pendant and angle hoods tapped 1/2 inch standard, 3/4 inch when specified. Ceiling hoods fit 3 1/4 or 4-inch standard octagonal or round outlet boxes, 1 1/2 inches or more deep.

SOCKET-REFLECTOR; standard Socket-Reflector, separable X-type fittings and keyless, rigid sockets, No. 4657 mogul base. Fitting tapped 1/2 inch standard, 3/4 inch when specified.

Reflectors are white inside and out. Caps on X-type fittings are cast aluminum. Turnlox hoods, electro-plated.

Packed 4 in a standard package.

No.	Each	Type of Construction	Diam. In.	Ht. In.	Wt. Lb. Std. Pkg.	Ship. Wt. Lb. Std. Pkg.
5253	\$11.50	Socket-Reflector	20	11 7/8	42	
7253	11.90	Turnlox Pendant	20	13 5/8	43	
9253	11.90	Turnlox Ceiling	20	13 1/4	43	
3253	11.90	Turnlox Angle	20	14 1/4	43	

SHOCK-ABSORBING SOCKETS; available at 10 cents advance in list price over fixture with rigid socket or lamp holder. To order, suffix number with SHB.

Type RR Benjamin Threaded Hood Fixtures

Listed by Underwriters' Laboratories

Suitable for use around railroad yards, steel mills and other industrial plants where conditions require the most rugged and sturdy equipment.

Allows easy removal of reflectors for cleaning and interchangeability among the various types and sizes of reflectors. Supplied in pendent cast, pendent steel, ceiling cast, ceiling steel and junction box cast hoods and are threaded to accommodate Type RR threaded neck reflectors.

Pendent hoods tapped 1/2-inch standard; 3/4-inch, if specified, at same price. Ceiling hoods fit 4-inch standard, octagonal or round outlet boxes. Junction box hoods are regularly supplied untapped; but where specified can be tapped for 1/2, 3/4 or 1-inch conduit, one, two, three, or four ways, at charge of 10 cents for each outlet.

Cast hoods are electro plated and sprayed with green lacquer; and steel hoods are finished in green enamel.

The following sockets are available for all hoods, except junction box hoods:

SHOCK-ABSORBING SOCKETS; cushion filament against jars and shocks, supplied at 10 cents advance in list price. To order, suffix fixture number with SHB.

PULL CHAIN SOCKETS; with 6-foot cord extension, medium base only, supplied at 80 cents advance in list price. To order, suffix fixture number with PUL.

SELF-LOCKING SOCKETS; prevents unauthorized lamp removals, medium base only, supplied at 50 cents advance in list price. To order, suffix fixture number with LOK.

SHOCK-ABSORBING LOCKING SOCKETS, add 60 cents to list price. To order, suffix fixture number with ASL.

Key for releasing lamps, both locking sockets, No. 1399.

Prices do not include wires or lamps.

Pendent Cast Hoods



No. 26050

No.	Each	Base	Std. Pkg.	Weight Pounds Standard Package
26050	\$2.30	Medium	10	27
26055	2.70	Mogul	5	16



No. 26030

Pendent Steel Hoods

No.	Each	Base	Std. Pkg.	Weight Pounds Standard Package
26030	\$1.10	Medium	10	13
26035	1.60	Mogul	5	9



No. 26045

Ceiling Cast Hoods

No.	Each	Base	Std. Pkg.	Weight Pounds Standard Package
26045	\$2.40	Medium	10	24
26049	2.80	Mogul	5	15



No. 26025

Ceiling Steel Hoods

No.	Each	Base	Std. Pkg.	Weight Pounds Standard Package
26025	\$1.10	Medium	10	12
26029	1.60	Mogul	5	7



No. 26041

Junction Box Cast Hoods

No.	Each	Base	Std. Pkg.	Weight Pounds Standard Package
26041	\$1.75	Medium	10	33

Benjamin Threaded Hood Fixtures

Reflectors for Type RR Equipment

R L M Dome Reflectors



No. 26014

Reflectors may be removed without the use of tools and given a thorough washing. They are replaced just as easily.

Every threaded reflector will fit any threaded hood in the Benjamin Series and service Type R R Lines.

Outside of reflector is Benjamin green; inside is white porcelain enamel.

Cat. No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt. Lbs. Std. Pkg.
26012	\$2.20	100	12	4 3/8	10	21
26014	2.40	150	14	5 5/8	10	29
26016	3.00	200	16	6 3/4	10	35
26018	3.70	300, 500	18	8 1/8	5	32
26020	5.60	750, 1500	20	10 7/8	5	38

Shallow Dome Reflectors



No. 26416

Best adapted to lighting of yards, warehouses, and platforms, or where it is desired that one unit light a large area.

Cat. No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt. Lbs. Std. Pkg.
26412	\$2.10	50, 60	12	2 1/2	10	18
26414	2.40	100, 150	14	3 1/2	10	23
26416	3.00	200	16	4 1/2	10	32
26418	3.70	300, 500	18	5 7/8	5	26

R L M Bowl Reflectors



No. 26108

For general illumination where lighting of horizontal surfaces is of first importance and where a high intensity is required in a relatively small area.

Cat. No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt. Lbs. Std. Pkg.
26108	\$2.00	100	8	4 3/4	10	17
26110	2.40	200	10	7	10	19
26112	3.60	300, 500	12	8 3/4	5	19

Fluted Bowl Reflectors



No. 26114

The only type of porcelain enameled steel reflector having an intensive distribution. It is used therefore for high mounting, i.e., 16 feet and upward.

Cat. No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt. Lbs. Std. Pkg.
26114	\$3.60	300, 500	14	8 3/8	5	21
26117	8.10	750, 1500	18	11 3/4	5	35

R L M Symmetrical Angle Reflectors



No. 26232

For illuminating places where light must come from the side.

Cat. No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt. Lbs. Std. Pkg.
26232	\$2.85	200	12	10 3/4	10	44
26234	3.35	300, 500	14	12 1/2	5	22
26236	6.00	750, 1500	16	14 7/8	5	26

Benjamin Keyless Rigid Medium Base Sockets

For Reflector Equipment

Listed by Underwriters' Laboratories
660-Watts, 600-Volts

For Socket-Reflector Fixtures

Socket is two-piece porcelain construction.

No. 4651 is standard on Socket-Reflectors with rigid medium base sockets; while Nos. 4650 and 4665 are optional equipment for the same.

Packed 10 in a standard package.



No. 4651

No.	Each	Description	Tapped In.	Ship. Wt., Lb. Std. Pkg.
4651	\$1.05	With X-Type Fitting	1/2	9 1/2
4650	1.05	With X-Type Fitting	3/8	11 1/2
4665	1.05	With X-Type Fitting	3/4	9
88	.60	Without X-Type Fitting	..	8

Benjamin Keyless Rigid Mogul Base Sockets

For Reflector Equipment

Listed by Underwriters' Laboratories
1500-Watts, 600-Volts

For Socket-Reflectors, Former Sturdox Hoods and Glassteel Pendent Steel Hoods

Socket is of two-piece porcelain construction. Supplied with finger type lamp grip.

No. 4657 is standard equipment for the following mogul base equipment: all Socket-Reflector fixtures; No. 26035 RR pendent steel hoods; No. 9215 Sturdox pendent steel hoods. No. 4657 is also standard equipment for No. 264 mogul base pendent porcelain enameled steel hood supplied with threaded hood Glassteel diffusers. No. 4666 tapped 3/4-inch on Nos. 5537 and 5538 reflectors; optional for any hood or fixture using No. 4657.



No. 4657

No. 698, the socket only of the above assemblies, is standard equipment for the following mogul base Sturdox hoods: No. 9205 pendent, cast; No. 9225 outlet box, cast; No. 9235 outlet box, steel.

Packed 5 in a standard package.

No.	Each	Description	Tapped In.	Ship. Wt., Lb. Std. Pkg.
4657	\$1.50	With X-Type Fitting	1/2	8
4666	1.50	With X-Type Fitting	3/4	7 1/2
698	1.05	Without X-Type Fitting	..	6 1/2
4524	.75	Socket Body Element Only	..	5 1/2

For Former Sturdox Hoods, RR and Glassteel Pendent Steel Hoods

Socket is two-piece porcelain construction.

A universal terminal base. Allows conversion from medium to mogul without touching wiring. Mogul base element, No. 4524.

No. 4505 is standard on No. 9210 Sturdox and No. 26030 RR, pendent steel hoods; also on No. 263 pendent hood for threaded hood Glassteel diffusers. No. 4509 optional on above. No. 4507 is standard on the following Sturdox hoods: No. 9200 pendent, cast; No. 9220 ceiling type, cast; No. 9230 ceiling type, steel.

Packed 10 in a standard package.



No. 4505

No.	Each	Description	Tapped In.	Ship. Wt., Lb. Std. Pkg.
4505	\$1.05	With X-Type Fitting	1/2	10 1/2
4509	1.05	With X-Type Fitting	3/4	12 1/2
4507	.60	Without X-Type Fitting	..	9
4520	.30	Socket Body Element Only	..	5

For RR Cast Hoods and RR and Glassteel Ceiling Steel Hoods

Socket is of two-piece porcelain construction. Supplied with finger type lamp grip.

No. 4515 socket is standard equipment for the following mogul base Type RR hoods: No. 26055 pendent, cast; No. 26049 outlet box, cast; No. 26029, outlet box, steel. Also standard equipment for No. 268 mogul base ceiling porcelain enameled steel hood supplied with threaded hood Glassteel diffusers.



No. 4515

No. 4524 socket body element may be substituted for medium socket element on Nos. 4507 and 4511 sockets, without disturbing wiring.

Packed 5 in a standard package.

No.	Each	Description	Ship. Wt., Lb. Std. Pkg.
4515	\$1.05	Without X-Type Fitting	6 1/2
4524	.75	Socket Body Element Only	5 1/2

For RR Cast Hoods, RR and Glassteel Ceiling Steel Hoods

Socket is two-piece porcelain construction. A universal terminal base. Allows conversion from medium to mogul without touching wiring.

No. 4511 is standard on the following RR hoods: No. 26050 pendent, cast; No. 26045 ceiling type, cast; No. 26025 ceiling type, steel. No. 4511 is also standard on No. 267 ceiling hood for threaded hood Glassteel diffusers.

Packed 10 in a standard package.



No. 4511

No.	Each	Description	Ship. Wt., Lb. Std. Pkg.
4511	\$.60	With X-Type Fitting	8
4520	.30	Socket Body Element Only	5

No. 44 for Heavy Duty Vapor Proof and Shall-O-Hood Lighting Units

Socket is one-piece porcelain construction with accessible side terminals.

Standard on Heavy Duty Vapor Proof fixtures and Shall-O-Hood fixtures, supplied with rigid medium base sockets; on medium base Gymnasium Lighting fixtures and Column-Lite.

Packed 10 in a standard package.

Weight per standard package, 8 pounds.

No. 44.....each \$.60



No. 244 for Heavy Duty Vaporproof and Shall-O-Hood Lighting Units

Socket is of one-piece porcelain construction. Supplied with finger type lamp grip and accessible side terminals.

Standard on Heavy Duty Vaporproof fixtures and Shall-O-Hood lighting fixtures, supplied with mogul base rigid sockets; also standard on mogul base Gymnasium lighting fixtures and Column-Lite.

Packed 5 in a standard package.

Weight per standard package, 6 1/2 pounds.

No. 244.....each \$1.05



Benjamin Shock-Absorbing Medium Base Sockets

For Reflector Equipment

Listed by Underwriters' Laboratories
660-Watts, 600-Volts

This shock-absorbing socket, which lengthens lamp life by counteracting vibration is furnished as standard or can be substituted in place of the rigid type socket on most reflector equipment.

A special bronze spring between the socket and fitting is the basis of the construction.

The spring floats the socket body and absorbs jars and shocks.

For Socket-Reflectors, RR Cast and Hoods and RR and Glassteel Ceiling Steel Hoods



No. 4676

Nos. 4676, 4678 and 4677 are for socket-reflectors.

No. 4675 is for RR pendent and ceiling, cast hoods, and RR and threaded hood Glassteel ceiling, steel hoods.

Packed 10 in a standard package.

No.	Each	Description	Tapped In.	Shp. Wt., Lb. Std.	Pkg.
4676	\$1.15	With X-Type Fitting.....	1/2	11	
4678	1.15	With X-Type Fitting.....	3/8	12	
4677	1.15	With X-Type Fitting.....	3/4	9 1/2	
4675	.70	Socket Only, with Spring.....		7 1/2	

For Former Sturdox Hoods and RR and Glassteel Pendent Steel Hoods



No. 4680

Nos. 4680 and 4681 are for use in the following medium base hoods: RR pendent, steel; Sturdox pendent, steel; also for pendent steel hoods used in threaded hood Glassteel diffusers.

Nos. 4682, complete socket only with spring for above, is for use on medium base Sturdox hoods: pendent, cast; ceiling, case; ceiling, steel.

Packed 10 in a standard package.

No.	Each	Description	Tapped In.	Shp. Wt., Lb. Std.	Pkg.
4680	\$1.15	With X-Type Fitting.....	1/2	12	
4681	1.15	With X-Type Fitting.....	3/4	12	
4682	.70	Socket Only, with Spring.....		5 1/2	
4520	.30	Socket Body Element Only.....		5	

No. 2675 for Heavy Duty Vaporproof, Type II-G Dust-Tight, Vapor-Seal and Shall-O-Hood Lighting Units



For use on medium base fixtures; one-piece porcelain body.

Packed 10 in a standard package.

Weight per standard package, 5 1/2 pounds.

No. 2675.....each \$.70

No. 4679 Shock-Absorbing Springs

For medium base socket.

Circular in shape with screw holes on 1 3/4-inch centers.

Oval spring with screw holes on 1 1/2-inch centers furnished when specified.

Packed 10 in standard package; weight, 1 pound.

No. 4679.....each \$.10

Benjamin Mogul Base Sockets

For Reflector Equipment

Listed by Underwriters' Laboratories
1500 Watts, 600 Volts

Shock-Absorbing Sockets

For Socket-Reflectors, Former Sturdox Hoods and RR and Glassteel Pendent Steel Hoods



No. 4670

Nos. 4670 and 4672 are for the following mogul base equipment: Socket-Reflector fixtures; RR pendent steel hood; Sturdox pendent steel hood; pendent hood for threaded hood Glassteel diffusers.

No. 4578, complete socket only with spring for the above, is for the following mogul base RR and Sturdox hoods: pendent, cast; outlet box, cast; outlet box, steel.

Has two-piece porcelain body. Furnished with finger type lamp grip.

Packed 5 in a standard package.

No.	Each	Description	Tapped In.	Shp. Wt., Lb. Std.	Pkg.
4670	\$1.60	With X-Type Fitting.....	1/2	9	
4672	1.60	With X-Type Fitting.....	3/4	9	
4578	1.15	Socket Only, with Spring.....		5	
4524	.75	Socket Body Element Only.....		5 1/2	

No. 2671 For Heavy Duty Vaporproof, Vapor-Seal and Shall-O-Hood Lighting Units



For use on the following mogul base fixtures: Heavy Duty Vaporproof, Vapor-Seal and Shall-O-Hood.

Has one-piece porcelain body. Furnished with finger type lamp grip. Packed 5 in a standard package.

Shipping weight per standard package, 5 pounds.

No. 2671.....each \$1.15

3-Light Lamp Sockets

For Socket-Reflectors, Former Sturdox Hoods and RR and Glassteel Pendent Steel Hoods



No. 2592

For use in Benjamin reflector equipment ordinarily taking No. 4657 and 4666 assemblies, to allow the use of three-light lamps. The socket only, No. 2590, can be used on any equipment regularly taking No. 698 socket.

Two sizes of three-light lamps are available: the smaller has a 150 and 200-watt filament, each of which may be burned separately or together; the larger has a 200 and 300-watt filament for use in same manner.

Has two center contacts, and three plainly marked wiring terminal screws.

Furnished with finger type lamp grip. Attaching screws are in slotted openings and can be varied from 1 1/2 to 1 3/4-inch centers.

Packed 5 in a standard package.

No.	Each	Description	Tapped In.	Shp. Wt., Lb. Std.	Pkg.
2592	\$1.95	With X-Type Fitting.....	1/2	8 1/2	
2593	1.95	With X-Type Fitting.....	3/4	8 1/2	
2590	1.50	Without X-Type Fitting.....		6 1/2	

No. 4673 Shock-Absorbing Springs

For use with shock-absorbing mogul base sockets. Circular in shape with mounting holes on 1 3/4-inch centers. Oval spring with holes on 1 1/2-inch centers, furnished when specified.

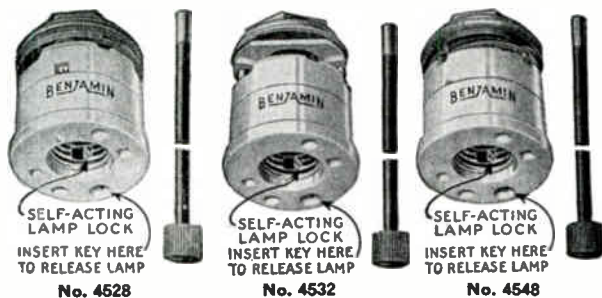
Packed 5 in a standard package.

Shipping weight per standard package, 1 pound.

No. 4673.....each \$.10

Benjamin Self-Locking Sockets For Reflector Equipment

Listed by Underwriters' Laboratories
660-Watts, 600-Volts



Self-locking socket prevents unauthorized removal of lamp. The socket locks automatically as the lamp is screwed in but a key, No. 1399, is required for removal.

Has two-piece porcelain body.
Packed 10 in a standard package.

Medium Base Sockets For Socket-Reflectors, RR Cast Hoods and RR Ceiling Steel Hoods and Shall-O-Hood Hoods

Nos. 4528 to 4530 are for Socket-Reflectors. No. 86 is for RR pendent, cast; ceiling, cast and steel; and Shall-O-Hood hoods.

No.	Each	Description	Tapped In.	Shp. Wt., Lb. Std. Pkg.
4528	\$1.55	With X-Type Fitting.....	1/2	10
4529	1.55	With X-Type Fitting.....	3/8	10
4530	1.55	With X-Type Fitting.....	3/4	10
86	1.10	Socket Only.....		7
*586	.90	Locking Body Element Only.....		5

*May be substituted in place of socket body element only of No. 88 sockets in Socket-Reflectors.

For All Styles Former Sturdox Hoods and RR Pendent Steel Hoods

Nos. 4532 and 4533 are for medium base hoods: Sturdox pendent, steel; RR pendent, steel.

No. 4531	Socket only for above, is for medium base Sturdox Hoods: pendent, cast; ceiling, cast and steel.			
4532	1.55	With X-Type Fitting.....	1/2	10
4533	1.55	With X-Type Fitting.....	3/4	10
4531	1.10	Socket Only with Spacers.....		7

Shock-Absorbing Medium Base Sockets For Socket-Reflector and Shall-O-Hood Equipment, RR Cast Hoods and RR Ceiling Steel Hoods

Nos. 4548 to 4550 are for Socket-Reflectors; No. 4551 for Shall-O-Hood equipment and RR cast hoods and RR ceiling, steel.

4548	\$1.65	With X-Type Fitting.....	1/2	10 1/2
4549	1.65	With X-Type Fitting.....	3/8	10 1/2
4550	1.65	With X-Type Fitting.....	3/4	11
4551	1.20	Socket Only with Spring.....		7

For All Styles Former Sturdox Hoods and RR Pendent Steel Hoods

Nos. 4552 and 4553 are for medium base hoods: RR pendent, steel; Sturdox pendent, steel.

No. 4554, socket only for above, is for medium base Sturdox hoods: pendent, cast; ceiling, cast and steel.

4552	\$1.65	With X-Type Fitting.....	1/2	10
4553	1.65	With X-Type Fitting.....	3/4	10
4554	1.20	Socket Only with Spring and Spacers ..		7

No. 4679 Shock-Absorbing Springs

For use with Shock-absorbing medium base sockets. Circular in shape with screw holes on 1 3/4-inch centers. Oval spring with screw holes on 1 1/2-inch centers furnished when specified.

Packed 10 in a standard package; weight, 1 pound.
No. 4679.....each \$1.10

No. 1399 Key

Used to unlock sockets listed above.

Packed 1 in a standard package.

Weight per standard package, 1/2 pound.

No. 1399.....each \$1.00

Benjamin Sockets and Adapter Straps

For Reflectors

Listed by Underwriters' Laboratories

Pull Chain Medium Base Socket Assemblies For Socket-Reflector Equipment, RR and Shall-O-Hood Hoods

660 Watts, 250 Volts

Has one-piece porcelain body. Includes 6-foot cord extension.

Nos. 2661, 2660 and 2667 are for the following medium base equipment: all Socket-Reflector fixtures; RR pendent steel hoods; Sturdox pendent steel hoods.

No. 2664, which is the socket only of the above, is for use in the following medium base reflector equipment: RR cast pendent hood; RR cast ceiling hood; RR steel ceiling hood; Sturdox cast pendent hood; Sturdox cast ceiling hood; Sturdox ceiling steel hood; and all Shall-O-Hood hoods.



No. 2661

Packed 10 in a standard package.

No.	Each	Description	Tapped In.	Shp. Wt., Lb. Std. Pkg.
2661	\$1.85	Socket and X-Fitting.....	1/2	10 1/2
2660	1.85	Socket and X-Fitting.....	3/8	10 1/2
2667	1.85	Socket and X-Fitting.....	3/4	11
2664	1.40	Socket without X-Fitting.....		6 1/2

For self-locking socket, suffix number with LOK and add 50 cents to list price. Key No. 1399, for releasing lamp, \$1.00.

No. 4685 Keyless, Rigid Arc-Shield Safety Sockets

660 Watts, 600 Volts

Has a barrier or shield of porcelain between the lamp holding and terminal elements so that heat and arcs caused by lamp blowouts are not transmitted to wiring or terminal screws.

Used in subways, tunnels, etc.

Lamp holding element can be replaced without disturbing the wiring.

Packed 10 in a standard package.

Shipping weight per standard package, 8 pounds.

No. 4685.....each \$9.00



Socket Adapter Straps

Inserted between socket and fitting in socket-reflector equipment to change lamp position.

Attaching screw holes spaced on 1 3/4-inch centers. Furnished with two attaching screws. Made of steel; electro plated.

Packed 50 in a standard package.



No. 4561-J

No.	Each	Description	Shp. Wt., Lb. Std. Pkg.
4561-B	\$.10	7/8-Inch Socket Extension.....	5
4561-J	.10	1 1/2-Inch Socket Extension.....	7
4561-D	.10	2 1/2-Inch Socket Extension.....	9

Possible Changes in Lamp Positions

No. 4561-B—100 to 60 watts, 150 to 100 watts, 200 to 150 watts, and 300, 500 to 200 watts.

No. 4561-J—750-1500 to 300-500 watts.

No. 4561-D—150 to 75 watts, 200 to 100 watts, and 300, 500 to 150 watts.

**Benjamin Accessories
For Reflector Equipment**

X-Type Fittings

For use with Benjamin medium and mogul base sockets.



No. 4653

Consists of a malleable iron lower flange, a cast aluminum threaded cap and two gaskets, one for either side of the reflector top.

Packed 10 in a standard package.

Weight per standard package, 4 pounds.

No.	4653	4652	4668
Each	\$.45	.45	.45
Tapped	1/2 inches	3/8	3/4

No. 1261 Strain Relief Cord Grips



A simple type of fitting which serves both as a strain relief and a cord bushing.

Easily attached to any socket tapped 1/2-inch, and accommodates any cord from 3/8 to 1/2-inch diameter, inclusive.

Consists of an electro-plated malleable iron bushing with 1/2-inch iron pipe thread, to which two steel straps, forming the cord grip, are attached by machine screws.

When properly installed, this fitting will relieve the wiring terminals of all strain, transferring it to the body of the socket.

Packed 50 in a standard package.

Weight per standard package, 10 pounds.

No. 1261.....each \$ 10

**No. 1263 Strain Relief Watertight
Cord Grips**



Serves as a strain relief cord grip and as a watertight cord bushing for outdoor installations.

Attaches to any reflector fitting tapped 1/2-inch and accommodates any cord from 3/8 to 1/2-inch inclusive.

Consists of brass bushing, nut and washer, and a rubber stuffing gland.

Packed 10 in a standard package.

Weight per standard package, 1 pound.

No. 1263.....each \$.45

No. 1265 Insulating Bushings



A composition bushing for drop cord suspension of fixtures tapped 1/2-inch; 1 1/8-inch center hole.

Packed 200 in a standard package.

Weight per standard package, 3 1/2 pounds.

No. 1265.....each \$.05

Reducers Couplings with Close Nipples



No. 1267

For attaching fittings tapped 3/4-inch to either 1 or 1 1/4-inch iron pipe size conduit.

Cast iron coupling with short iron pipe nipple; electro-plated.

Packed 25 in a standard package.

No.	1267	1269
Each	\$.20	.20
Nipple I.P.S.	3/4 inches	3/4
Coupling I.P.S.	1 inches	1 1/4
Ship. Wt., Std. Pkg.	14 pounds	16

**Series 1800 Benjamin Removable Reflectors
Porcelain Enameled Steel**

Listed by Underwriters' Laboratories

A complete fixture consists of a combination of the hood and socket unit and a reflector. To obtain price of complete fixture, add price of hood and socket to price of reflector selected.

Hoods are designed to take all reflectors interchangeably and to accommodate either medium or mogul base sockets. Hoods are cast iron, cadmium plated; reflectors are porcelain enameled, white inside, green outside. Keyless, one-piece, porcelain sockets are standard.

PULL CHAIN, medium base only, can be furnished when specified at an advance of 80 cents in list price. When ordering, add suffix PUL to number of fixture.

Dome Reflectors



No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Ship. Wt. Lb. Std. Pkg.
1801	\$2.20	75, 100	12	6 3/8	10	21
1802	2.40	150	14	7 5/8	10	23
1803	3.00	200	16	8 3/4	10	29
1804	3.70	300, 500	18	10 3/8	5	26

Shallow Dome Reflectors



1811	\$2.10	50, 60	10	4 7/8	10	16
1812	2.20	75, 100	12	6	10	17
1813	2.40	150	14	7 1/8	10	26
1814	3.00	200	16	8 3/8	10	39

Symmetrical Angle Reflectors



1821	\$1.10	50, 60	8	7 3/8	10	13
1822	1.10	75, 100	8	8 3/8	10	14
1823	1.40	150	10	10 1/2	10	21
1824	2.85	200	12	12 5/8	10	29
1825	3.35	300, 500	14	14 3/4	5	21

Elliptical Angle Reflectors



1831	\$2.40	75, 100	12 3/4	11	10	29
1832	3.10	150	12 3/4	12	10	29
1833	3.70	200	16 1/4	13 3/4	10	37

Series 1800 Benjamin Sockets

Listed by Underwriters' Laboratories

No. 2101 Keyless Rigid Medium Base Sockets



Standard equipment for medium base Series 1800 Benjamin equipment. One-piece, easy-to-wire; fits any Series 1800 Benjamin hood shown below.

Packed 10 in a standard package. Shipping weight per standard package, 5 pounds.
No. 2101.....each \$.60

No. 2110 Keyless Rigid Mogul Base Sockets



Standard equipment for mogul base Series 1800 Benjamin equipment. One-piece, easy-to-wire; fits any Series 1800 Benjamin hood shown below.

Packed 5 in a standard package. Shipping weight per standard package, 4 pounds.

No. 2110.....each \$ 1.10

No. 2102 Pull Chain Medium Base Sockets



For use in any medium base Series 1800 Benjamin fixture. Reliable mechanism, controlled by bead chain.

Supplied with a 6-foot pull cord extension.

Socket fits any Series 1800 Benjamin hood shown below.

Packed 10 in a standard package. Shipping weight per standard package, 7 pounds.

No. 2102.....each \$ 1.40

Series 1800 Benjamin Hood Fixtures

Listed by Underwriters' Laboratories

No. E-18 Pendant Cast Hoods



Standard for any Series 1800 Benjamin reflector. Takes interchangeably any medium or mogul socket shown above.

Tapped for 1/2-inch conduit, standard. Cast iron; electro-plated.

Packed 10 in a standard package.

Shipping weight per standard package, 8 pounds.

No. E-18.....each \$.50

No. L-18 Angle Cast Hoods



Standard for any Series 1800 Benjamin reflector, where it is desired to have the conduit entrance at right angles to the reflector. Takes interchangeably any medium or mogul socket shown above.

Tapped for 1/2-inch conduit, standard. Cast iron; electro-plated.

Packed 10 in a standard package.

Shipping weight per standard package, 8 pounds.

No. L-18.....each \$.50

No. T-18 Feed Through Cast Hoods



Standard for any Series 1800 Benjamin reflector, where it is desired to have the conduit feed through the hood at right angles to the reflector. Takes interchangeably any medium or mogul socket shown above.

Tapped for 1/2-inch conduit, both sides, standard. Cast iron; electro-plated.

Packed 10 in a standard package.

Shipping weight per standard package, 9 pounds.

No. T-18.....each \$.65

No. C-18 Ceiling Cast Hoods



Standard for any Series 1800 Benjamin reflector. Takes interchangeably any medium or mogul base socket shown above. Fits any standard 4-inch outlet box. One screw hole in hood is slotted for easy attachment.

Cast iron; electro-plated.

Packed 10 in a standard package.

Shipping weight per standard package, 10 pounds.

No. C-18.....each \$.50

Benjamin Bowl Shade Holder Reflectors

R. L. M.



No. 12075N



Characteristic Distribution Curve

For general illumination where the lighting of flat surfaces is of first importance and where a high intensity is required in a relatively small area.

With Type N Neck for Standard 2 1/4-inch Shade Holders

Cat. No.	Each	Size of Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt. Lbs.
12025N	\$.95	25, 40	5	3 3/8	10	11
12060N	1.50	60	7	4 3/4	10	12
12075N	1.60	100	8	5 7/8	10	14
12200N	2.20	200	10	8 1/8	10	19 1/2

With Type S Holder for Benco Sockets and Outlet Box Fittings

Cat. No.	Each	Size of Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt. Lbs.
12025S	\$ 1.15	25, 40	5	3 3/8	10	12
12060S	1.70	60	7	4 3/4	10	13
12075S	1.80	100	8	5 7/8	10	15
12200S	2.40	200	10	8 1/8	10	20 1/2

Benjamin Shallow Dome Shade Holder Reflectors



No. 11100N



Characteristic Distribution Curve

For general illumination where the lighting requirement is of an extensive character.

With Type N Neck for Standard 2 1/4-inch Shade Holders

Cat. No.	Each	Size of Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt. Lbs.
11050N	\$ 1.25	25, 40	10	3 3/8	10	11
11060N	1.45	60	12	4	10	17
11075N	1.70	75, 100	12	5 1/8	10	17
11100N	1.90	150	14	6	10	24 1/2
11200N	2.50	200	16	7	10	31

With Type S Holder for Benco Sockets and Outlet Box Fittings

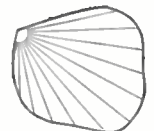
Cat. No.	Each	Size of Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt. Lbs.
11050S	\$ 1.45	25, 40	10	3 3/8	10	12
11060S	1.65	60	12	4	10	18
11075S	1.90	75, 100	12	5 1/8	10	18
11100S	2.10	150	14	6	10	25 1/2
11200S	2.70	200	16	7	10	32

Benjamin Symmetrical Angle Shade Holder Reflectors

R. L. M.



No. 15075N



Characteristic Distribution Curve

With Type N Neck for Standard 2 1/4-inch Shade Holders

Cat. No.	Each	Size of Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt. Lbs.
15040N	\$ 1.15	25, 40	7	5 1/2	10	8
15060N	1.45	60	8	6 1/2	10	9 1/2
15075N	1.45	100	8	7 3/8	10	10 1/2
15100N	1.95	150	10	9 1/2	10	20

With Type S Holder for Benco Sockets and Outlet Box Fittings

Cat. No.	Each	Size of Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt. Lbs.
15040S	\$ 1.35	25, 40	7	5 1/2	10	9
15060S	1.65	60	8	6 1/2	10	10 1/2
15075S	1.65	100	8	7 3/8	10	11 1/2
15100S	2.15	150	10	9 1/2	10	21

Benjamin Dome Shade Holder Reflectors

Reflector and Lamp Manufacturers' (RLM) Standard



No. 14100N



Type N Shade Holder



Type S Shade Holder

For general illumination when it is desired to avoid reflected glare from the surfaces lighted and to avoid direct glare by having the angle of light cut-off agree with all state lighting codes. Angle of cut-off 72½°.

Type N shade holder reflector is fitted with a neck so shaped as to fit any standard 2¼ or 3¼-inch shade holder.

Type S shade holder reflector has a screw threaded holder to fit Benco Sockets and Type S Outlet Box Fittings.

Reflectors are green porcelain enamel outside and white inside.

With Type N Neck for Standard Shade Holder

Cat. No.	Each	Size Lamp Watts	DIMEN., IN.		Std. Pkg.	Wt., Lbs. Std. Pkg.
			Diam.	Ht.		
14025N	\$1.25	25, 40	10	3⅜	10	13½
14050N	1.90	75	12	5	10	19
14075N	1.90	100	12	5½	10	19½
14100N	2.20	150	14	6¾	10	28
14200N	2.60	200	16	7¾	10	36
†14300N	3.60	300, 500	18	7¾	5	29

With Type S Holder for Benco Sockets and Type S Outlet Box Fittings

Cat. No.	Each	Size Lamp Watts	DIMEN., IN.		Std. Pkg.	Wt., Lbs. Std. Pkg.
			Diam.	Ht.		
14025S	\$1.45	25, 40	10	3⅜	10	14½
14050S	2.10	75	12	5	10	20
14075S	2.10	100	12	5½	10	20½
14100S	2.40	150	14	6¾	10	29
14200S	2.80	200	16	7¾	10	37

†With 3¼-inch fitter.

Benjamin Snap-In Reflector Holders

Attach to Any Type N Benjamin Reflector with Neck for 2¼-Inch Holders

Designed so that when used with Benjamin Reflectors and proper socket equipment, correct location of the lamp in the reflector is assured.

To attach, line up rivet heads on holder with slots in reflector neck. Then push down with palm of hand, snapping holder into place. The reflector with holder is then ready for attachment.

Packed 10 in a standard package.

Shipping weight per standard package, 2 pounds.

Type A



For attachment to Ben-Ox sockets and fittings.

Made of copper; copper finish.

No. 4386.....each \$.20

Type B



For attachment to brass shell sockets with Uno thread.

Made of brass; natural brass finish.

No. 4384.....each \$.20

Type P



For attachment to standard porcelain or composition sockets.

Made of copper; bright metal finish.

No. 4385.....each \$.20

Type S



For attachment to Benco metal clad sockets and fittings, and other manufacturers' sockets with inside threads.

Made of copper; bright metal finish.

No. 4383.....each \$.20

Type W



For other manufacturers' metal clad sockets with outside threads of 1¾-inch diameter.

Made of copper; nickel finish.

No. 4382.....each \$.20

Benjamin Intensifiers

Listed by Underwriters' Laboratories

For supplementary, high intensity illumination of small areas.

Packed 1 in a standard package.

Medium Base—Adjustable-Focus Projectors



Highly polished Alzak aluminum reflector. Medium base composition socket (No. 6656) has focusing adjustment. Universal adjusting bracket is attached to reflector neck. Two thumb screws lock bracket at any point in a wide range of horizontal and vertical settings.

Bracket tapped for ½ inch conduit connection. Reflector interior sealed by dust-tight glass cover with quick-opening latch.

Band is natural aluminum, latch electro-plated. Reflector is green lacquer outside; louver, black.

Size Lamp Watts	Complete No.	Each	Glass Only		Style of Cover Glass	Diam. In.	Lgth. In.
			No.	Each			
60-100	5603	\$8.00	6281	\$.80	Plain, Clear	9⅞	12¼
150-200	5604	12.00	6285	3.00	Stippled, Clear	12⅞	15¾
150-200	5632	13.30	6287	6.00*	Daylight	12⅞	14¾

Mogul Base—Fixed-Focus Projectors



Highly polished Alzak aluminum reflector. Non-focusing, mogul base porcelain socket, No. 2585.

Universal adjusting bracket encloses wiring; fixture supplied with 10-foot leads of No. 16 B&S gage, asbestos covered stranded fixture wire.

Bracket is tapped ½ inch standard, ¾ inch if specified. Reflector interior is sealed by glass cover with quick-opening latch.

Band is natural aluminum; latch, electro-plated. Reflector is green lacquer outside; louver, dead black.

Size Lamp Watts	Complete No.	Each	Glass Only		Style of Cover Glass	Diam. In.	Lgth. In.
			No.	Each			
300-500	5637	\$16.00	6285	\$3.00	Stippled, Clear	12⅞	13
300-500	5639	19.00	6287	6.00	*Daylight	12⅞	13

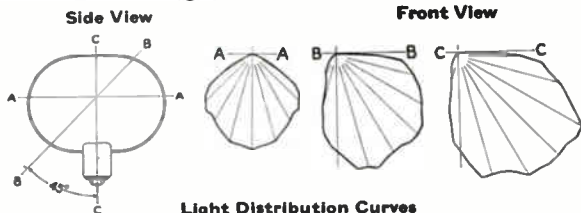
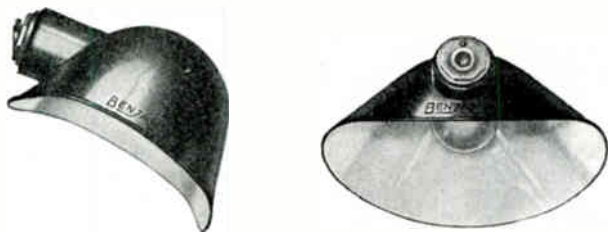
*Color temperature 4200° Kelvin (300-watt clear lamp) approximately 5300° Kelvin (300-watt Daylight lamp).

Table of Footcandle Intensities

Watts	SIZE LAMP		Distance Feet	Less Louver	With Louver	Lighted Inches
	Lumens					
†60	828		4	90	65	11
			6	38	27	15
			8	22	16	23
			12	10	8	36
†100	1,530		4	165	120	12
			6	70	50	16
			8	40	30	24
			12	18	15	36
†150	2,580		4	235	200	15
			6	100	87	21
			8	55	50	29
			12	25	22	41
†200	3,640		4	330	290	16
			6	140	123	22
			8	80	70	30
			12	36	32	42
300	5,700		4	500	440	18
			6	220	195	24
			8	125	110	32
			12	55	49	45
500	10,000		4	875	770	19
			6	385	340	25
			8	220	190	33
			12	85	84	46

†Lamps focused at minimum beam spread.

Benjamin Master Sign Reflectors



Light Distribution Curves

Recommended for use on standard poster panels, standard city or suburban bulletins, 3-sheet poster panels, standard store bulletins and other types of signs; also standard highway bulletins, railroad metropolitan or highway bulletins.

Elliptical shaped reflector is porcelain enameled steel with side outlet. Regularly finished green outside, reflecting white inside; can be furnished white outside at no extra charge.

Has angle X-type weatherproof separable fitting with set screw. Tapped $\frac{1}{2}$ inch, standard; $\frac{3}{4}$ inch, if specified. Has one-piece porcelain, medium base rigid keyless socket with lamp grip to retard loosening of lamps under vibration.

Packed 9 in a standard package.

SELF-LOCKING SOCKET prevents unauthorized lamp removal. Supplied in place of rigid socket at 50 cents advance in list. To order, suffix reflector number with LOK.

SHOCK-ABSORBING SOCKET lengthens lamp life by protecting the filament from vibration. Supplied in place of rigid socket at 10 cents advance to reflector list. To order, suffix reflector number with SHB.

SHOCK-ABSORBING SELF-LOCKING SOCKET is supplied in place of rigid socket at 60 cents advance in reflector list. To order, suffix reflector number with ASL.

Key No. 1399, to release lamp, \$1.00.

No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Width In.	Wt., Lb. Std. Pkg.	Ship.
5570	\$3.60	100, 150	13 $\frac{1}{2}$ x9 $\frac{1}{8}$	8 $\frac{3}{4}$	8 $\frac{3}{8}$	33	
5571	4.20	150, 200	13 $\frac{1}{2}$ x9 $\frac{1}{8}$	9 $\frac{1}{4}$	10 $\frac{1}{8}$	35	

Prices do not include wires or lamps.

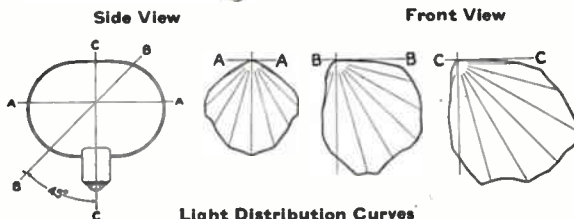
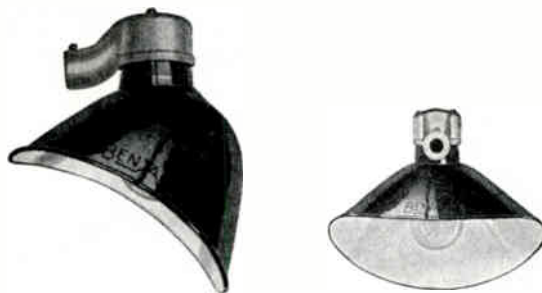
Table of Spacing Distances For Standard Poster Panels

Size Board	*No. Reflectors Required	Dist. Out	Dist. from End	Dist. Apart	*SIZE LAMP, WATTS FOR LOCATIONS		
					Bright	Ordinary	Dark
11'10"x25'	3	5'	4'2"	8'4"	200	150	100
8'x5'10"	1	4'	.....	.....	200	150	100
For 3-Sheet Poster Panels							
11'6"x11'6"	2	5'	2'10"	5'10"	150	100	...
11'6"x16'5"	2	5'	4'1"	8'3"	200	150	100
11'6"x21'4"	3	5'	3'7"	7'1"	200	150	100
11'6"x26'3"	4	5'	3'3"	6'7"	200	150	100
For Standard Highway Bulletins							
12'6"x42'	5	5'3"	4'4"	8'4"	200	150	100
For Standard City or Suburban Bulletins							
12'6"x47'	6	5'3"	3'11"	7'10"	200	150	100
For Railroad, Metropolitan or Highway Bulletins							
18' x72'	6	8'6"	6'	12'	500	300	200
For Roof and Wall Signs							
† 2' to 4'	...	2'6"	2'6"	5'	100	...	...
† 5' to 6'	...	3'6"	3'	6'	150	100	...
† 7' to 8'	...	4'	3'3"	6'6"	200	150	100
† 9' to 12'	...	5'	4'	8'	...	200	150
† 13' to 15'	...	6'6"	5'	10'	...	...	200
† 16' to 18'	...	8'6"	6'6"	13'	...	...	200

*For dark color boards, higher wattage lamps or more reflectors per board should be used to overcome light absorption.

†Height of sign.

Benjamin Angle-Hood Master Sign Reflectors



Light Distribution Curves

Designed to provide uniform illumination of display boards. Arranged for base-up burning position of the lamp making it possible to service these reflectors from the ground by use of any standard lamp changer. This is accomplished by use of an angle-type cast hood.

Elliptical shaped reflector is porcelain enameled steel. Regularly finished green outside, reflecting white inside; can be furnished white outside at no extra charge.

Cast iron hood is tapped $\frac{1}{2}$ inch standard, $\frac{3}{4}$ inch when specified. Has one-piece porcelain, medium base, rigid socket. Front of reflector to back of hood, 6 $\frac{1}{4}$ inches.

Packed 9 in a standard package.

SELF-LOCKING SOCKET prevents unauthorized lamp removal. Supplied in place of rigid socket at 50 cents advance in list. To order, suffix reflector number with LOK.

SHOCK-ABSORBING SOCKET lengthens lamp life by protecting the filament from vibration. Supplied in place of rigid socket at 10 cents advance to reflector list. To order, suffix reflector number with SHB.

SHOCK-ABSORBING SELF-LOCKING SOCKET is supplied in place of rigid socket at 60 cents advance to reflector list. To order, suffix reflector number with ASL.

Key No. 1399, to release lamp, \$1.00.

No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Wt., Lb. Std. Pkg.	Ship.
5575	\$3.50	75, 100	13 $\frac{1}{2}$ x9 $\frac{1}{8}$	10 $\frac{7}{8}$	43	
5576	3.60	150	13 $\frac{1}{2}$ x9 $\frac{1}{8}$	11 $\frac{3}{4}$	45	

Prices do not include wires or lamps.

Table of Spacing Distances For Standard Poster Panels

Size Board	*No. Reflectors Required	Dist. Out	Dist. from End	Dist. Apart	*SIZE LAMP, WATTS FOR LOCATIONS		
					Bright	Ordinary	Dark
11'10"x25'	3	5'	4'2"	8'4"	200	150	100
8'x5'10"	1	4'	.....	.....	200	150	100
For 3-Sheet Poster Panels							
11'6"x11'6"	2	5'	2'10"	5'10"	150	100	...
11'6"x16'5"	2	5'	4'1"	8'3"	200	150	100
11'6"x21'4"	3	5'	3'7"	7'1"	200	150	100
11'6"x26'3"	4	5'	3'3"	6'7"	200	150	100
For Standard Highway Bulletins							
12'6"x42'	5	5'3"	4'4"	8'4"	200	150	100
For Standard City or Suburban Bulletins							
12'6"x47'	6	5'3"	3'11"	7'10"	200	150	100
For Railroad, Metropolitan or Highway Bulletins							
18' x72'	6	8'6"	6'	12'	500	300	200
For Roof and Wall Signs							
† 2' to 4'	...	2'6"	2'6"	5'	100	...	...
† 5' to 6'	...	3'6"	3'	6'	150	100	...
† 7' to 8'	...	4'	3'3"	6'6"	200	150	100
† 9' to 12'	...	5'	4'	8'	...	200	150
† 13' to 15'	...	6'6"	5'	10'	...	...	200
† 16' to 18'	...	8'6"	6'6"	13'	...	...	200

*For dark color boards, higher wattage lamps or more reflectors per board should be used to overcome light absorption.

†Height of sign.

Benjamin Rexide Sign Reflectors

For Uniform Lighting of Rectangular and Square Signs

Listed by Underwriters' Laboratories



Side View



Front View



Typical Curve

Designed for uniform lighting of square and rectangular signs, where a reflector shape is desired which closely parallels the contour of the sign in general appearance.

The side outlet hood eliminates conduit bendings; prevents shifting or displacement in position of reflectors with reference to the sign. Reflector and hood are separate units, joined by a locking arrangement controlled by two screws on the outside of the

hood. With the reflector removed, the socket is easily accessible. Reflector heel may be rotated and locked in the hood at any point.

Electro-plated cast iron hood is tapped 1/2 inch standard, 3/4 inch if specified. One-piece porcelain socket, No. 2101. Porcelain enameled steel reflector with closed bead which eliminates starting points for corrosion.

Reflector is green outside, white inside; available red outside, when specified, at no extra charge.

Packed 10 in a standard package.

No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Width In.	Ship. Wt., Lb. Std. Pkg.
5705	\$2.50	60, 75, 100	7 7/8 x 6 5/8	9 3/4	5 7/8	28 1/2
5706	3.60	150	9 3/8 x 8 1/8	10 3/4	7 1/4	37 1/2

Prices do not include wires or lamps.

Mounting Data

Square signs of the approximate dimensions shown in table are lighted suitably with one reflector on each side. Best results are obtained by centering the reflector in relation to the sign with the top edge of the reflector level with top of sign.

On rectangular signs requiring more than one reflector on each side, the spacing distance between reflectors should not exceed twice the distance from the sign.

Height of Sign Feet	Distance from Sign Feet	SIZE LAMP, WATTS *FOR LOCATIONS		
		Dark	Average	Bright
18	9	60	60	75
21	10 1/2	60	75	100
24	12	60	75	100
27	13 1/2	60	75	100
30	15	75	100	150
33	16 1/2	75	100	150
36	18	75	100	150
42	21	75	100	150
48	24	75	100	150
54	27	100	150	...
60	30	100	150	...
66	33	150	...	...
72	36	150	...	...

*For dark colored signs, or where higher intensities are desired, follow lamp recommendations for next brighter location.

Benjamin Emblem Sign Reflectors

Listed by Underwriters' Laboratories



For lighting circular emblem signs of the type used around automobile service and gasoline filling stations and other similar small signs.

When installed as recommended, this reflector is neat and inconspicuous and does not interfere with the readability of the sign, day or night.

Conduit is led straight into side outlet of reflector hood. Hood, with reflector, is screwed to conduit, and drilled for attaching guy wires. Cast iron hood is electroplated; side outlet tapped for 1/2 inch standard, 3/4 inch when specified.

Has one-piece porcelain sockets, with easily accessible terminal screws. Symmetrical reflector, is porcelain enameled steel, green outside and white inside.

Packed 10 in a standard package.

No.	S1821-I.	S1822-L	S1823-I.
Each	\$2.20	2.20	2.50
Size Lamp	watts 50-60	75-100	150
Height	inches 9 3/8	10 1/8	12 3/8
Diameter	inches 8	8	10
Ship. Wt. per Std. Pkg.	27	30	35

Benjamin Steelite Armor-Clad Lighting Units

Listed by Underwriters' Laboratories



Designed to stand up under severe mechanical strain and unfavorable atmospheric conditions.

Consists of a highly efficient Alzak aluminum reflector, enclosed in a protective steel housing to guard against damage caused by rough handling or from flying metal particles. The bottom of this housing is sealed against dust, moisture, and corrosive fumes by

a hinged cover, equipped with heat and impact-resisting glass which offers resistance to sudden impacts and is impervious to temperature changes.

Diameter of reflector, 18 inches. Overall diameter, 20 1/2 inches.

Concentrating units. Recommended for lighting relatively small areas to a high intensity or for use where units must be mounted a considerable distance from the lighted surface. Equipped with an Alzak reflector having a satinized polished reflecting surface.

Medium spread units. Recommended for lighting high narrow bays. Equipped with an Alzak reflector, with inner surfaces of etched aluminum, which concentrates light directly below the unit with most favorable illumination on horizontal surfaces.

Wide spread units. For general industrial lighting; have an Alzak reflector with inner surfaces of etched aluminum. Provides a relatively broad distribution of light and gives uniform illumination on both horizontal and vertical surfaces.

Provided with X-type separable fitting tapped 1/2 inch standard, 3/4 inch if specified. Sockets are keyless, rigid, mogul base type with finger type lamp grip.

Packed 1 in a standard package.

Type of Distribution	For 750-1500-Watt Lamps		For 400-Watt Mercury Lamps		Recom. Mtg. Ht. Ft.	Ht. In.	Ship. Wt. Lb. Std. Pkg.
	No.	Each	No.	Each			
Concentrating	5280	\$34.50	5285	\$34.50	Over 46	19	..
Medium Spread	5281	32.50	5286	32.50	35-45	17 1/2	..
Wide Spread	5282	32.50	5287	32.50	18-34	17 1/2	..

SHOCK-ABSORBING SOCKETS supplied at 10 cents advance in list price. To order, suffix number with SHB.

Benjamin Stock-Bin-Lite Reflectors

Listed by Underwriters' Laboratories



No. T-1876

For the lighting of stock-room bins and shelves, tool crib bins and shelves, stock-room carton stacks, file rooms, library book stacks and warehouse aisles.

Special deep-trough shaped reflector is porcelain enameled steel, white inside and out. Has apertures in each end to assist in building up illumination at points farthest away. Interchangeable in any of the hoods shown. Can be turned in hoods to any desired position and locked in place by

tightening two screws on sides of hoods. Width of reflector, 7 $\frac{1}{8}$ inches. Reflector should be mounted level with the top of the highest bin of shelf and the spacing distance between reflectors should never exceed 8 feet. A V-shaped deflector bar, 11 $\frac{1}{8}$ inches long, is suspended below reflector to direct a portion of the light upward above the cutoff.

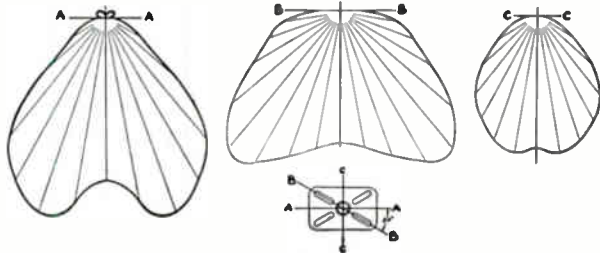
Cast iron hoods, electro-plated, are available in pendent, angle, feed-through and outlet box. Pendent and angle hoods tapped $\frac{1}{2}$ inch standard, $\frac{3}{4}$ inch when specified (angle also 1 inch), without extra charge. Feed-through hood tapped $\frac{1}{2}$ inch only. Ceiling hood fits 4-inch standard outlet boxes.

One-piece porcelain, rigid, keyless sockets are standard.

Complete unit consists of hood with reflector and socket.

Packed 10 in a standard package.

Pull Chain Sockets can be supplied, when specified, at 80 cents advance in list price. When ordering, add suffix PUL to number of fixture.



Typical Curves

Pendent Hood Units

No.	Each	*Size Lamp Watts	Height Inches	Ship. Wt., Lb. Std. Pkg.
E-1875	\$3.50	60	9 $\frac{3}{4}$	56 $\frac{1}{2}$
E-1876	3.75	75, 100	10 $\frac{3}{4}$	56 $\frac{1}{2}$
E-1877	4.00	150	11 $\frac{1}{8}$	56 $\frac{1}{2}$

Angle Hood Units

L-1875	\$3.50	60	10 $\frac{1}{8}$	56 $\frac{1}{2}$
L-1876	3.75	75, 100	11	56 $\frac{1}{2}$
L-1877	4.00	150	11 $\frac{7}{8}$	56 $\frac{1}{2}$

Feed-Through Hood Units

T-1875	\$3.65	60	10 $\frac{1}{8}$	57 $\frac{1}{2}$
T-1876	3.90	75, 100	11	57 $\frac{1}{2}$
T-1877	4.15	150	11 $\frac{7}{8}$	57 $\frac{1}{2}$

Ceiling Hood Units

C-1875	\$3.50	60	9 $\frac{1}{4}$	59
C-1876	3.75	75, 100	10 $\frac{1}{4}$	59
C-1877	4.00	150	11 $\frac{1}{8}$	59

*Inside frosted lamps are recommended.

Prices do not include wires or lamps.

Benjamin Pit and Tunnel Lighting Units

For Multiple Circuits

Listed by Underwriters' Laboratories



Proper lighting of pit interiors and vehicles over the pits, lessens the danger of accidents to workers and increases their speed and effectiveness.

The tough-shaped porcelain enameled steel reflector assures maximum light output, while the refracting glass cover concentrates the major portion of the light on the underside of the object over the pit.

Suitable for built-in or surface installation in locations like automobile service and greasing pits, railway and traction line repair pits, viaducts, tunnels and similar locations. In some types of locations, such as viaducts, tunnels and subways, where lighting requirements are of a general nature, the pit light with a plain glass cover will be found more satisfactory than the refracting.

Fixture consists of a cover and a cast iron box which are held together by four bolts. Cover includes a cast iron frame, a heat-resisting glass cover, a double rubber gasket, which seals cover frame to box and glass to cover frame, and a brass wire guard.

Cast iron box includes a porcelain enameled steel trough-shaped reflector and a keyless socket. Body is tapped $\frac{1}{2}$ -inch iron pipe size at both ends. When specified on order, body will be tapped either $\frac{3}{4}$, 1 or $1\frac{1}{4}$ -inch iron pipe size, at no advance in list price.

Packed 1 in a standard package.

Size Lamp Watts	With Refracting Glass Cover		With Plain Glass Cover		Depth In.	Lgth. In.	Width In.	Ship. Wt., Lb. Std. Pkg.
	No.	Each	No.	Each				
100, 500	5715	\$18.00	5710	\$18.00	6 $\frac{1}{2}$	12 $\frac{5}{8}$	8 $\frac{3}{8}$	24
*200	5720	20.00	5717	20.00	7 $\frac{1}{2}$	13	8 $\frac{3}{8}$	28

*With wire clamp for feed wires.

Prices do not include wires or lamps.

Benjamin Warning Signal Lens Crossing Reflectors With Bull's Eye

Provides a red light for a warning signal and a white light to show the way or illuminate obstructions. The light shining through the red Fresnel glass lens in back of reflector, warns drivers to approach cautiously.

Can be furnished with steel wire guard; prices on request.

Packed 10 in a package.

SHOCK-ABSORBING SOCKETS supplied in place of rigid type, at advance of 10 cents in list price. To order, suffix number with SHB.

No. 5566 Symmetrical Angle Shape For 60-100-Watt Lamps



Porcelain enameled steel reflector, 12 inches in diameter and 13 $\frac{7}{8}$ inches in height.

Has 3 $\frac{1}{2}$ -inch red Fresnel lens in back.

Includes No. 4688 socket and X-type fitting assembly; tapped, $\frac{3}{4}$ inch.

Shipping weight per standard package, 47 $\frac{1}{2}$ pounds.

No. 5566, Complete... each \$5.50

No. 4688, Socket and Fittings..... each 1.05

No. 32613 Elliptical Angle Shape For 25 and 40-Watt Lamps



Porcelain enameled steel reflector, 9 $\frac{1}{2}$ x12 $\frac{3}{4}$ inches in diameter and 9 $\frac{1}{2}$ inches in height.

Has 3 $\frac{1}{2}$ -inch red Fresnel lens in back. Includes No. 4665 socket and X-type fitting assembly; tapped, $\frac{3}{4}$ inch.

Shipping weight per standard package, 37 pounds.

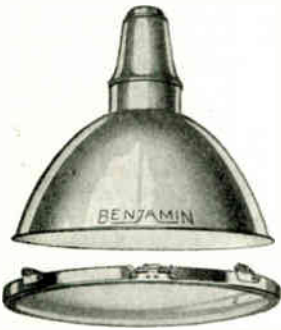
No. 32613, Complete... each \$5.50

Benjamin Concentrating Type Alzak Aluminum Reflectors

For Lighting High Narrow Bays
Listed by Underwriters' Laboratories

Benjamin Spread Type Alzak Aluminum Reflectors

For General Lighting Installation
Listed by Underwriters' Laboratories



No. 4166 Socket-Reflector with No. N-6416 Dust-Tight Cover



No. 9168, Turnlox Ceiling Construction



No. 4178, Socket-Reflector Construction



No. 7174, Turnlox Pendant Construction



Typical Curve

Recommended for lighting high, narrow rooms, requiring not more than three rows of units, as these reflectors concentrate light on the working plane directly below the units with the most favorable illumination on horizontal surfaces. Suitable for installation where the mounting height of the reflector is equal to or greater than the width of the area to be lighted.

Also satisfactory for use as medium-range open type floodlights.

The spacing distance between units should never exceed the mounting height.



Typical Curve

Suitable for general lighting installations where a relatively broad distribution of light and uniform illumination is desired.

Also used as an open type floodlight, where it is desired to cover a relatively large area at close range.

Spacing distance between units should never exceed one and one-half times the mounting height.

TURNLOX; weatherproof bayonet mechanism permits removal of reflector and lamp from hood as a unit, for cleaning or storage. Supplied with Turnlox hoods and No. 2760 rigid, keyless, mogul base lamp holder. Pendant and angle hoods tapped $\frac{1}{2}$ inch standard, $\frac{3}{4}$ inch when specified. Ceiling hoods fit $3\frac{1}{4}$ or 4-inch standard octagonal or round outlet boxes, $1\frac{1}{2}$ inches or more deep.

SOCKET-REFLECTOR; standard Socket-Reflector, separable X-type fittings and No. 4657 keyless, rigid, mogul base sockets. Fitting tapped $\frac{1}{2}$ inch standard, $\frac{3}{4}$ inch when specified.

Reflectors are Alzak oxidized etched aluminum inside, aluminum outside. Caps on X-type fittings are cast aluminum. Turnlox hoods, electro-plated.

Packed 4 in a standard package.

TURNLOX; weatherproof bayonet mechanism permits removal of reflector and lamp from hood as a unit, for cleaning or storage. Supplied with Turnlox hoods and No. 2760 rigid, keyless, mogul base lamp holder. Pendant and angle hoods tapped $\frac{1}{2}$ inch standard, $\frac{3}{4}$ inch when specified. Ceiling hoods fit $3\frac{1}{4}$ or 4-inch standard octagonal or round outlet boxes, $1\frac{1}{2}$ inches or more deep.

SOCKET-REFLECTOR; standard Socket-Reflector, separable X-type fittings and No. 4657 keyless, rigid, mogul base sockets. Fitting tapped $\frac{1}{2}$ inch standard, $\frac{3}{4}$ inch when specified.

Reflectors are Alzak oxidized etched aluminum inside; natural Alzak outside. Caps on X-type fittings are cast aluminum. Turnlox hoods are electro-plated.

Packed 4 in a standard package.

For 300-500-Watt Lamps

No.	Each	Type of Construction	Diam. In.	Ht. In.	Ship. Wt., Lb. Std. Pkg.
7166	\$12.40	Turnlox Pendant	16	15 $\frac{3}{4}$	28
9166	12.40	Turnlox Ceiling	16	15 $\frac{3}{8}$	28
3166	12.40	Turnlox Angle	16	16 $\frac{3}{8}$	27
4166	12.00	Socket-Reflector	16	14	21

For 750-1500-Watt Lamps

7168	\$14.90	Turnlox Pendant	18	20 $\frac{7}{8}$	34
9168	14.90	Turnlox Ceiling	18	20 $\frac{1}{2}$	34
3168	14.90	Turnlox Angle	18	21 $\frac{1}{2}$	34
4168	14.50	Socket-Reflector	18	19 $\frac{1}{8}$	28

Prices do not include wires or lamps.

SHOCK-ABSORBING HOLDERS AND SOCKETS; supplied in place of rigid type holder and sockets at 10 cents advance in list price. To order, suffix number with SHB.

For 300-500-Watt Lamps

No.	Each	Type of Construction	Diam. In.	Ht. In.	Ship. Wt., Lb. Std. Pkg.
7174	\$10.40	Turnlox Pendant	14	15 $\frac{3}{4}$	27
9174	10.40	Turnlox Ceiling	14	15 $\frac{3}{8}$	27
3174	10.40	Turnlox Angle	14	16 $\frac{3}{8}$	26
4174	10.00	Socket-Reflector	14	14	18

For 750-1500-Watt Lamps

7176S	\$12.40	Turnlox Pendant	16	18 $\frac{1}{2}$	28
9176S	12.40	Turnlox Ceiling	16	18 $\frac{3}{16}$	28
3176S	12.40	Turnlox Angle	16	19 $\frac{1}{16}$	27
4176S	12.00	Socket-Reflector	16	17 $\frac{3}{16}$	21
7178	14.90	Turnlox Pendant	18	19 $\frac{3}{4}$	33
9178	14.90	Turnlox Ceiling	18	19 $\frac{3}{8}$	33
3178	14.90	Turnlox Angle	18	20 $\frac{3}{8}$	32
4178	14.50	Socket-Reflector	18	18	26

Prices do not include wires or lamps.

SHOCK-ABSORBING HOLDERS AND SOCKETS; supplied in place of rigid type holder and sockets at 10 cents advance in list price. To order, suffix number with SHB.

Thompson Lamp Lowering Hangers



A Typical High Bay Installation, Partially Lowered

The Thompson Hanger is essentially an overhead disconnecting switch supporting a lighting fixture. By manipulation of a light chain or cable from the ground or floor, the fixture may be disconnected electrically and mechanically from the circuit and lowered to the desired working level. When servicing is completed, the fixture may be pulled up and latched in operating position.

It is adapted for use with practically any type of lighting unit. A variety of adapter connections, all interchangeable, are available for this purpose. When equipped with the radial adjustment adapter, the hanger may be used with bail or yoke suspended floodlights.

Rated at 15 amperes, 600 volts and approved by Underwriters', this hanger is applicable to all usual lighting circuits except high tension series.

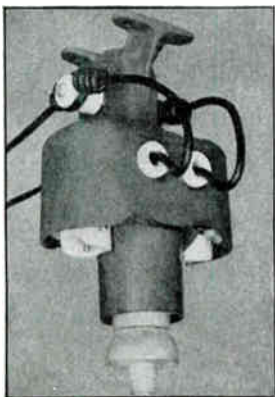
Thompson Hangers are furnished in three finishes: black Japan, cadmium plated, and hot-dip galvanized. Black Japan is considered standard finish except with Nos. 1137 and 1177, and the unit packages which are hot-dip galvanized only. Black Japan will be furnished unless another finish is specified.

For cadmium plate finish, add the letters SA, and for hot-dip galvanized finish, add the letters SB to the hanger number; for either finish, add \$1.00 to the standard price. For two-piece deep canopy hangers add \$1.20.

Standard finish now includes the lock beam stem making all types of adapters interchangeable and making the hangers adaptable to angle type and directed-ray reflectors and to fluorescent tube or mercury vapor units. Axle bolts, nuts, rivets and washers, and all contact screws, nuts and washers are Everdur or Olympia metal.

Unit packages are available with complete equipment for pipe bracket mountings from pole or wall, indoors or out, single or group mountings.

Indoor Models for Open Wiring



No. L112

No. L112 has a medium depth canopy adapted to indoor use. Provided with an open type sheave housing, it may be used on sloping or arched structures as well as flat construction. Two porcelain bushings in the canopy and porcelain insulator knobs on the sheave housing adapt it to open wiring installations.

The same hanger, but without the porcelain insulator knobs is No. L111.

Other models are provided by the substitution of the semi-enclosed and seal type sheave housings.

No.	Black Japanned, Each	Insulator Knobs	Type of Sheave Housing
L111	\$10.20	Without	Open Face
L112	10.40	With	Open Face
L113	10.60	Without	Semi-enclosed
L114	10.80	With	Semi-enclosed
L115	11.00	Without	Seal type

Thompson Lamp Lowering Hangers



No. L121

No.	Black Japanned, Each
L121	\$10.00
L123	10.40
L125	10.80

Indoor Models for Conduit Wiring

These models all provide for 1/2-inch conduit wiring connection to the face of the canopy.

They may have the open type sheave housing as shown, necessary with sloping or arched construction, or the semi-enclosed or seal type sheave housing with flat construction for maximum protection.

Insulator Knobs	Type of Sheave Housing
Without	Open Face
Without	Semi-enclosed
Without	Sealtype



Ball Suspended Floodlight—Unit Package 1177, 1 1/4 or 1 1/2 inches



No. L125

Sealtype Models

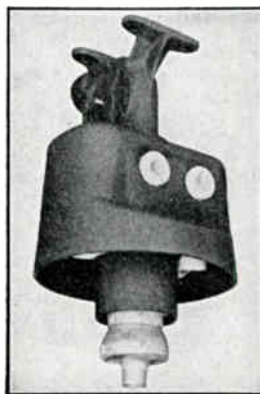
Sealtype hangers have fully enclosed sheave wheels and a threaded connection for 3/4-inch conduit to enclose the chain or cable.

They provide the maximum protection against dirt and corrosion and conceal the chain or cable.

At the same time, they provide maximum accessibility.

Sealtype hangers can only be used where chain or cable leaves the hanger in a horizontal plane.

Outdoor Models



No. L155

These models are all provided with the deep skirted canopy to afford maximum weather protection for outdoor use. They are made in the open wiring types with porcelain bushings and with or without porcelain insulator knobs, and in the conduit connected types.

They are available with any of the three types of sheave housings, open face, semi-enclosed, or sealtype. The sealtype should be used if possible to avoid water following the chain or cable into the hanger and freezing.

No.	Black Japanned, Each	Open Wire Types	
		Insulator Knobs	Type of Sheave Housing
L151	\$11.20	Without	Open Face
L152	11.40	With	Open Face
L153	11.60	Without	Semi-enclosed
L154	11.80	With	Semi-enclosed
L155	12.00	Without	Sealtype
Conduit Connected Types			
L161	\$11.00	Without	Open Face
L163	11.40	Without	Semi-enclosed
L165	11.80	Without	Sealtype

Thompson Lamp Lowering Hangers

Indoor and Outdoor Models



No. L177

These two hangers, No. L137 with medium canopy for indoor use and No. L177 with deep skirted canopy for outdoor use, are most versatile. The sheave housings are of the sealtype, and combine a threaded connection for 1/2-inch wiring conduit directly into an enclosed passage with protected entrance into the top of the canopy. They are applicable to mounting on flat surfaces adjacent to a standard outlet box with direct nipple connection, to the new recessed and concealed mounting, to pipe bracket or catenary suspension, and to sloping or curved surfaces by means of Thompson gravity suspension fittings. The V-notch in the centers of the bolting lugs center the hangers on pipe

or suspension wire when so mounted.

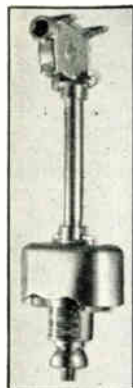
When used with the slip fit elbow and bracket end, they provide fully enclosed wiring for pipe bracket mounting from wall, column, or pole. They may be equipped with radial adjustment adapters, and used with bail or yoke suspended floodlights.

Indoor Medium Canopy

No.	Description	Black	Cadmium	Hot-Dip
		Japanned	Plated	Galvanized
		Each	Each	Each
L137	Standard Lock-Beam Stem.....	\$12.00	\$13.00	\$13.00
1137	Special Lower Member, Lock-Beam Stem and Radial Adapter.....			17.00

Outdoor Deep Canopy

L177	Standard Lock-Beam Stem.....	\$13.00	\$14.00	\$14.00
1177	Special Lower Member, Lock-Beam Stem and Radial Adapter.....			18.00



No. 2123

Duplex Hangers

Where the hanger anchorage is high above the lighting fixture, the duplex construction is desirable to eliminate the necessity of lowering and raising long drop stems.

Any length of 3/4-inch conduit stem may be used between the canopy and the sheave housing.

This construction may be applied to any hanger models except Nos. L137 and L177.

Duplex construction is indicated by adding 2000 to the standard hanger number, and adding \$1.00 for Japan finish and \$1.20 for cadmium-plated finish.

Two-Piece Canopy Models

All hanger models, except Nos. L137 and L177, can be supplied with two-piece canopies which permit ready access to the interior of the hanger for installation, inspection and cleaning.

Model numbers are the same as for one-piece canopies except that they are in the L200 series instead of L100.

Add 60 cents to the price of the corresponding one-piece model.

Thompson Shock Absorbers



X-Ray View

These shock absorbers may be used either with Thompson Hangers or separately. Designed primarily to protect lighting fixtures from shock and vibration, they are also adaptable to many other uses.

Simple and rugged in construction, easy to install and without a bolt, screw or nut to work loose, they afford maximum protection with long trouble-free life.

There are two sizes and three types, and a range of springs to cover suspended weights from 1 1/2 to 65 pounds.

Finish: junior size, cadmium plated; heavy duty size, hot dip galvanized. Bottom fixture connection on all models is 1/2-inch male pipe thread.

Junior Size				Heavy Duty Size			
TOP CONNECTION		Each	Total Weight of Fixture	TOP CONNECTION		Each	Total Weight of Fixture
1/2-Inch Female	3/4-Inch Male			1/2-Inch Female	3/4-Inch Male		
No.	No.			No.	No.		
10L	20L	\$1.30	1 1/2 - 5	50L	60L	\$2.20	5-12
10M	20M	1.30	3 - 8	50M	60M	2.20	9-25
10H	20H	1.30	5 -12	50H	60H	2.30	15-40
.....	.....	.....	.....	50HH	60HH	2.30	30-65

Heavy Duty Loop Suspension

The Series 70 Shock Absorbers, having the stem split part way from the top, is designed for free swing suspension and serves both as a shock absorber and adapter.

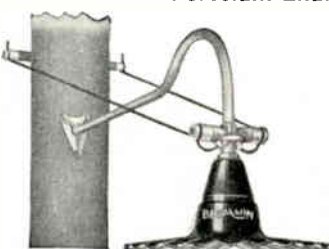
No.	70L	70M	70H	70HH
Each	\$2.30	2.30	2.40	2.40
Total Weight of Fixture..pounds	5-12	9-25	15-40	30-65

Thompson Accessories

A full line of accessory fittings is available, including pulleys of various types, beam clamps, suspension fittings, screw plates, pole and wall plates, U-bolts, pipe and span wire clamps, swing loops, lock boxes, grip cleats, flare ends, bracket ends, etc. These parts are suitable for every conceivable type of installation.

Complete information and prices furnished on request.

Benjamin Radial Wave Outdoor Reflectors Porcelain Enameled Steel



No. 1206

Reflector is 18 inches in diameter, of porcelain enameled steel; green outside, reflecting white inside.

Supplied with porcelain rigid, keyless socket and separable X-type fittings, tapped 1/2 or 3/4 inch.

Fittings, goosenecks and brackets, electro-plated.

Packed 5 in a standard package.

With Gooseneck Supports

Has socket fitting assembly, No. 4665 medium base and No. 4666 mogul base; No. 5037, 40x3/4-inch gooseneck. Nos. 1204 and 1205 include No. 5031 wall fitting; Nos. 1206 and 1207 have No. 5027 wall fitting and No. 6203 cross arm. Tapped 3/4 inch.

Size Lamp Watts	Concealed Wiring			Open Wiring		
	No.	Each	Wt., Lb. Std. Pkg.	No.	Each	Wt., Lb. Std. Pkg.
150,200	1204	\$6.95	86	1206	\$8.15	87
300,500	1205	8.45	91	1207	9.65	92

With Ornamental Brackets

Socket-fitting assembly is No. 4651 medium base, and No. 4657 mogul base. Supplied with No. 5040 40-inch iron bracket, with wall fitting. Tapped 1/2 inch.

150,200	1208	\$8.80	97	.....	.....	.....
300,500	1209	10.30	102	.....	.....	.....

Without Gooseneck or Ornamental Brackets

Consists of radial wave reflector used on above fixtures in combination with socket-fitting assembly tapped 1/2 inch, regularly supplied on Nos. 1208 and 1209. When specified, tapped 3/4 inch, as supplied on Nos. 1204 to 1207, without extra charge.

150,200	1214	\$5.00	44	.....	.....	.....
300,500	1218	6.50	46	.....	.....	.....

SHOCK-ABSORBING SOCKETS can be supplied when specified at 10 cents advance. To order, suffix number with SHB.

Benjamin Unit Package Fixtures

Listed by Underwriters' Laboratories

Unit consists of a durable porcelain enameled steel reflector, a detachable cast iron hood, No. 2101 medium base receptacle (does not apply to Nos. 1912, 1914 and 1916 reflectors), a section of 1/2-inch conduit with wall or outlet box fitting and two 24-inch lengths of No. 14 gage rubber covered solid copper single conductor wire. The conduit entrance in both hood and fitting have set screw to prevent accidental loosening of assembly.

Reflector is green outside, white inside. Hood, conduit section and mounting fitting is sprayed aluminum over electro-plating.

Prices do not include lamps.

Dome Reflectors with Brackets



For lighting entranceways, drives, gardens, roads and camps. Supplied with a 17 1/2 inch length of 1/2 inch conduit and fitting.

Packed 1 in a standard package.

No.	Each	Size Lamp Watts	Type Fitting	Style Wiring	Ref. Diam. In.	Ship. Wt., Lb. Std. Pkg.
1941	\$3.65	75, 100	Wall	Open	12	6 1/4
1941-A	3.65	75, 100	Wall or O.B.	Conceal	12	6 1/4
1942	3.85	150	Wall	Open	14	8 3/4
1944	4.40	200	Wall	Open	16	8 3/4

Flat Cone Reflectors with Brackets



Used for lighting farm yards, alleys, gardens. Supplied with a 19 1/4-inch length of 1/2 inch conduit and wall fitting. Two lag screws supplied for attachment.

Packed 1 in a standard package.

1943	\$3.65	75,100	Wall	Open	14	7
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Angle Reflectors with Brackets



For lighting from the side and for signs. Reflector can be positioned at any point in hood. Supplied with a 17 1/2-inch length of 1/2 inch conduit and fitting.

Packed 1 in a standard package.

No.	Each	Size Lamp Watts	Type Fitting	Style Wiring	Ref. Diam. In.	Ship. Wt., Lb. Std. Pkg.
1938	\$2.85	75, 100	Wall	Open	8	5 1/2
1938-A	2.85	75, 100	Wall or O.B.	Conceal	8	5 1/2

Shallow Dome Reflectors with Brackets



For lighting farmyards, barns, stables and driveways. Supplied with a 16-inch length of 1/2-inch conduit and wall fitting. Two lag screws are furnished for attachment.

Packed 5 in a standard package.

1912	\$2.50	....	Wall	Open	12	....
1914	2.75	....	Wall	Open	14	....
1916	3.10	....	Wall	Open	16	....

Benjamin Canopy Diffusers

For 75-150-Watt Lamps

Listed by Underwriters' Laboratories



No. 5665C

Designed for semi-flush mounting under canopies or eaves of service stations, etc. Consists of a cast iron, electroplated junction box hood with receptacle and threaded neck, oxidized aluminum reflector to which is attached an opal glass diffusing globe. Medium base porcelain receptacle gasketed to box cover.

Reflector, 10 inches in diameter; threads into hood cover plate. Globe attached to reflector bead by removable aluminum clamping band.

Hoods tapped 1/2 inch standard, 3/4 inch when specified. Packed 2 in a standard package.

No.	Each	Hood Tapping	Wt., Lb. Std. Pkg.
5665V	\$8.20	1/2-Inch, One Side.....	20
5665C	8.30	1/2-Inch, Feed Through.....	21
5665L	8.30	1/2-Inch, Right Angle.....	21
5665T	8.40	1/2-Inch, Three Sides.....	22
5665X	8.50	1/2-Inch, Four Sides.....	24

No. 5669 Finishing Rings

Covers opening around fixture where reflector bead is mounted flush with mounting surface. Etched aluminum finish, both sides; for Alzak finish, add 50 cents each.

Packed 2 in a standard package; weight, 2 1/2 pounds. No. 5669..... each \$1.40

No. 5670 Rainproof Covers

Porcelain enameled steel cover prevents rains from seeping through opening around unit in sheet steel canopy installations.

Packed 2 in a standard package; weight, 4 pounds. No. 5670..... each \$1.50

Benjamin Hinged Dust Tight Glass Covers



Complete cover consists of a two-piece electroplated steel retaining band, circular asbestos gasket and a cover glass.

Daylight glass covers provide correction for all but the most exacting color matching. For more correction use daylight lamps with daylight glass cover.

Heat and impact-resisting glass covers will withstand the effects of sudden temperature changes without injury.

Packed 5 in a standard package.

Plain Clear Glass Covers

For Reflector Diameter In.	Complete			Glass Only		
	No.	Each	Ship. Wt., Lb. Std. Pkg.	No.	Each	Ship. Wt., Lb. Std. Pkg.
8	N-6408	\$2.30	8 1/4	6458	\$.70	6
9	N-6409	2.40	9 1/2	6459	.80	7
10	N-6410	2.50	10 1/2	6460	.90	8
12	N-6412	2.70	13 1/2	6462	1.00	11
14	N-6414	3.10	19	6464	1.20	14
16	N-6416	3.60	23 1/2	6466	1.40	21
18	N-6418	4.10	28	6468	1.80	24
20	N-6420	5.70	34 1/2	6470	2.60	31
22	N-6422	7.80	51	6472	4.00	35

Plain Daylight Glass Covers

10	N-6610	\$4.00	8 1/4	6580	\$2.40	7
12	N-6612	5.00	13 1/2	6582	3.30	11
14	N-6614	6.30	19	6584	4.40	14
16	N-6616	7.80	23 1/2	6586	5.70	21
18	N-6618	8.60	28	6588	6.30	24
20	N-6620	12.90	34 1/2	6590	10.20	31

Heat and Impact-Resisting Glass Covers

14	6384	\$7.90	29	6234	\$6.00	24
16	6386	10.10	36	6236	7.90	30
18	6388	14.30	45	6238	12.00	38

Benjamin Universal Joint 45° Aligners

Outlet Box Cover Type

Listed by Underwriters' Laboratories



Consists of a steel pipe bushing, tapped 1/2 or 3/4 inch, which swings forward or back on two pivot studs joining it to a steel cup. In turn, this cup is hinged to the steel cover of the aligner to allow movement in a plane at right angles to the first, thus providing free movement through 45° in any direction. Sprayed aluminum finish over electro-plating.

Packed 10 in a standard package; weight, 5 1/2 pounds.

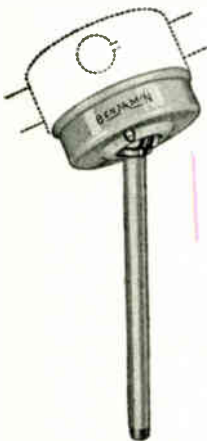
No.	Each	Description	Tap. In.
N-3380	\$.30	*For 3 1/4 and 4-Inch Rd. & Oct. Outlet Box	1/2
N-3381	.30	*For 3 1/4 and 4-Inch Rd. & Oct. Outlet Box	3/4
N-3385	.45	For 4-Inch Square Outlet Box	1/2
N-3386	.45	For 4-Inch Square Outlet Box	3/4

*Also fits plaster cover with ears spaced on 2 3/4-inch centers.

Benjamin Porcelain Enamelled Stem Suspensions

With 45° Canopy Type Ball Aligners

Listed by Underwriters' Laboratories



No. 8906

For use with standard 3 1/4 and 4-inch outlet boxes. Allows lighting units to hang plumb from outlet boxes mounted on ceilings having as much as a 45° slope. Also provides a flexible mounting support which will swing under the blows of ladders, poles and similar objects.

Porcelain enameled steel cover with either a white porcelain enameled cast iron or chromium plated die-cast ball, which swivels between two steel plates inside the cover. Steel mounting strap provides for attachment to the outlet box or stud.

Aligners having white porcelain enamel, cast iron balls are provided with flexible grounding wire and two terminal grounding screws. On aligners with chromium plated die-

cast balls, the metal-to-metal contact between the ball and supporting plates provides automatic grounding. Pipe stems are of 1/2-inch iron pipe, threaded at both ends.

Aligners attach to round or octagonal boxes using the ears of the box or a 3/8-inch fixture stud. Can also be used with 4-inch square outlet boxes by using a 3/8-inch fixture stud. On all types of boxes 1 1/2 inches deep or more, where a fixture stud is used, the 3/8-inch stud must be lengthened by a short pipe extension. Slotted attaching holes in mounting strap are spaced on 2 3/4 to 3 1/2-inch centers.

Canopy is white porcelain enameled steel; ball is white porcelain enamel or chromium plate. Pipe stems are white porcelain enamel. Cap nuts are chromium plated.

Packed 5 in a standard package.

***With Canopy Ball Aligners and 12-Inch Stems**

Shipping weight per standard package, 11 1/2 pounds.

No. 8905, with Porcelain Ball	each	\$2.00
No. 8906, with Chromium Ball	each	2.00

***With Canopy Ball Aligners and 18-Inch Stems**

Shipping weight per standard package, 13 1/2 pounds.

No. 8911, with Porcelain Ball	each	\$2.28
No. 8912, with Chromium Ball	each	2.28

45° Canopy Type Ball Aligners, without Stems

Shipping weight per standard package, 7 1/4 pounds.

No. 8915, with Porcelain Ball	each	\$1.45
No. 8916, with Chromium Ball	each	1.45

Porcelain Enamelled Stems Only

No.	Each	Length, inches	Shipping Weight per Standard Package, lbs.
11012	\$.55	12	4 1/4
11018	.83	18	6 1/4

*For additional length of stem, add 5 cents per inch.

Benjamin Flexible Suspension Fittings

Most industrial or manufacturing buildings are subject to vibrations induced by moving machinery. Under these conditions, the shock absorbing feature in Benjamin Fixture Aligners protects the lamp filament and tends to prolong lamp life.

Packed 10 in a standard package.

Aligners with Shock Absorbers

Furnished with medium or heavy shock absorber to accommodate various weights of fixtures. Medium springs are for fixtures weighing from 3 to 8 pounds, heavy for 8 to 16 pounds. Specify spring desired, otherwise medium weight will be supplied. Tapped, 1/2 inch

Outlet Box Cover Type

Has flexible joint, permitting fixture to hang plumb. Mounting screw holes are elongated.

Sprayed aluminum finish applied over electro-plating.



No. 3366

Shipping weight per standard package, 8 pounds.

No. 3366, with Steel Cover for 4-Inch Box	each	\$.50
No. 3367, with Steel Cover for M Junction Vapolet Box	each	.50
No. 3368, with Cast Cover for 4-Inch Box	each	1.00
No. 3369, with Cast Cover for M Junction Vapolet Box	each	1.00

No. 3355 Canopy Type

Fitting is supported by a strap with slots to slip over the screws on the ears of standard 3 1/4 and 4-inch outlet boxes. May also be mounted on fixture stud by using stirrups.

Metal parts are electro-plated.

Shipping weight per standard package, 7 pounds.

No. 3355.....each \$.90



Aligners without Shock Absorbers

No. 3359 Canopy Type

Same as No. 3355, less shock absorber.

Shipping weight per standard package, 8 pounds.

No. 3359.....each \$.80

No. 6030 Shock Absorber Looped Top Suspension Fittings

Made of iron, with sprayed aluminum finish applied over electro-plating. Tapped, 1/2 inch.

Shipping weight per standard package, 11 pounds.

No. 6030.....each \$.60



Shock Absorber Tapped Top Cross Arms

Iron parts are finished in sprayed aluminum applied over electro-plating.

Tapped, 1/2 x 1/2 inch.



No. 6202

No.	Each	Description	Shipping Wt., Lb. Std. Pkg.
6202	\$1.40	With Shock Absorber	20
6200	1.30	Less Shock Absorber	19

Benjamin Weatherproof Suspension Fittings

With Insulated Wire Openings

Iron parts are cadmium-plated.

Packed 10 in a standard package.



No. 6031-M

No.	Each	Tapped, inches	Weight per Standard Package	6031	6031-M
				\$.45	.55
		1/2			1 1/2
			pounds	10 1/2	11

*Male.

Benjamin Weatherproof Cable Suspension Fittings

With Hook and Clamp Top—Insulated Wire Openings

Weatherproof fittings with heavily insulated wire openings. Clamp block is adjustable and accommodates cable from 3/8 to 1/2 inch in diameter.

Fitting bodies are cast iron. All iron parts are finished in sprayed aluminum applied over electro-plating.

Cross arm types supplied with porcelain knobs.

Packed 10 in a standard package.

For 2-Wire Service



No. 6037M



No. 6039M

Designed for quick and easy hanging of reflectors from messenger cable, as lighting of outdoor recreational areas.

With Cross Arms

Shipping weight per standard package, 22 pounds.

No. 6036, Tapped 1/2-Inch Female..... each \$1.50
No. 6037M, Tapped 1/2-Inch Male..... each 1.50

Without Cross Arms

Shipping weight per standard package, 15 pounds.

No. 6038, Tapped 1/2-Inch Female..... each \$.95
No. 6039M, Tapped 1/2-Inch Male..... each .95

No. 6040M for 3-Wire Service



Designed for fast and convenient hanging of reflectors from messenger cable in installations using 3-wire service.

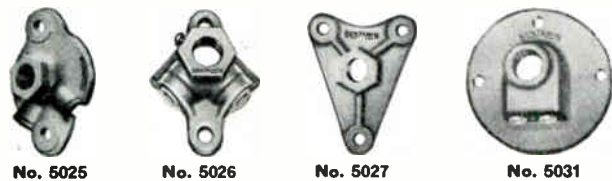
Supplied with a double hook and clamp top for attaching to single messenger cable.

Tapped 1/2-inch male.

Shipping weight per standard package, 24 pounds.

No. 6040M..... each \$2.50

Benjamin Weatherproof Pole and Wall Fittings



No. 5025

No. 5026

No. 5027

No. 5031

Pole and Wall Fittings

Has wire entrance slots for open wiring. Hot-dip galvanized. N5026 and N5026V have two porcelain insulating bushings for wire entrance.

Packed 10 in a standard package.

No.	Each	Description	Tap. In.	Ship. Wt., Lb.	Std. Pkg.
5025	\$.35	For Pole.....	1/2	10	
N5026	.50	For Wall.....	1/2	8	
N5026V	.50	For Wall.....	3/4	10	

Wall Fittings

Sprayed aluminum finish over electro-plating. Packed 10 in a standard package.

5027	\$.65	No Wire Openings.....	3/4	15
5028	.65	No Wire Openings.....	1/2	15
5031	.95	Insulated Wire Openings.....	3/4	18
5032	.95	Insulated Wire Openings.....	1/2	19 1/2

No. 5029 Benjamin Weatherproof Wall or Outlet Box Fittings



Meets inspection requirements where wiring must be inclosed. Has special hub, 1 3/8 inches deep, tapped for conduit entrance. Fits 4-inch outlet box; supplied with two screw holes on 3 1/2-inch centers. Tapped 1/2 inch.

Sprayed aluminum finish, applied over electro-plating.

Packed 10 in a standard package.

Shipping weight per standard package, 19 pounds.

No. 5029..... each \$3.35

Benjamin Iron Goosenecks

With Wall Fitting

Gooseneck, No. 5066 is regularly furnished with wall fitting No. 5026, but may be furnished if specified, with pole fitting No. 5025. Cat. No. 5067 includes wall fitting No. 5027.



No. 5066

Cat. No.	Standard Length Inches	Size Pipe Inches	Std. Pkg.	Price Each
5066	30	1/2	10	\$.95
5067	40	3/4	10	1.65

Without Fitting

5036	30	1/2	10	\$.60
5037	40	3/4	10	1.00

All iron parts are sprayed aluminum over electro-plating.

Benjamin Iron Mast Arms



Furnished with chains. Mast arms furnished up to 10 feet in length.

Standard length, 36 inches.

Packed 10 in a standard package.

Shipping weight per standard package, 105 pounds.

No.	6180	6181
Each.....	\$3.50	\$3.50
For Extra Length..... per foot	.80	.80
Fitting..... inches	1/2	3/4

Benjamin Vaporproof Adjustable Hangers

Listed by Underwriters' Laboratories



No. 3395

For alignment of vaporproof and other lighting fixtures when outlet box is mounted at an angle. Range of adjustment, 315°.

Two-piece ball type cast iron body; gasket sealed at adjustable ball joint. Adjustment controlled by steel bolt joining two sections of fitting while a locking nut prevents accidental loosening.

Hexagonal neck at each end of fitting is tapped for conduit entrance.

Maximum overall length, 5 3/8 inches.

Green lacquer finish.

Packed 5 in a standard package.

Shipping weight per standard package, 10 pounds.
No. 3395, Tapped 1/2 Inch..... each \$1.20
No. 3396, Tapped 3/4 Inch..... each 1.20

Benjamin Reflector Locking Lamp Guards



Shallow Type



Deep Type

Made of heavy gage steel wire with welded joints. Bright tin finish, after welding. Clamp is electro-plated. Arranged for, but does not include padlock. For No. 2570 padlock with two keys, add 65 cents to list.

Shallow Type

For reflector having circular opening and beaded edge, where globe or lamp does not project below reflector head.

No.	Each	For Reflector Diameter Inches	Depth Inches	Standard Package	Shipping Weight Pounds Standard Package
1387	\$1.50	12	1	10	8
1389	1.80	14	1 3/4	10	11
1393	2.10	16	1 1/2	10	13
1391	2.50	17 3/8	2 3/4	10	17
1395	2.50	18	1 3/4	10	18
1397	3.00	20	2	10	18

Deep Type

Accommodates fixtures in which lamp or enclosing globe projects below reflector head.

1378	\$.75	7	1 1/4	10	6
1380	.85	8	1 1/2	10	6
1382	1.00	9	2 1/2	10	7
1383	1.20	10	2 3/4	10	8
1385	1.40	11 3/8	2	10	11
1386	1.50	12	3 3/4	10	10
1388	1.80	14	5	10	17
1390	2.00	15	6 3/4	10	19
1392	2.10	16	4 3/4	10	20
1394	2.50	18	6 1/4	10	37
1396	3.00	20	4	10	45
*1324	4.75	24 1/2	4	2	10

*Has a single clamping screw in place of locking lever; not arranged for padlock.

Benjamin Locking 2-Piece Ceiling Guards



For Glassteel diffusers and enclosing globe units.

Consists of a steel wire ring attached to ceiling by wood screws and a wire guard that fits over the ceiling ring. Guard has lever which when closed contracts guard clamping it securely around ceiling ring. An adjusting screw in lever, allows for slight variation and assures a snug fit.

Guard is arranged for padlock; lock not furnished. Finished bright tin, after welding.

Packed 10 in a standard package.

No.	Each	O.D. Top In.	O.D. Bottom In.	Height Overall In.	Ship. Wt., Lb. Std. Pkg.
1366N	\$3.50	12 3/8	10	12	41
1368	4.00	14 1/2	12	13	47
1370N	4.50	16 5/8	14	14 1/2	57
1371N	4.75	19 1/8	16	17	75
1372N	5.00	21 1/4	18	18 1/4	90
*1374N	6.00	22 3/4	20	13 3/4	85
†1375N	7.00	25 1/4	22	17	100
*1376	9.50	30 3/8	26	20	110

*Takes 18-inch diameter Glassteel; †20-inch diameter Glassteel; and ‡24 1/2-inch diameter Glassteel.

Benjamin Tubular Half Shades



For use with desk lamps, bracket lamps, oil gauge lamps, etc.

Fits standard brass shell sockets and takes T-10 tubular lamp.

Reflector has hinged collar which allows it to swing out and give free access to the lamp when making replacement.

Aluminized inside; outside as indicated in listing.

Standard package, 20. Shipping weight per standard package, 7 pounds.

No. 277, Polished Nickel..... each \$.70
No. 278, Steel, Green Enameled..... each .60

Benjamin Pear Shaped Half Shades



No. 362

For use with desk lamps, bracket lamps, oil gauge lamps, etc. Takes 25 to 60-watt Mazda lamps.

Shades for brass shell sockets have beaded neck which fits into and is held by holder ring. Holders for brass shell sockets are brass; porcelain socket holders are copper. Shades are aluminized inside.

Packed 20 in a standard package. Shipping weight per standard package, 10 pounds. No. 362, Brass Shade with Brushed Brass Finish; Fits Brass Shell..... each \$.88

No. 364, Brass Shade with Polished Nickel Finish; Fits Brass Shell..... each 1.05

No. 365, Steel Shade with Green Enameled Finish; Fits Brass Shell..... each .48

No. 365P, Steel Shade with Green Enameled Finish; Fits Porcelain Socket..... each .53

No. 27 Faries Parabola Shades



No.	Each	Finish	Lamp Size Watts	Diameter Inches
27A	\$.50	Green Enamel	25- 60	6 1/2
27C	.55	Brushed Brass	25- 60	6 1/2
27J	.60	Statuary Bronze	25- 60	6 1/2
27K	.60	Nickel Plate	25- 60	6 1/2
27L	.75	Chromium	25- 60	6 1/2
27E	.85	Green Enamel	50-150	8
27H	1.20	Brushed Brass	50-150	8
27I	1.30	Statuary Bronze	50-150	8

Emeralite Flexible Arms



No. 0839

Size, 1/8x1/8-inch male ferrules.

Brushed brass finish. Packed 10 in a box.

Length Inches	Each	Length Inches	Each
9	\$.80	18	\$1.40
12	.95	24	1.70
15	1.15	..	....

No. 0840

Factory type. Size, 3/8x3/8-inch male ferrules.

Brushed brass finish. Packed 10 in a box.

Length Inches	Each	Length Inches	Each
12	\$1.35	18	\$1.85
15	1.60	24	2.40

Hubbell Reflectors For Threaded Socket Shells

May Be Tilted at Any Desired Angle

Hubbell No. 5429 Line Half Reflectors and No. 5564 Line Parabola Reflectors are regularly furnished with adjustable holders which can be securely screwed to threads on socket shell, and turned as much as one full turn to adjust.

All of the following reflectors, except No. 6152 and those for weatherproof sockets, thread direct to brass shell of sockets and do not require the adjustable feature.

Half Reflectors



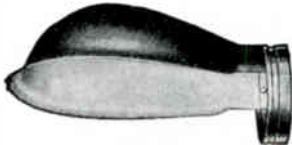
No. 6152

No. 6152 is made with contractile collar only and cannot be supplied with P holder for weatherproof socket.

Carton, 1. Standard package, 30.

No.	Per 100	Metal	Finish	Size Lamp Watts	Pkg. Wt. Lb.
6152	\$72.50	Brass	Brush Brass and Frosted.	15	7

With Adjustable Holder



No. 5429

5429	\$40.50	Steel	Green and White	25-40-60	9
5532	64.00	Brass	Brush Brass and Frosted.	25-40-60	9
6789	47.00	Steel	Lacco Brass and Frosted.	25-40-60	10

For Weatherproof Sockets

5429-P	\$52.50	Steel	Green and White	25-40-60	9
5532-P	76.00	Brass	Brush Brass and Frosted.	25-40-60	9
6789-P	59.00	Steel	Lacco Brass and Frosted.	25-40-60	10

Parabola Reflectors with Holder at Side

With Adjustable Holder

Size, 6 1/2 Inches



No. 5564

Carton, 1. Standard package, 30.

No.	Per 100	Metal	Finish	Size Lamp Watts	Pkg. Wt. Lb.
5564	\$69.00	Steel	Green and Frosted	25-40-60	19
5571	117.00	Brass	Brush Brass and Frosted	25-40-60	21
5461	83.00	Alum.	Green and Frosted	25-40-60	16

For Weatherproof Sockets

5564-P	\$81.00	Steel	Green and Frosted	25-40-60	19
5571-P	129.00	Brass	Brush Brass and Frosted	25-40-60	21
5461-P	95.00	Alum.	Green and Frosted	25-40-60	16

For brass reflectors in polished nickel or in statuary bronze finish, add 50% to price. Other special finishes are available; prices upon application.

White interior furnished without extra charge. Aluminum or steel reflectors cannot be furnished in a plated finish.

Parabola Reflectors

Direct Threading
Size, 6 1/2 Inches



No. 6550



No. 6094

Carton, 1. Standard package, 30.

With Holder at 30° Angle

No.	Per 100	Metal	Finish	Size Lamp Watts	Pkg. Wt. Lb.
6550	\$71.50	Steel	Green and Frosted	25-40-60	18
6551	118.00	Brass	Brush Brass and Frosted	25-40-60	22
6552	82.00	Alum.	Green and Frosted	25-40-60	17

With Holder at Top

6094	\$70.00	Steel	Green and Frosted	25-40-60	20
6548	118.00	Brass	Brush Brass and Frosted	25-40-60	22
6549	82.00	Alum.	Green and Frosted	25-40-60	18

If the above reflectors are desired for weatherproof sockets, place the letter P after the number and add \$12.00 per 100 to price.

Flat Reflectors



No. 5432



No. 6752

Carton, 10. Standard package, 50.

For Threading Direct to Brass Shell Sockets

No.	Per 100	Size Inches	Metal	Finish	Size Lamp Watts	Pkg. Wt. Lb.
5432	\$43.50	10	Tin	Green, White	25-40-60	20

For Weatherproof Sockets

6752	\$54.50	10	Tin	Green, White	25-40-60	35
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Cone Reflectors



No. 5440



No. 6760

Carton, 10. Standard package, 50.

For Threading Direct to Brass Shell Sockets

No.	Per 100	Size Inches	Metal	Finish	Size Lamp Watts	Pkg. Wt. Lb.
5440	\$35.00	8	Tin	Green, White	15-25-40	22
5441	48.00	10	Tin	Green, White	25-40-60	29
5442	64.00	12	Tin	Green, White	40-60-100	41

For Weatherproof Sockets

6760	\$49.00	8	Tin	Green, White	15-25-40	35
6761	69.00	10	Tin	Green, White	25-40-60	38
6762	83.00	12	Tin	Green, White	40-60-100	50

Benjamin Mercury Lamp Units

In industrial locations where color discrimination is not a consideration, installations may consist entirely of mercury lamps in suitable reflectors. In other industrial locations where a certain amount of color discrimination is a consideration, combination installations of Mercury and Incandescent Lamp Units or Combination Units, which utilize both types of lamps in the same reflector, may be employed.

Combination Mercury and Incandescent lamp installations are also advantageous in locations where voltage variations or current interruptions might temporarily affect the operation of the mercury lamp.

The high efficiency of Mercury lamps makes them advantageous for replacing inadequate lighting installations where present wiring is already loaded to capacity. Illumination in such instances can often be increased one and one-half to two times, without rewiring.

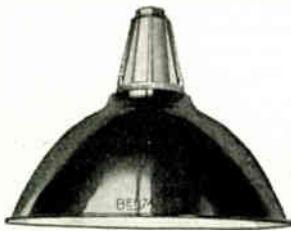
Most of the light produced by these lamps is radiated in the yellow-green and green portions of the visible spectrum near the eye's peak of sensitivity.

Mercury units will not operate on ordinary lighting circuits unless a special transformer or reactor equipment is provided; prices and complete information upon request.

Benjamin Dome Type Mercury Lamp Units

**Porcelain Enameled Steel Reflectors
For 400-Watt Lamps**

Listed by Underwriters' Laboratories



No. 4480



Typical Curve

For general interior illumination.

Dome-shaped reflector provides uniform illumination on both horizontal and vertical surfaces and its 72½° angle of cut-off minimizes glare; no louver is required. When specified can be supplied with an opal glass cylinder for lower end of lamp.

Diameter of reflector, 20 inches.

TURNLOX; weatherproof bayonet mechanism permits removal of reflector and lamp from hood as a unit for cleaning. Supplied with Turnlox hoods and No. 2760 rigid, keyless mogul base lamp. Pendant and angle hoods tapped ½ inch standard, ¾ inch when specified. Ceiling hood fits ¾ or 4-inch octagonal or round boxes, 1½ inches or more deep.

SOCKET-REFLECTOR; standard Socket-Reflector, separable X-type fitting and No. 4657 rigid, keyless mogul base socket. Fitting tapped ½ inch standard, ¾ inch when specified.

Reflectors porcelain enameled steel; green outside, special diffusing surface white inside. Turnlox hoods are electroplated. Caps on X-type fittings are aluminum.

Packed 4 in a standard package.

No.	Each	Type of Construction	Ht. In.	Ship. Wt. Lb. Std. Pkg.
4480	\$9.80	Socket-Reflector, Cast Alum. Neck	15½	47
5480	8.70	Socket-Reflector, Steel Neck	15½	43
7480	9.10	Turnlox Pendant, Steel Neck	17¼	47
9480	9.10	Turnlox Ceiling, Steel Neck	16¾	49
3480	9.10	Turnlox Angle, Steel Neck	17¾	48
47480	9.50	Floor-Turnlox Pendant, Steel Neck	17¼	50
49480	9.50	Floor-Turnlox Ceiling, Steel Neck	16¾	52

Covers

Dust-tight hinged cover.

Packed 5 in a standard package.

No. N-6420, with Plain, Clear Glass Disc	each	\$5.70
No. N-6330, with Stippled Glass Disc	each	6.70

Prices do not include lamp, transformer or reactor.

Benjamin Concentrating Mercury Lamp Units

**Oxidized Alzak Aluminum Reflectors
For 400-Watt Lamps**

Listed by Underwriters' Laboratories



No. 7470 Turnlox Pendant and No. N-6418 Dust Tight Cover



Typical Curve

For use with the standard 400-watt mercury lamp in high narrow rooms where the light must be concentrated uniformly upon the working plane, with minimum loss high on the side walls.

Spacing distance between reflectors should never exceed the mounting height. Closer spacings result in improved uniformity and higher intensities.

Diameter of reflector, 18 inches.

TURNLOX; weatherproof bayonet mechanism permits removal of reflector and lamp from hood. Supplied with Turnlox hood and No. 2760 rigid, keyless mogul base lamp holder. Pendant and angle hoods tapped ½ inch standard, ¾ inch when specified. Ceiling hood fits ¾ or 4-inch octagonal or round boxes, 1½ inches or more deep.

SOCKET-REFLECTOR; standard Socket-Reflector, separable X-type fittings and No. 4657 rigid, keyless mogul base socket. Fitting tapped ½ inch standard, ¾ inch when specified.

Reflectors Alzak oxidized etched aluminum finish, aluminum outside. Turnlox hoods are electroplated. Caps on X-type fittings are aluminum.

Packed 4 in a standard package.

No.	Each	Type of Construction	Ht. In.	Ship. Wt. Lb. Std. Pkg.
4470	\$15.60	Socket-Reflector, Cast Alum. Neck	17	31½
5470	14.50	Socket-Reflector, Steel Neck	17	27¼
7470	14.90	Turnlox Pendant, Steel Neck	18¾	31¾
9470	14.90	Turnlox Ceiling, Steel Neck	18¾	33¼
3470	14.90	Turnlox Angle, Steel Neck	19¾	32¾

Covers

Dust-tight hinged cover.

Packed 5 in a standard package.

No. N-6418, with Plain, Clear Glass Disc	each	\$4.10
No. N-6328, with Stippled Clear Glass Disc	each	5.10

Prices do not include lamp, transformer, or reactor.

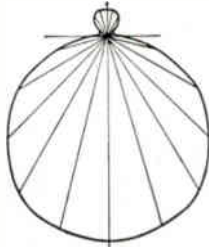
Benjamin Mercury Lamp Glassteel Diffusers

Porcelain Enameled Steel Reflectors

Listed by Underwriters' Laboratories



No. 5203



Typical Curve

For general illumination. The combined diffusing characteristics of the opal glass globe and porcelain enameled steel reflector materially reduce both direct and reflected glare and minimize harsh shadows. Approximately 11 per cent of the light is directed through apertures in the top of the reflector onto the ceiling to relieve contrast.

Reflectors are reflecting white porcelain enamel inside and out. Turnlox hoods are electro-plated. Caps on X-type fittings are aluminum.

Prices do not include lamp, transformer or reactor.

For 400-Watt Lamps

Diameter of reflector, 24½ inches.

TURNLOX; weatherproof bayonet mechanism permits removal of reflector, lamp and globe from hood. Supplied with Turnlox hood and No. 2760 rigid, keyless mogul base lamp holder. Pendant and angle hoods tapped ½ inch standard, ¾ inch when specified. Ceiling hood fits 3¼ or 4-inch octagonal or round boxes, 1½ inches or more deep.

SOCKET-REFLECTOR; standard Socket-Reflector, separable X-type fitting and No. 4657 rigid, keyless mogul base socket. Fitting tapped ½ inch standard, ¾ inch when specified.

Packed 2 in a standard package.

No.	Each	Type of Construction	Ht. In.	Wt., Lb. Std.	Ship. Pkg.
5203	\$18.50	Socket-Reflector	16½	70	
7203	18.90	Turnlox Pendant	18¾	75	
9203	18.90	Turnlox Ceiling	17⅞	77	
3203	18.90	Turnlox Angle	18⅞	75	

For 250-Watt Lamps

Diameter of reflector, 20 inches.

TURNLOX; weatherproof bayonet mechanism permits removal of reflector, lamp and globe from hood, as a unit for cleaning, etc. Supplied with Turnlox hood and No. 2741 rigid, keyless medium base lamp holder. Pendant and angle hoods tapped ½ inch standard, ¾ inch when specified. Ceiling hood fits 3¼ or 4-inch octagonal or round boxes, 1½ inches or more deep.

SOCKET-REFLECTOR; standard Socket-Reflector, separable X-type fitting and No. 4641 rigid, keyless medium base socket. Fitting tapped ½ inch standard, ¾ inch when specified.

Packed 4 in a standard package.

No.	Each	Type of Construction	Ht. In.	Wt., Lb. Std.	Ship. Pkg.
5211	\$12.50	Socket-Reflector	13½	60	
7211	12.90	Turnlox Pendant	15¼	62	
9211	12.90	Turnlox Ceiling	14⅞	66	
3211	12.90	Turnlox Angle	15⅞	65	
47211	13.30	Floor-Turnlox Pendant	15¼	65	
49211	13.30	Floor-Turnlox Ceiling	14⅞	69	

Benjamin Explosion-Proof Pendant Lighting Units

Exterior Reflector Type

Listed by Underwriters' Laboratories
Class I, Groups C and D, Hazardous Locations



Less Reflector

A line of enclosing-globe type explosion-proof units to which can be attached any of four standard porcelain enamel steel reflector shapes. Units completely satisfy all Underwriters' requirements for installation in Class I, Groups C and D, hazardous locations—atmospheres having vapors of gasoline, naphtha, petroleum, alcohol, acetone, lacquer solvents, and natural gas.

The pendant hood is cast iron, finished in sprayed aluminum applied over electroplating; tapped ½ and ¾ inch. Removable inspection plug in side of hood gives access to socket terminal screws.

Socket is one-piece porcelain, with wiring terminals conveniently located on side. Socket base has permanently formed-on metal gasket.

Packed 1 in a standard package.



With Dome Reflector



With Shallow Dome Reflector

Units Less Reflectors

Size Lamp Watts	Tapped ½ Inch		Tapped ¾ Inch		Diam. Refl. In.	Over-all Ht. In.	Shp. Wt., Lb. Std. Pkg.
	No.	Each	No.	Each			
75,100	7601	\$19.40	7501	\$19.50	11	11	
150	7602	19.40	7502	19.50	12	10½	
200	7603	27.90	7503	28.00	13½	15	
Without Guards							
75,100	7631	\$18.40	7531	\$18.50	10½	11	
150	7632	18.40	7532	18.50	11½	10½	
200	7633	26.40	7533	26.50	12¼	14½	

Units with Dome Reflectors

Size Lamp Watts	With Guards		Diam. Refl. In.	Over-all Ht. In.	Shp. Wt., Lb. Std. Pkg.		
	No.	Each					
75,100	7611	\$22.15	7511	\$22.25	12	11	15
150	7612	22.65	7512	22.75	14	12	17
200	7613	31.65	7513	31.75	16	13½	20
Without Guards							
75,100	7651	\$21.15	7551	\$21.25	12	10⅞	14
150	7652	21.65	7552	21.75	14	11⅞	16½
200	7653	30.15	7553	30.25	16	12¼	23

Units with Shallow Dome Reflectors

Size Lamp Watts	With Guards		Diam. Refl. In.	Over-all Ht. In.	Shp. Wt., Lb. Std. Pkg.		
	No.	Each					
75,100	7615	\$21.90	7515	\$22.00	12	11	15
150	7616	22.40	7516	22.50	14	12	17
200	7617	31.40	7517	31.50	16	13½	19¼
Without Guards							
75,100	7655	\$20.90	7555	\$21.00	12	10⅞	14
150	7656	21.40	7556	21.50	14	11⅞	16½
200	7657	29.90	7557	30.00	16	12¼	22¼

Units with Bowl Reflectors

Size Lamp Watts	With Guards		Diam. Refl. In.	Over-all Ht. In.	Shp. Wt., Lb. Std. Pkg.		
	No.	Each					
75,100	7629	\$22.40	7529	\$22.50	10	11	14½
150	7630	22.90	7530	23.00	12	12	10
Without Guards							
75,100	7659	\$21.40	7559	\$21.50	10	10⅞	14
150	7660	21.90	7560	22.00	12	11⅞	14

Units with Symmetrical Angle Reflectors

Size Lamp Watts	With Guards		Diam. Refl. In.	Over-all Ht. In.	Shp. Wt., Lb. Std. Pkg.		
	No.	Each					
75,100	7633	\$22.40	7533	\$22.50	10	*12⅞	14½
150	7634	22.90	7534	23.00	12	*15	14½
200	7635	32.40	7535	32.50	16	*18⅞	22
Without Guards							
75,100	7663	\$21.40	7563	\$21.50	10	*12⅞	14
150	7664	21.90	7564	22.00	12	*15	14
200	7664	30.90	7565	13.00	16	*18⅞	25

*Height from top of hood to lower rim of reflector.

Benjamin Explosion-Proof Ceiling Lighting Units

Exterior Reflector Type
Listed by Underwriters' Laboratories
Class I, Groups C and D, Hazardous Locations



Less Reflector

Units completely satisfy all Underwriters' requirements for installation in Class I, Groups C and D, hazardous locations—atmospheres having vapors of gasoline, naphtha, petroleum, alcohol, acetone, lacquer solvents and natural gas. Any of four standard porcelain enamel steel reflector shapes can be attached to these units.

The two-piece ceiling hood is cast iron. Consists of an explosion-proof outlet box to which is attached the main body of the hood containing the socket. Hood body is fastened to the box by four screws; has a removable inspection plug and is threaded

to take the fixture body. Sprayed aluminum finish, applied over electro-plating.

Boxes have four 3/8-inch diameter mounting holes and four tapped hubs, with conduit stops; three having plugs.

Packed 1 in a standard package.



With Dome Reflector



With Bowl Reflector

Units Less Reflectors

Size Lamp Watts	Tapped 1/2 Inch		Tapped 3/4 Inch		Diam. Refl. In.	Over-all Ht. In.	Ship. Wt., Lb. Std. Pkg.
	No.	Each	No.	Each			
75,100	7601CX	\$23.70	7501CX	\$24.00	11 3/8	12 1/2	
150	7602CX	23.70	7502CX	24.00	12 3/8	12	
200	7603CX	32.20	7503CX	32.50	13 3/8	16 1/2	
Without Guards							
75,100	7631CX	\$22.70	7531CX	\$23.00	10 1/2	12 1/2	
150	7632CX	22.70	7532CX	23.00	11 1/2	12	
200	7673CX	30.70	7573CX	31.00	12 5/8	19 1/2	

Units with Dome Reflectors

Size Lamp Watts	With Guards		Diam. Refl. In.	Over-all Ht. In.	Ship. Wt., Lb. Std. Pkg.
	No.	Each			
75,100	7611CX	\$26.45	7511CX	\$26.75	12
150	7612CX	26.95	7512CX	27.25	14
200	7613CX	35.95	7513CX	36.25	16
Without Guards					
75,100	7651CX	\$25.45	7551CX	\$25.75	12
150	7652CX	25.95	7552CX	26.25	14
200	7653CX	34.45	7553CX	34.75	16

Units with Shallow Dome Reflectors

Size Lamp Watts	With Guards		Diam. Refl. In.	Over-all Ht. In.	Ship. Wt., Lb. Std. Pkg.
	No.	Each			
75,100	7615CX	\$26.20	7515CX	\$26.50	12
150	7616CX	26.70	7516CX	27.00	14
200	7617CX	35.70	7517CX	36.00	16
Without Guards					
75,100	7655CX	\$25.20	7555CX	\$25.50	12
150	7656CX	25.70	7556CX	26.00	14
200	7657CX	34.20	7557CX	34.50	16

Units with Bowl Reflectors

Size Lamp Watts	With Guards		Diam. Refl. In.	Over-all Ht. In.	Ship. Wt., Lb. Std. Pkg.
	No.	Each			
75,100	7629CX	\$26.70	7529CX	\$27.00	10
150	7630CX	27.20	7530CX	27.50	12
75,100	7659CX	\$25.70	7559CX	\$26.00	10
150	7660CX	26.20	7560CX	26.50	12

Units with Symmetrical Angle Reflectors

Size Lamp Watts	With Guards		Diam. Refl. In.	Over-all Ht. In.	Ship. Wt., Lb. Std. Pkg.
	No.	Each			
75,100	7633CX	\$26.70	7533CX	\$27.00	10
150	7634CX	27.20	7534CX	27.50	12
200	7635CX	36.70	7535CX	37.00	16
Without Guards					
75,100	7663CX	\$25.70	7563CX	\$26.00	10
150	7664CX	26.20	7564CX	26.50	12
200	7665CX	35.20	7565CX	35.50	16

*Height from top of hood to lower rim of reflector.

Benjamin Explosion-Proof Junction Boxes

With Hubbed Covers

For Installing Explosion-Proof, Pendent Type Units

Listed by Underwriters' Laboratories for Class I, Groups C and D

Class II Group G and Classes III and IV, Hazardous Locations



No. 7350X

Designed for the suspension of pendent type explosion-proof and dust-tight lighting units in hazardous atmosphere locations.

Hubbed cover is attached by four screws, lock washer equipped, which thread into blind tapped holes.

Boxes are supplied with four 3/8-inch diameter mounting holes, equally spaced on a 5 1/2-inch circle.

A single style and size of box, equipped with four tapping hubs equally spaced on a circle, is the basis of all tapping combinations.

Hubs on boxes and covers are provided with built-in conduit stops.

Boxes and covers are cast iron; sprayed aluminum finish, applied over electro-plating.

Cover attaching screws are electro-plated.

Packed 5 in a standard package.

One Side Tapped

Size Tapping Inches	Type EPS Box with Hubbed Cover				*Type ES Box Only	
	1/2-INCH HUB COVER		3/4-INCH HUB COVER		No.	Each
	No.	Each	No.	Each		
1/2	7350V	\$2.20	7351V	\$2.25	7300V	\$1.20
3/4	7355V	2.25	7356V	2.30	7305V	1.25
1	7360V	2.30	7361V	2.35	7310V	1.30

Feed Through Tapped

1/2	7350C	\$2.30	7351C	\$2.35	7300C	\$1.30
3/4	7355C	2.40	7356C	2.45	7305C	1.40
1	7360C	2.50	7361C	2.55	7310C	1.50

Right Angle Tapped

1/2	7350L	\$2.30	7351L	\$2.35	7300L	\$1.30
3/4	7355L	2.40	7356L	2.45	7305L	1.40
1	7360L	2.50	7361L	2.55	7310L	1.50

3-Way Tapped

1/2	7350T	\$2.40	7351T	\$2.45	7300T	\$1.40
3/4	7355T	2.55	7356T	2.60	7305T	1.55
1	7360T	2.70	7361T	2.75	7310T	1.70

4-Way Tapped

1/2	7350X	\$2.50	7351X	\$2.55	7300X	\$1.50
3/4	7355X	2.70	7356X	2.75	7305X	1.70
1	7360X	2.90	7361X	2.95	7310X	1.90

Covers

Made of cast iron; sprayed aluminum finish, applied over electro-plating.

Packed 5 in a standard package.

No.	Hubbed		Plain
	7370	7371	
Each	\$1.00	1.05	.90
Tapped	inches 1/2 3/4		....

*Outlet box without tapping, No. 7300, \$1.15 each.

Type II-G Benjamin Dust-Tight Lighting Units

Listed by Underwriters' Laboratories for Class II, Group G and Classes III and IV Hazardous Locations

For locations requiring dust or vapor-proof lighting equipment. Weather and moisture-proof, and due to the protection of the lamp afforded by the glass screw globe, this unit is valuable in food industries where there is a danger of spoilage from breakage of uncovered lamps.

Cast aluminum hoods with removable cast-aluminum cap; sprayed aluminum finish. Acid-resisting porcelain enameled reflector; green outside, reflecting white inside. Medium base, one-piece porcelain socket with side terminals.

Packed 10 in a standard package.

With Dome Reflectors



No. 8500

No.	Each	Size Lamp Watts	Type of Globe	Diam. all Refl. In.	Over-Ht. In.	Hood No.	Refl. No.	Globe No.
8500	\$11.50	100	Plain Cl.	12	11	8550	1100	1062
8500-HR	13.00	100	Heat-Res.	12	10 ⁵ / ₈	8550	1100	1094
8500-OP	12.00	100	Opal	12	10 ⁵ / ₈	8550	1100	1092
8503	16.50	150,200	Plain Cl.	18	13 ³ / ₄	8552	1103	1063

With Bowl Reflectors



No. 8506

8506	\$11.90	100	Plain Cl.	9	11	8550	1106	1062
8506-HR	13.40	100	Heat-Res.	9	10 ⁵ / ₈	8550	1106	1094

With Flat Cone Reflectors



No. 8513

8513	\$11.50	100	Plain Cl.	14	11	8550	1113	1062
8513-HR	13.00	100	Heat-Res.	14	10 ⁵ / ₈	8550	1113	1094
8513-OP	12.00	100	Opal	14	10 ⁵ / ₈	8550	1113	1092
8515	15.40	150,200	Plain Cl.	18	13 ³ / ₄	8552	2515	1063

With Symmetrical Angle Reflectors



No. 8517

8517	\$12.00	100	Plain Cl.	10	11 ⁵ / ₈	8550	1117	1062
8517-HR	13.50	100	Heat-Res.	10	11 ⁵ / ₈	8550	1117	1094

Prices do not include wires or lamps.

Type II-G Benjamin Dust-Tight and Moisture-Proof Units

Listed by Underwriters' Laboratories for Class II, Group G, Class III and Class IV, Hazardous Locations



No. 665



No. 657

For installation in Class II, Group G, hazardous locations, where combustible organic dusts are in suspension in the atmosphere and are likely to collect on lighting fixtures in sufficient quantities to cause overheating or explosions; and in Classes III and IV locations, where ignitable fibers and materials producing combustible flyings are manufactured, handled or stored.

Has one-piece, weatherproof copper casing; tapped for 1/2-inch conduit. Fitted with removable, one-piece, medium base porcelain socket, which has lamp grip to retard loosening of lamp, and is held in place by a retaining ring that threads into the casing.

A glass globe threads into the copper casing and seats against an impregnated, asbestos gasket. Natural copper finish.

Guard-type units have removable wire guard which threads onto outside of copper casing. Guards are heavy steel wire, welded and finished bright tin.

Packed 10 in standard package.

Without Guards

No.	Complete Each	Globe Only		Size Lamp Watts	Ht. In.	Diam. In.	Ship. Wt. Lb. Std. Pkg.
		No.	Each				
663	\$2.10	1060	\$.75	25,60	7 ⁵ / ₈	4 ¹ / ₈	37
665	2.65	1062	1.20	75,100,150	9 ³ / ₄	6	63
665-HR	4.15	*1094	2.70	75,100,150	9 ¹ / ₂	6 ³ / ₈	57
665-OP	3.15	†1092	1.70	75,100,150	9 ¹ / ₂	6 ³ / ₈	57

With Wire Guards

657	\$3.10	1060	\$.75	25,60	8 ¹ / ₂	4 ³ / ₄	44
658	4.25	1062	1.20	75,100,150	10 ¹ / ₄	8 ¹ / ₈	72
658-HR	5.75	*1094	2.70	75,100,150	10 ¹ / ₄	8 ¹ / ₈	56
658-OP	4.75	†1092	1.70	75,100,150	10 ¹ / ₄	8 ¹ / ₈	56

Wire Guards Only

No.	Each	Fits Fixture No.	Ht. In.	Diam. In.	Ship. Wt. Lb. Std. Pkg.
1428	1.60	665(HR-OP), 658(HR-OP)	7 ⁵ / ₈	8 ¹ / ₈	11

*Heat-resisting clear globe.
†Opal glass enclosing globe.



Benjamin Heavy Duty Vaporproof Lighting Units

Suitable for use in locations exposed to moisture or non-combustible dust.

The lamp is enclosed in a heavy glass screw globe. A single asbestos gasket between the hood and globe seals the lamp and assures a tight enclosure. A stuffing gland in the hood top seals the wire entrance.

The hood is an aluminum casting designed to accommodate the threaded, copper neck of the heavy gage steel reflector. Reflector rim is tightly closed to assure a smooth unbroken surface for the acid-resisting porcelain enamel. A formed copper gasket provides a cushion between the bottom edges of the hood and the porcelain surfaces of the reflector.

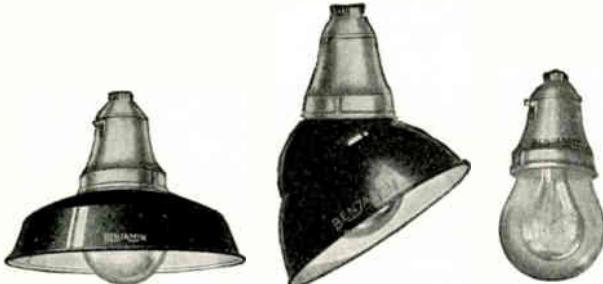
Hood is finished in sprayed aluminum; reflector is green outside, reflecting white inside.

Regularly supplied with plain clear or opal diffusing globes. Can be furnished with heat-resisting globe at an advance over the plain clear globe unit list, \$1.50 for medium and \$2.00 for mogul base units. To order, use suffix number of plain clear globe unit with HR.

Keyless rigid medium or mogul base sockets supplied. When specified, at 10 cents advance in list, shock-absorbing socket can be furnished. To order, suffix fixture number with SHB.

Benjamin Heavy Duty Vaporproof Pendant Lighting Units

Listed by Underwriters' Laboratories



No. 6501

No. 6518

No. 6527

Hood is regularly tapped 1/2 inch standard; 3/4 inch when specified.

Size Lamp Watts	With Dome Reflectors		Diam. Refl. In.	*Ht. In.	Std. Pkg.	Ship. Wt. Lb.		
	Clear Globe No.	With Opal Globe Each						
75, 100	6500	\$6.00	6500-OP	\$6.50	12	11 3/4	10	83
150	6501	6.75	6501-OP	7.25	14	11 3/4	10	88
200	6502	8.25	6502-OP	8.75	16	11 3/4	10	94
300, 500	6503	10.75	6503-OP	11.50	18	15 1/4	5	102

Size Lamp Watts	With Bowl Reflectors		Diam. Refl. In.	*Ht. In.	Std. Pkg.	Ship. Wt. Lb.		
	Clear Globe No.	With Opal Globe Each						
150	6506	\$6.40	6506-OP	\$6.90	9	11 3/4	10	82
200	6507	7.00	6507-OP	7.50	10	11 3/4	10	86
300, 500	6508	9.05	6508-OP	9.80	12	15 1/4	5	86

Size Lamp Watts	With Flat Cone Reflectors		Diam. Refl. In.	*Ht. In.	Std. Pkg.	Ship. Wt. Lb.		
	Clear Globe No.	With Opal Globe Each						
75, 100	6513	\$6.00	6513-OP	\$6.50	14	11 3/4	10	85
150	6514	6.75	6514-OP	7.25	16	11 3/4	10	95
200	6515	8.25	6515-OP	8.75	18	11 3/4	10	92

Size Lamp Watts	With Symmetrical Angle Reflectors		Diam. Refl. In.	*Ht. In.	Std. Pkg.	Ship. Wt. Lb.		
	Clear Globe No.	With Opal Globe Each						
75, 100	6517	\$6.50	6517-OP	\$7.00	10	12 3/8	10	87
150, 200	6518	7.25	6518-OP	7.75	12	15 1/8	10	93
300, 500	6519	10.00	6519-OP	10.75	14	18	5	91

Size Lamp Watts	Without Reflectors		Diam. Globe In.	*Ht. In.	Std. Pkg.	Ship. Wt. Lb.		
	Clear Globe No.	With Opal Globe Each						
50, 100	6526	\$3.75	6526-OP	\$4.25	16	9 3/4	10	58
150, 200	6527	4.20	6527-OP	4.70	16	11 3/4	10	63
300, 500	6528	5.60	6528-OP	6.35	15 1/4	15 1/4	5	74

*Heights are for clear globe units; for opal or heat-resisting deduct 3/8 inch from medium and 3/4 inch from mogul unit heights.

†Height taken from top of hood to lower rim of reflector.

‡Clear globe diameter; opal or heat-resisting globe diameter is 6 9/8 inches.

§Clear globe diameter; opal or heat-resisting globe diameter is 8 3/8 inches.

Benjamin Heavy Duty Vaporproof Ceiling Lighting Units

Listed by Underwriters' Laboratories



No. 6551

No. 6568

No. 6577

Suitable for use in locations exposed to moisture or non-combustible dust.

With Dome Reflectors

For Benjamin Type M 4 1/2-Inch Junction Vapolet Boxes

Size Lamp Watts	With Clear Globe No.		With Opal Globe No.		Diam. Refl. In.	*Ht. In.	Std. Pkg.	Ship. Wt. Lb.
	Each	Each	Each	Each				
75, 100	6550	\$6.70	6550-OP	\$7.20	12	11	10	87
150	6551	7.45	6551-OP	7.95	14	11	10	92
200	6552	8.95	6552-OP	9.45	16	11	10	98
300, 500	6553	11.45	6553-OP	12.20	18	14 1/2	5	102 1/2

For Standard 4-Inch Round or Octagonal Boxes

75, 100	6650	\$6.70	6650-OP	\$7.20	12	11	10	87
150	6651	7.45	6651-OP	7.95	14	11	10	92
200	6652	8.95	6652-OP	9.45	16	11	10	98
300, 500	6653	11.45	6653-OP	12.20	18	14 1/2	5	102 1/2

With Bowl Reflectors

For Benjamin Type M 4 1/2-Inch Junction Vapolet Boxes

150	6556	\$7.10	6556-OP	\$7.60	9	11	10	86
200	6557	7.70	6557-OP	8.20	10	11	10	91
300, 500	6558	9.75	6558-OP	10.50	12	14 1/2	5	92

For Standard 4-Inch Round or Octagonal Boxes

150	6686	\$7.10	6686-OP	\$7.60	9	11	10	86
200	6687	7.70	6687-OP	8.20	10	11	10	91
300, 500	6688	9.75	6688-OP	10.50	12	14 1/2	5	92

With Flat Cone Reflectors

For Benjamin Type M 4 1/2-Inch Junction Vapolet Boxes

75, 100	6563	\$6.70	6563-OP	\$7.20	14	11	10	92
150	6564	7.45	6564-OP	7.95	16	11	10	99
200	6565	8.95	6565-OP	9.45	18	11	10	106 1/2

For Standard 4-Inch Round or Octagonal Boxes

75, 100	6663	\$6.70	6663-OP	\$7.20	14	11	10	92
150	6664	7.45	6664-OP	7.95	16	11	10	99
200	6665	8.95	6665-OP	9.45	18	11	10	106 1/2

With Symmetrical Angle Reflectors

For Benjamin Type M 4 1/2-Inch Junction Vapolet Boxes

75, 100	6567	\$7.20	6567-OP	\$7.70	10	11 1/8	10	91
150, 200	6568	7.95	6568-OP	8.45	12	14 3/8	10	97
300, 500	6569	10.70	6569-OP	11.45	14	17 1/4	5	97

For Standard 4-Inch Round or Octagonal Boxes

75, 100	6667	\$7.20	6667-OP	\$7.70	10	11 1/8	10	91
150, 200	6668	7.95	6668-OP	8.45	12	14 3/8	10	97
300, 500	6669	10.70	6669-OP	11.45	14	17 1/4	5	97

Without Reflectors

For Benjamin Type M 4 1/2-Inch Junction Vapolet Boxes

50, 100	6576	\$4.45	6576-OP	\$4.95	16	9	10	59
150, 200	6577	4.90	6577-OP	5.40	16	11	10	71
300, 500	6578	6.30	6578-OP	7.05	18 3/4	14 1/2	5	75

For Standard 4-Inch Round or Octagonal Boxes

50, 100	6676	\$4.45	6676-OP	\$4.95	16	9	10	59
150, 200	6677	4.90	6677-OP	5.40	16	11	10	71
300, 500	6678	6.30	6678-OP	7.05	18 3/4	14 1/2	5	75

*Heights are for clear globe units; for opal or heat-resisting deduct 3/8 inch from medium and 3/4 inch from mogul unit heights.

†Heights taken from top of hood to lower rim of reflector.

‡Clear globe diameter; opal or heat-resisting globe diameter is 6 9/8 inches.

§Clear globe diameter; opal or heat-resisting globe diameter is 8 3/8 inches.

Benjamin Industrial Lighting Vapolets

Listed by Underwriters' Laboratories



Ceiling Type

For use in indoor and outdoor locations where equipment is subjected to rough handling and corrosive fumes, vapors, etc.

Cast iron alloy junction box body; sprayed aluminum finish. One-piece composition receptacle. Plain clear glass globe supplied; for opal, heat-resisting and colored globes, prices on request.

Aluminum alloy guard, sprayed aluminum finish.

When specified, brass guards and bodies can be furnished at a slight additional charge.

When desired without guard, deduct price of guard only from price of complete Vapolet, and specify Less Guard after Vapolet number.



Pendant Type

Benjamin Porcelain Enamelled Steel Reflectors For Vapolets



No. 145



No. 153

With cast aluminum ring for attachment to outside threading on lighting Vapolet bodies.

Seamless, acid-resisting reflector; green outside, reflecting white inside.

Threaded cast aluminum rings for 50-60 and 75-100-watt reflectors fit 50-100-watt Vapolet bodies; rings for 150, 150-200 and 200-watt reflectors, fit 100-200-watt Vapolet bodies.

Packed 10 in a standard package.

Ceiling Type One Side Tapped

Size Lamp Watts	Size Tapping In.	With Globe and Guard			Without Globe and Guard		Guard Only No.	Globe Only No.	
		No.	Each	Ht. In.	Width In.	No.			Each
15,40	1/2	7117V	\$4.40	8 1/4	4 1/16	7013V	\$2.00	7069	7080
15,40	3/4	7127V	4.45	8 3/4	4 1/16	7023V	2.05	7069	7080
15,40	1	7137V	4.50	8 7/8	4 11/16	7033V	2.10	7069	7080
50,100	1/2	7113V	4.50	9 9/16	4 1/16	7013V	2.00	7070	7062
50,100	3/4	7123V	4.55	9 9/16	4 1/16	7023V	2.05	7070	7062
50,100	1	7133V	4.60	9 9/16	4 11/16	7033V	2.10	7070	7062
100,200	1/2	7114V	5.40	11 1/4	5 9/16	7014V	2.35	7071	6867
100,200	3/4	7124V	5.45	11 1/4	5 9/16	7024V	2.40	7071	6867
100,200	1	7134V	5.50	11 7/8	5 9/16	7034V	2.45	7071	6867

Feed-Through Tapped

Size Lamp Watts	Size Tapping In.	With Globe and Guard			Without Globe and Guard		Guard Only No.	Globe Only No.	
		No.	Each	Ht. In.	Width In.	No.			Each
15,40	1/2	7117C	\$4.50	8 3/4	4 1/16	7013C	\$2.10	7069	7080
15,40	3/4	7127C	4.60	8 3/4	4 1/16	7023C	2.20	7069	7080
15,40	1	7137C	4.70	8 7/8	4 11/16	7033C	2.30	7069	7080
50,100	1/2	7113C	4.60	9 9/16	4 1/16	7013C	2.10	7070	7062
50,100	3/4	7123C	4.70	9 9/16	4 1/16	7023C	2.20	7070	7062
50,100	1	7133C	4.80	9 9/16	4 11/16	7033C	2.30	7070	7062
100,200	1/2	7114C	5.50	11 1/4	5 9/16	7014C	2.45	7071	6867
100,200	3/4	7124C	5.60	11 1/4	5 9/16	7024C	2.55	7071	6867
100,200	1	7134C	5.65	11 7/8	5 9/16	7034C	2.60	7071	6867

Angle Tapped

Size Lamp Watts	Size Tapping In.	With Globe and Guard			Without Globe and Guard		Guard Only No.	Globe Only No.	
		No.	Each	Ht. In.	Width In.	No.			Each
15,40	1/2	7117L	\$4.50	8 3/4	4 1/16	7013L	\$2.10	7069	7080
15,40	3/4	7127L	4.60	8 3/4	4 1/16	7023L	2.20	7069	7080
15,40	1	7137L	4.70	8 7/8	4 11/16	7033L	2.30	7069	7080
50,100	1/2	7113L	4.60	9 9/16	4 1/16	7013L	2.10	7070	7062
50,100	3/4	7123L	4.70	9 9/16	4 1/16	7023L	2.20	7070	7062
50,100	1	7133L	4.80	9 9/16	4 11/16	7033L	2.30	7070	7062
100,200	1/2	7114L	5.50	11 1/4	5 9/16	7014L	2.45	7071	6867
100,200	3/4	7124L	5.60	11 1/4	5 9/16	7024L	2.55	7071	6867
100,200	1	7134L	5.65	11 7/8	5 9/16	7034L	2.60	7071	6867

3-Way Tapped

Size Lamp Watts	Size Tapping In.	With Globe and Guard			Without Globe and Guard		Guard Only No.	Globe Only No.	
		No.	Each	Ht. In.	Width In.	No.			Each
15,40	1/2	7117T	\$4.65	8 3/4	4 1/16	7013T	\$2.25	7069	7080
15,40	3/4	7127T	4.75	8 3/4	4 1/16	7023T	2.35	7069	7080
15,40	1	7137T	4.95	8 7/8	4 11/16	7033T	2.55	7069	7080
50,100	1/2	7113T	4.75	9 9/16	4 1/16	7013T	2.25	7070	7062
50,100	3/4	7123T	4.85	9 9/16	4 1/16	7023T	2.35	7070	7062
50,100	1	7133T	5.05	9 9/16	4 11/16	7033T	2.55	7070	7062
100,200	1/2	7114T	5.60	11 1/4	5 9/16	7014T	2.55	7071	6867
100,200	3/4	7124T	5.75	11 1/4	5 9/16	7024T	2.70	7071	6867
100,200	1	7134T	5.85	11 7/8	5 9/16	7034T	2.80	7071	6867

4-Way Tapped

Size Lamp Watts	Size Tapping In.	With Globe and Guard			Without Globe and Guard		Guard Only No.	Globe Only No.	
		No.	Each	Ht. In.	Width In.	No.			Each
15,40	1/2	7117X	\$4.75	8 3/4	4 1/16	7013X	\$2.35	7069	7080
15,40	3/4	7127X	4.95	8 3/4	4 1/16	7023X	2.55	7069	7080
15,40	1	7137X	5.10	8 7/8	4 11/16	7033X	2.70	7069	7080
50,100	1/2	7113X	4.85	9 9/16	4 1/16	7013X	2.35	7070	7062
50,100	3/4	7123X	5.05	9 9/16	4 1/16	7023X	2.55	7070	7062
50,100	1	7133X	5.20	9 9/16	4 11/16	7033X	2.70	7070	7062
100,200	1/2	7114X	5.70	11 1/4	5 9/16	7014X	2.65	7071	6867
100,200	3/4	7124X	5.90	11 1/4	5 9/16	7024X	2.85	7071	6867
100,200	1	7134X	6.05	11 7/8	5 9/16	7034X	3.00	7071	6867

For brass or iron plugs, price on request.

Pendant Type

Size Lamp Watts	Size Tapping In.	With Globe and Guard			Without Globe and Guard		Guard Only No.	Globe Only No.	
		No.	Each	Ht. In.	Width In.	No.			Each
15,40	1/2	7110A	\$4.40	8 1/2	4 3/16	7011A	\$2.00	7069	7080
15,40	3/4	7120A	4.45	8 1/2	4 3/16	7021A	2.05	7069	7080
50,100	1/2	7111A	4.50	9 1/16	4 3/16	7011A	2.00	7070	7062
50,100	3/4	7121A	4.55	9 1/16	4 3/16	7021A	2.05	7070	7062
100,200	1/2	7112A	5.40	11 1/2	5 5/16	7012A	2.35	7071	6867
100,200	3/4	7122A	5.45	11 1/2	5 5/16	7022A	2.40	7071	6867

Prices do not include wires or lamps.

Dome Reflectors

No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Shp. Wt., Lb. Std. Pkg.
145	\$2.75	75,100	12	5 5/8	24 1/2
146	3.25	150	14	6 7/8	31 1/2
147	3.75	200	16	7 7/8	40 1/2

Shallow Dome Reflectors

No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Shp. Wt., Lb. Std. Pkg.
148	\$2.25	75,100	12	5 1/8	19
149	2.75	150	14	6 3/8	28
150	3.25	200	16	7 1/8	40

30° Symmetrical Angle Reflectors

No.	Each	Size Lamp Watts	Diam. In.	Ht. In.	Shp. Wt., Lb. Std. Pkg.
152	\$2.00	50,60	*10	7 1/4	29
153	2.75	75,100	*12	9 5/8	28 1/2
154	3.50	150,200	*16	12 1/8	39 1/2

*Allow the following distances from center line of lamp to wall, No. 152, 6 1/2 inches; No. 153, 7 3/4 inches; and No. 154, 10 inches.

Type M Benjamin Junction Vapolets

Without Lugs

Listed by Underwriters' Laboratories

A standard, 4 1/2-inch diameter, water tight outlet box; 1 1/2 inches deep. Made of cast brass or cast iron.

Plain type cover, cast brass or cast iron. Rubber gasket makes water tight connection between cover and Vapolet.

Brass junction Vapolets and covers are unfinished; iron junction vapolets and covers are sprayed aluminum.



No. 6701

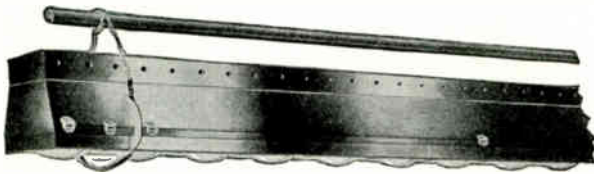
Bottom Tapped

Size Tapping In.	Cast Brass				Cast Iron			
	Vapolet Box Only		Vapolet Box Cover & Gasket		Vapolet Box Only		Vapolet Box Cover & Gasket	
No.	Each	No.	Each	No.	Each	No.	Each	
1/2	6900A-1/2	\$1.50	6700A-1/2	\$2.20	6901A-1/2	\$.55	6701A-1/2	\$.95
3/4	6900A-3/4	1.50	6700A-3/4	2.20	6901A-3/4	.55	6701A-3/4	.95
One Side Tapped								
1/2	6900V-1/2	\$1.50	6700V-1/2	\$2.20	6901V-1/2	\$.55	6701V-1/2	\$.95
3/4	6900V-3/4	1.50	6700V-3/4	2.20	6901V-3/4	.55	6701V-3/4	.95
1	6900V-1	1.55	6700V-1	2.25	6901V-1	.60	6701V-1	1.00
Feed-Through Tapped								
1/2	6900C-1/2	\$1.55	6700C-1/2	\$2.25	6901C-1/2	\$.60	6701C-1/2	\$1.00
3/4	6900C-3/4	1.55	6700C-3/4	2.25	6901C-3/4	.60	6701C-3/4	1.00
1	6900C-1	1.65	6700C-1	2.35	6901C-1	.70	6701C-1	1.10
Right-Angle Tapped								
1/2	6900L-1/2	\$1.55	6700L-1/2	\$2.25	6901L-1/2	\$.60	6701L-1/2	\$1.00
3/4	6900L-3/4	1.55	6700L-3/4	2.25	6901L-3/4	.60	6701L-3/4	1.00
1	6900L-1	1.65	6700L-1	2.35	6901L-1	.70	6701L-1	1.10
3-Way Tapped								
1/2	6900T-1/2	\$1.60	6700T-1/2	\$2.30	6901T-1/2	\$.65	6701T-1/2	\$1.05
3/4	6900T-3/4	1.60	6700T-3/4	2.30	6901T-3/4	.65	6701T-3/4	1.05
1	6900T-1	1.75	6700T-1	2.45	6901T-1	.80	6701T-1	1.20
4-Way Tapped								
1/2	6900X-1/2	\$1.65	6700X-1/2	\$2.35	6901X-1/2	\$.70	6701X-1/2	\$1.10
3/4	6900X-3/4	1.65	6700X-3/4	2.35	6901X-3/4	.70	6701X-3/4	1.10
1	6900X-1	1.85	6700X-1	2.55	6901X-1	.90	6701X-1	1.30
Without Tapping								
..	6900	\$1.45	6700	\$2.15	6901	\$.50	6701	\$.90

Century Borderlights

Listed by Underwriters' Laboratories

Individual Reflector Type



Chain hangers. Scenery guards. Heat-resisting colored glass roundels with spring ring holders. Splice box for feed cables.

No.	Per Foot	Type Reflector	Outlet Centers Inches	No. of Watts
450	\$7.00	Alzak	6	75-150
451	7.00	Chromium	6	75-150
452	6.00	Aluminum	6	75-150
455	10.00	Alzak	8	200
456	8.00	Chromium	8	200
457	7.00	Aluminum	8	200
460	12.50	Alzak	12	300-500
461	9.00	Chromium	12	300-500
462	8.00	Aluminum	12	300-500

Combination filter holders available at additional cost.

Continuous Reflector Type



Semi-open trough. Continuous reflector strip backing.

No.	Per Foot	Type Reflector	Outlet Centers Inches	No. of Watts
400	\$3.10	Non-Fade White or Aluminum Paint	12	25-100
401	4.35	Matte Aluminum Stripping	12	25-100
402	5.65	Chromium-Plated Stripping	12	25-100
403	5.00	Alzak Aluminum Stripping	12	25-100

Wired on 3, 4, or 6-inch centers at additional cost.

Compartment Type

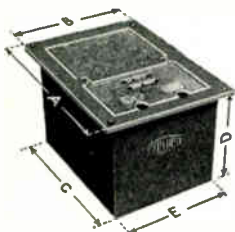
Individual compartments.

No.	Per Foot	Type Reflector	Outlet Centers Inches	No. of Watts
406	\$5.00	Non-Fade White Paint	8	200
406½	5.00	Non-Fade White Paint	6	100-150

Century Floor and Wall Boxes

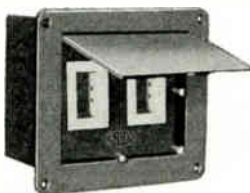
Furnished with plugs.

Flush Floor Type



No.	Description	Each
3091	1 Way	\$10.00
3092	2 Way	16.00
3093	3 Way	21.00
3094	4 Way	28.00

Flush Wall Type

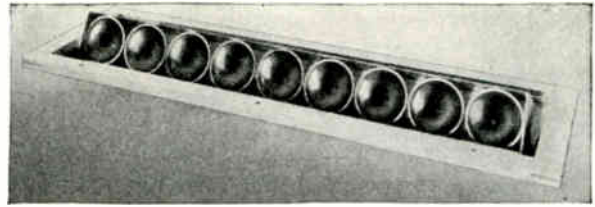


No.	Description	Each
3101	1 Way	\$10.00
3102	2 Way	16.00
3103	3 Way	21.00
3104	4 Way	28.00

Century Disappearing Footlights

Listed by Underwriters' Laboratories

Individual Reflector Type—2-Piece Wood Covers



Made in standard five-foot sections. Malleable iron supports and cross arm brackets to insure rigidity. Kiln dry maple wood trims. Mercury disconnect switches (on and off). Splice box for leads. Heat-resisting colored glass roundels with spring ring holders.

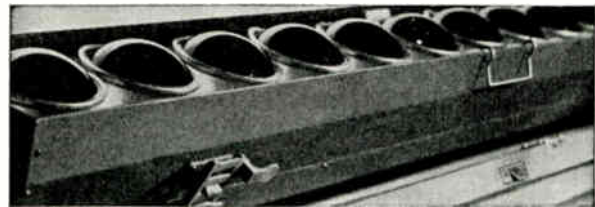
No.	Per Section	Type Reflector	No. of Outlets	No. of Watts
842	\$73.00	Chromium	9	75-150
843	75.00	Alzak	9	75-150
844	68.00	Aluminum	9	75-150
845	70.00	Chromium	12	75-100
846	72.00	Alzak	12	75-100
847	65.00	Aluminum	12	75-100

Combination filter holders available at additional cost.

Continuous Reflecting Surface—2-Piece Wood Covers

811	\$50.00	White Paint	15	25-100
811A	60.00	Alzak Stripping	15	25-100
811C	55.00	Chromium Stripping	15	25-100

Individual Reflector Type—3-Piece Wood Covers



This has six-step height adjustment to enable varying angles of light projection to the stage.

No.	Per Section	Type Reflector	No. of Outlets	No. of Watts
848	\$68.00	Aluminum	9	75-150
849	73.00	Chromium	9	75-150
850	75.00	Alzak	9	75-150
851	65.00	Aluminum	12	75-100
852	70.00	Chromium	12	75-100
853	72.00	Alzak	12	75-100

Continuous Reflecting Surface—3-Piece Wood Covers

No.	Per Section	Type Reflector	No. of Outlets	No. of Watts
832	\$50.00	White Paint	15	25-100
832A	60.00	Alzak Stripping	15	25-100
832B	55.00	Chromium Stripping	15	25-100

Century Non-Disappearing Footlights

Listed by Underwriters' Laboratories

Individual Reflectors

Medium screw base receptacles. Color circuits as specified. Spring ring holders. Splice box for feed cables.

No.	Per Foot	Type Reflector	Outlet Centers Inches	No. of Watts
860	\$7.00	Alzak	6	75-150
861	7.00	Chromium	6	75-150
862	6.00	Aluminum	6	75-150

Combination filter holders available at additional cost.

Double row available with chromium or Alzak reflectors, wired on five-inch centers.

Continuous Reflecting Surface

800	\$3.10	Non-Fade White or Aluminum Paint	12	25-100
801	4.35	Aluminum Stripping	12	25-100
802	5.65	Chromium Stripping	12	25-100
803	5.00	Alzak Stripping	12	25-100

For apron, include letter A and add \$1.00 per foot to list price.

Wired on 3, 4, or 6-inch centers at additional cost.

Kliegl Stage Type Light Strips



No. 650

Used at entrances, back of transparencies, behind ground rows, and general service.

Portable trough reflector with series of screw-base receptacles for 40-150-watt lamps, wired on one 2-wire circuit, terminating in suitable splice box.

- No. 640, 2-Light Strip, 1½ Feet Long..... each \$7.80
- No. 650, 4-Light Strip, 3 Feet Long..... each 10.80
- No. 651, 6-Light Strip, 5 Feet Long..... each 13.80
- No. 652, 10-Light Strip, 8 Feet Long..... each 18.80

Kliegl Aisle, Step, and Corridor Lights

Casts subdued light downward on steps and aiseways, or diffused light in corridors.

No. 2780 Midget



For mounting on side of end seats adjoining aisle. For 6-watt, 115-volt candelabra screw-base lamp.

- Length, 4½ inches; height, 1¼ inches; and depth, 1½ inches.
- No. 2780..... each \$2.60

No. 675 Aisle Spot Lights



For mounting on side of end seats adjoining aisleway. Cast aluminum housing with control lens and receptacle for 10-watt, S14 lamp.

- Width, 3 inches; height, 6 inches; and depth, 2¼ inches.
- No. 675..... each \$4.50

No. 2677 Step Lights



For stairways, mounted flush in riser. Louvered openings direct light to tread. Removable cast aluminum front.

- For 40-watt, medium screw-base lamp.
- Width, 8 inches; height, 4¼ inches; and depth, 3½ inches.
- No. 2677..... each \$5.00

No. 676 Aisle Lights



For flush wall mounting. Louvered front directs light to floor. Front is removable.

- For 40-watt, medium screw-base lamp.
- Width, 4¾ inches; height, 8¼ inches; and depth, 3½ inches.
- No. 676..... each \$5.00

No. 678 Corridor Lights



For flush wall mounting. Cast bronze, removable front, wire-glass face. For 40-watt, medium screw-base lamp.

- Width, 5 inches; height, 8½ inches; and depth, 3½ inches.
- No. 678..... each \$8.00

Kliegl Spotlights

Fresnel Lens Types

Accommodates standard concentrated filament incandescent lamps. Equipped with refracting prismatic Fresnel type lens, producing a soft edge high intensity light beam.

Adjustable lamp carriage for focusing. Alzak aluminum reflectors. Slide grooves for color frames. Furnished with suspension mounting, wall bracket, table base, or floor stand.

- Nos. 43N3 and 43N6 are normally supplied with wall brackets, but may be had with pipe clamp, or table base at same price. Or No. 43N6 on floor stand at \$3.00 additional cost.
- No. 43N3, 100 Watts, 3-Inch Lens..... each \$10.00
- No. 43N6, 500 Watts, 6-Inch Lens..... each 17.00

Nos. 43N8, 43N12 and 43N16 are supplied mounted on telescopic floor stand with rubber tired casters. Can also be supplied mounted on counter-balanced mobile studio stand, or for suspension mounting when required.

- No. 43N8, 1000 Watts, 8-Inch Lens..... each \$75.00
- No. 43N12, 2000 Watts, 12-Inch Lens..... each 115.00
- No. 43N16, 5000 Watts, 16-Inch Lens..... each 150.00



No. 43N6

No. 43N16

Kliegl Cove Light Strips

Incandescent Types

Continuous row screw-base lamp receptacles in raceway. Completely wired. Any length.

No. 734



Channel strip without reflector. Medium screw receptacles, 25-150 watts, 4 inches on centers.

- No. 734..... per foot \$2.40

No. 1741



Continuous Alzak reflector strip. Medium screw receptacles, 25-150 watts, 8 inches on centers.

- No. 1741..... per foot \$3.50

Individual Reflector Strips

Medium screw receptacles, each with spun aluminum Alzak reflector and glass roundel.

No. 739-4



Reflectors, 4 inches, 25-75 watts, 4 inches on centers.

- No. 739-4..... per foot \$9.15

No. 739-6



Reflectors, 6 inches, 40-150 watts, 6 inches on centers.

- No. 739-6..... per foot \$7.90

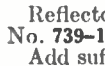
No. 739-8



Reflectors, 8 inches, 100-200 watts, 8 inches on centers.

- No. 739-8..... per foot \$8.40

No. 739-12



Reflectors, 12 inches, 300-500 watts, 12 inches on centers.

- No. 739-12..... per foot \$10.50

Add suffix letter W for wide, M for medium, N for narrow beam; also wattage, example: No. 739-6W-150 watts. Above prices are for W and M types.

Fluorescent Types

For continuous line tubular fluorescent lamps. Completely wired with lamp holders and inbuilt auxiliaries. Any length.

No. 1750



Skeleton strip without reflector, for 40-watt, 48-inch lamps.

- No. 1750..... per foot \$3.30

No. 1753



Reflector strip for 40-watt, 48-inch lamps.

- No. 1753..... per foot \$3.90

Other designs and lamp sizes also available.

Kliegl Klieglights

High intensity light beam projectors with ellipsoidal reflectors, lens system, and coordinated shutter arrangement which permits direct regulation of size and shape of beam in every conceivable manner, so as to confine the light within any desired area. Accommodates standard bipost base up burning concentrated filament lamps.



Mounted Types

For permanent installation with square shutters only.

Supplied with wall brackets, pipe clamps, or table base.

No. 1163

- No. 1163, Drop-In Shutter Arrangement, 250-500 Watts, 5-Inch Lens..... each \$28.00

- No. 1164, Drop-In Shutter Arrangement, 1000 Watts, 6-Inch Lens..... each 55.00

- No. 1165, Built-In Shutter Arrangement, 250-500 Watts, 6-Inch Lens..... each 48.00

- No. 1366, Built-In Shutter Arrangement, 1000-2000 Watts, 6-Inch Lens..... each 90.00

- No. 1368, Built-In Shutter Arrangement, 1000-2000 Watts, 8-Inch Lens..... each 98.00

For Iris shutters, add \$15.00 to above prices. Can be supplied on floor stands at additional cost.

Portable Types



No. 1168-CR

Mobile units. Mounted on telescopic floor stands with rubber tired casters, and additionally equipped with built-in Iris shutter, as well as framing shutter. Also, controls are conveniently located and arranged for quick and easy manipulation, such as required for service intended.

- No. 1166-CR, 1000-2000 Watts, 6-Inch Lens..... each \$150.00

- No. 1168-CR, 1000-2000 Watts, 8-Inch Lens..... each 168.00

Kliegl Disappearing Type Footlights

When not in use, this type is closed down flush with stage floor. Wired for three colors. Automatic mercury on and off circuit switches. Solid kiln-dried oak flooring. Malleable iron cross brackets, positive latches. Terminal blocks for feeder connections.

Furnished in standard five-foot lengths. Completely assembled.

No. 829 Open Trough Style



For use with colored lamps. With continuous reflector, sprayed white. Single row receptacles, continuous flooring, 5-foot sections, 15 outlets, 60-100 watts.

No. 829.....each \$50.00

No. 830 Individual Reflector Style



For use with clear or inside frosted lamps. With individual Alzak aluminum reflectors and glass color roundels. Single row individual reflectors, continuous flooring, 5-foot section, 12 outlets, 100 watts.

No. 830.....each \$85.00

Kliegl Permanent Type Footlights

Fixed in position. Hood extends minimum above stage floor. Wired as specified for three or more colors. Receptacles spaced as indicated.

Any length or curvature required.

No. 622



Single row receptacles, open trough continuous reflector sprayed white, 60-100-watt outlets, spaced 4 inches on centers.

*No. 622.....per foot \$4.70

No. 620A



Single row receptacles, individual Alzak aluminum reflectors, glass color roundels, 100-watt outlets, spaced 6 inches on centers.

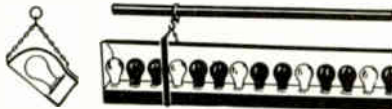
*No. 620A.....per foot \$12.00

*For straight lengths. Curved lengths \$1.50 per foot additional.

Kliegl Borderlights

Wired as specified, for three or more colors. Furnished with splice box, scenery guards, and chain hangers. Any continuous length, or in sections.

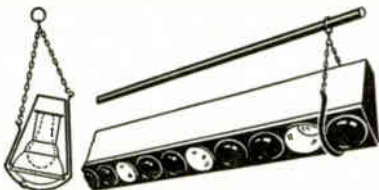
No. 600 Open Trough Type



For colored lamps. Continuous reflector sprayed white, 60-100-watt outlets, spaced 4 inches on centers.

No. 600.....per foot \$4.20

No. 610 Individual Reflector and Roundel Type



For clear or inside frosted lamps. Alzak aluminum individual reflectors. Heat-resisting glass color roundels, hinged-ring roundel holders. Porcelain screw-base receptacles, 100 or 150-watt outlets as specified, 6 inches on centers.

No. 610.....per foot \$12.00

Kliegl Illuminated Exit Signs



Flush Wall Types

Recessed in wall flush with surface. Wall box and front frame furnished as separable parts.

No. 697

Screw-On Style Front

Sheet metal frame, sprayed gold bronze finish. Ruby glass face plate. Plain white letters. Box depth, 3 1/2 inches.

No.	6945	6946	6948
Each.....	\$6.00	7.00	8.50
Size Letters.....inches	5	6	8
Front Frame.....inches	12 1/2 x 8	15 x 9	17 x 11 1/2

Pigtail wired socket installed, \$1.00 each additional.

Hinged Style Front

Cast bronze frame with hinged panel, statuary bronze finish. Ruby glass face plate. Fancy white letters. Box depth, 5 inches.

No.	696	697	699	698	*697W
Each.....	\$12.00	14.00	17.00	20.00	17.00
Size Letters.....inches	3	4	6	8	4
Front Frame.....inches	14 1/4 x 7	15 3/4 x 9	17 1/4 x 10 3/8	18 x 12	15 3/4 x 9

*With wire guard.
Pigtail wired socket installed, \$1.00 each additional.

Surface Types



No. 685

Mounted on surface of wall, or semi-recessed, allowing 1/2-inch projection for removal of glass panel. Glass slides in from side. Single face signs with gold finish metal box. Ruby glass face plate, white letters. Depth, 3 1/2 inches.

Double face signs are also available.

No.	680	685	686	687	690
Each.....	\$3.50	4.00	4.50	4.50	4.75
Size Letters.....inches	3	5	6	8	8
Size Box.....inches	10 x 5	11 1/2 x 6 3/4	14 x 8	12 x 10	15 3/4 x 10

Pigtail wired socket installed, \$1.00 each additional.

No. 711 Outlet-Box Types

Made for attachment to standard octagonal four-inch outlet box in wall. Includes base plate, medium screw receptacle, red lens with opaque letters, and hinged retaining ring. Finished in brushed brass, statuary bronze, or polished chrome. Has 5-inch diameter; with 2-inch letters on front.

No. 711.....each \$5.00

Globe Types

For attachment to 3 1/4-inch lamp shade holders.



Red Glass Round Globes

Has 6-inch diameter; with 3-inch white letters; right and left.

No. 726, for Suspension Mounting, Opening on Top...each \$5.50
No. 726A, for Wall Mounting, Opening on Side...each 5.50

No. 728 Opal Glass Flat Round Globes

For suspension mounting, opening on top. Has 8-inch diameter; with 3-inch red letters; right and left.

No. 728.....each \$6.50

Kliegl Musicians' Lights

Music and leader stands, with the proper illumination. Substantially stabilized.

No. 744 Demountable Types

Without light fixture; easily demantled. Wooden frame, hinged rest, iron tripod base.

No. 744.....each \$4.50

No. 766 All-Metal Types

With light fixture and light guards; set angle adjustable height. Music rest is dull black, gold finish otherwise.

No. 766.....each \$18.00

No. 750 Lyre Types

Made of mahogany, with light fixture. Incline and height adjustable. Twin lamp socket with light diffuser.

No. 750.....each \$28.00



No. 766

No. 748 Detachable Light Fixture

For music stands. Clamps on to iron or wood rack. Wired with 8-foot all rubber covered flexible cord, \$1.25 additional.

No. 748.....each \$3.75

Kliegl Lighting Fixtures

Prices given below do not include lamps
Recessed Fresnel-Lens Ceiling Units

Flush inbuilt type which provides high intensity direct illumination. Accommodates standard screw-base general service incandescent filament lamps. Furnished complete with back box, mounting arrangements, wired porcelain receptacle, Alzak aluminum reflector, Fresnel lens with painted risers, and hinged front frame.



Circular Lens Types

Fitted with circular Fresnel lens of listed diameter. Circular front frame. Cylindrical back box. Plaster rings.

No. 22F12

- No. 22F06, 100 Watts, 6-Inch Diam. Lens. . . . each \$16.00
- No. 22F08, 150 Watts, 8-Inch Diam. Lens. . . . each 20.00
- No. 22F12, 200-300 Watts, 12-Inch Diam. Lens. each 26.00
- No. 22F14, 300-500 Watts, 14-Inch Diam. Lens. each 30.00
- No. 22F16, 500-750 Watts, 16-Inch Diam. Lens. each 46.00



Square Lens Types

Fitted with square shaped Fresnel lens of indicated size. Square hinged front frame. Rectilinear back box.

No. 24F12

- No. 24F06, 100 Watts, 6-Inch Square Lens. . . . each \$16.00
- No. 24F08, 150 Watts, 8-Inch Square Lens. . . . each 20.00
- No. 24F12, 200-300 Watts, 12-Inch Square Lens each 26.00

Downlights—Concealed Ceiling Units

Provides high intensity direct illumination from invisible fixtures concealed above ceiling. Light beam projected through small hole in ceiling. Coverage defined. Equipped with focusable lens system, adjustable framing shutters, and reflector. Shape and cutoff of light beam precisely controlled. Concentrated filament type lamps should be used.

Straight Down Projection—Relamped from Below

Removable aperture plate.



No. 2145

- *No. 2145, 100 Watts, 115 Volts, Spherical Reflector. each \$32.00
- No. 2146, same as above, for angular projection, approximately 45° with horizontal each \$32.00

*Frequently used as pin hole-spot for lighting dining room tables, fountains, etc. Can also be supplied with automatically operated color wheels, automatically operated shutters, special lens systems, etc. Prices on application.

Straight Down Projection—Relamped from Above

Plaster cone; ellipsoidal reflector.



No. 2164

- No. 2164, 250-500 Watts. each \$36.00
- No. 2166, 1000 Watts. each 60.00
- No. 2168, 1500-2000 Watts. each 75.00

Angular Projection—Relamped from Above

Angular projection, approximating 45° with horizontal plane.



No. 2165

- No. 2165, 250-500 Watts. . . . each \$42.00
- No. 2167, 1000 Watts. each 66.00
- No. 2169, 1500-2000 Watts. . . each 80.00

Kliegl Projector Type Picture Lights



No. 276AA

Fitted with objective lens system and adjustable framing shutters, permitting confinement of light within picture area.

- No. 276, For 75 or 100-Watt G16½ D.C. Bayonet Base Lamp. each \$22.00
- No. 276AA, For 100-Watt P2500, 250-400-Watt G30 Medium Screw-Base Lamp. each 28.00

Kliegl Separable Pin Plug Connectors



No. 955

No. 955AC

No. 955AA

No. 3950

No. 4950

Made in two sections. Male end fitted with brass split pins; female end, with brass sleeve. All live parts insulated with solid fiber. Listed by Underwriters' Laboratories.

Two-pole connectors are for connecting duplex to duplex. For connecting duplex to pair single conductor, add suffix AC to number. For connecting two pair single conductor, add suffix AA to number. Prices are same as for duplex to duplex.

Connectors with any number of pins from 1 to 30 are available; also branch-off, multiple circuit, and flush types.

Amperes	2-Pole		3-Pole		4-Pole	
	No.	Each	No.	Each	No.	Each
5	950	\$1.10	3950	\$2.40	4950	\$5.00
15	955	1.50	3955	3.60	4955	6.00
30	956	2.40	3956	5.00	4956	9.50
60	957	5.40	3957	6.40	4957	14.50
100	958	13.50	3958	19.80		

Spring catch for 5-30-ampere, 2-pole connector, 30 cents additional. Connectors Nos. 950 and 957 inclusive, 3950 and 3955 are reversible; can be furnished non-reversible at 50 cents each, additional.

Kliegl Portable Plugging Boxes



No. 400

For conveniently and quickly connecting several circuits to single outlet. Plug receptacles mounted in fireproofed case. Each receptacle independently fused. Feeder cable enters through special clamp.

Made to withstand rough usage.

Furnished complete with plugs.

Furnished with cartridge fuses, unless otherwise ordered. Other arrangements for heavier current demands available.

2-Wire Outlets Amperes	2-Wire Main		3-Wire Main	
	No.	Each	No.	Each
6-30	400	\$30.00	402	\$30.00
12-30	401	58.00	403	58.00
4-50	404	30.00	405	32.00
6-50	406	48.00	407	50.00

Kliegl Pockets and Plugs

Stage-Floor Types



No. 354

Set in floor flush with surface. Has hinged self-closing cover notched for passage of cable. Fitted with heavy duty plug outlets.

Listed by Underwriters' Laboratories.

Furnished complete with two-wire plugs.

No.	351	352	353	354
Each.	\$10.00	18.00	27.00	36.00
Outlets 2-Wire.	1	2	3	4
Amperes Per Outlet.	50	1-25 & 1-50	25	25

Wall Types

Heavy duty plug outlets for use wherever heavy current temporary connections are required—in theatres, projection booths, photographic studios, hotels, schools, industrial plants, etc. Listed by Underwriters' Laboratories.

Furnished complete with two-wire plugs.



No. 311

2-Wire Outlets Amp.	Flush Wall Mounting		Surface Wall Mounting	
	No.	Each	No.	Each
1 50	310	\$10.00	307	\$8.00
2 50	311	16.00	317	14.00
3 50	312	24.00	318	21.00
4 50	313	30.00	319	28.00



No. 319

Panel Types



No. 374

Metal box or cabinet, fitted with heavy duty plug receptacles, wired to fuse panel or cut out.

Furnished complete with plugs.

No.	370	372	374	376	378
Each.	\$17.00	28.00	64.00	100.00	132.00
Outlets 2-Wire.	2	2	4	6	8
Amperes Per Outlet.	30	50	50	50	50

Kliegl Color Wheels

Hand Operated

No.	Each	Diam. In.	Colors	For Spotlights, Lens Size Inches
14	\$3.00	13½	5	4½
22	5.50	18	5	5 or 6
23	11.00	24	5	8
24	7.50	20	7	5 or 6

Motor Operated

Furnished with a.c. motors, 60 cycles, 115 volts.

No.	Each	Diam. In.	Colors	For Spotlights, Lens Size Inches
14AC	\$15.00	15¾	6	4½
31AC	25.00	20	6	5 or 6
35AC	35.00	24	5	8

Can also be furnished with d.c. motors. Prices upon application.

Kliegl Color Gelatines

Furnished in all standard colors.
 Conventional Gelatine, 20x24-In. Sheets per sheet \$.14
 Heat and Moisture-Proof Gelatine, 20x22-In. Sheets
 per sheet .28

Kliegl Dimmers

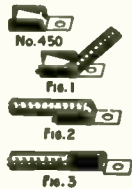


No. 1237

Round plate type for 2-wire, 115-volt circuits.

No.	Each	Watts	Size In.	No.	Each	Watts	Size In.
1229	\$13.00	150	8	1237	\$20.00	1350	13
1230	13.00	250	8	1238	27.00	1650	15½
1231	13.00	400	8	1239	28.00	2000	15½
1233	14.00	550	8	1240	33.00	2450	18
1234	16.00	650	8	1240B	40.00	2700	18
1235	18.00	750	13	1240C	42.00	3000	18
1236	18.00	1000	13				

Kliegl Solderless Lugs



Used whenever terminals are exposed to excessive heat; i.e., connecting asbestos covered leads to arc lamps, or high powered incandescent lamp receptacles. Stamped copper, requires no soldering.

As shown in Fig. 1, wire end is first passed through a hole in copper strip between wing clamps. As shown in Fig. 2, wire is bent back placing cable insulation between wing clamps. Wing clamps are then tightened with pliers

or hammer. Fig. 3 shows new style terminal completed with insulation firmly gripped between wing clamps.

- No. 450, For No. 10 or 12 Cable, 25 Amperes. . . per 100 \$6.00
- No. 460, For No. 8 or 6 Cable, 50 Amperes. . . per 100 8.00
- No. 461, For No. 4 or 2 Cable, 100 Amperes. . . per 100 12.00
- No. 459, For No. 1 Cable, 150 Amperes. per 100 25.00

Kliegl Portable Work Lights

Useful where temporary lighting is required, as for cleaning auditoriums, and other interiors, repair work, etc.

When wired, cable passes through pedestal. Portable floor stands with lamp receptacle attached.



No. 655

One light, medium screw-base receptacle. Height, 3 feet.

No. 655. each \$5.50



No. 654

One light, outlet box, medium screw-base receptacle, and wire lamp guard. Height, 5 feet.

No. 654. each \$9.80

Above work lights wired with 35 feet of No. 18 all rubber covered Type S.J. flexible cord and attachment plug, \$4.00 additional.

Kliegl Spotlights
Plano Convex Lens Types

Standard general utility spotlights with the usual clear-glass condensing lens, designed for use with concentrated filament lamps. Sliding lamp carriage adjustable for focusing. Any type of mounting desired; pipe clamp, wall bracket, table base, or telescopic floor stand.

*No. 53E, 250-400 Watts, 4½-Inch Lens, Short Range 15 Ft., Med. Screw-Base Receptacle, Pipe Clamp. ea. \$12.00

*No. 5310E, 250-400 Watts, 4½-Inch Lens, Med. Range 25 Ft., Med. Screw-Base Receptacle, Pipe Clamp. ea. 14.00

*No. 70, 1000 Watts, 6-Inch Lens, Average Range 50 Ft., Mogul Prefocus Receptacle, Alzak Aluminum Reflector, Pipe Clamp. each 33.00

No. 6 N14, 2000 Watts, 6-Inch Lens, Average Range 50 Ft., Mogul Pre-focus Receptacle, Alzak Aluminum Reflector, Floor Stand. each 43.00

No. 8N20, 2000 Watts, 8-Inch Lens, Long Range 100 Ft., Mogul Prefocus Receptacle, Alzak Aluminum Reflector, Floor Stand. each 66.00

*Wall bracket or table base same price. Floor stand at slightly additional cost.



No. 53



No. 6N14



No. 70

Color-Changing Remote Control Types



No. 1165-BAC

Equipped with four electro-mechanically operated color frames, which permit entire service of spotlight, including change of colors, to be controlled from distant point. Bank of spots can be arranged to operate collectively or individually from a selective control board.

Also available for d.c. circuits.

No. 1165-BAC, 500 W., 6-In. Lens, 115 V., A.C. ea. \$160.00

No. 1366-BAC, 2000 W., 6-In. Lens, 115 V., A.C. ea. 211.00

No. 1368-BAC, 2000 W., 8-In. Lens, 115 V., A.C. ea. 223.00

Arc-Lamp Types



No. 11

Standard lights, with plano-convex condensing lens. Hand feed arc spots. Provided with external focusing and arc feed control. Hand grip for directional movement. Arc ballast resistance on stand. Enclosed line switch. Cable, 25 feet.

No. 6, 25 Amperes, 6-Inch Lens. each \$71.00

No. 9, 35 Amperes, 6-Inch Lens. each 79.00

No. 10, 50 Amperes, 6-Inch Lens. each 107.00

No. 11, 70 Amperes, 6-Inch Lens. each 145.00

No. 18, 70 Amperes, 8-Inch Lens. each 170.00

No. 12, 100 Amperes, 8-Inch Lens. each 286.00

No. 12, without Rheostat or Cable. ea. 175.00

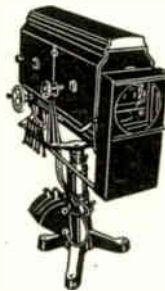
No. 1695 Long Range

Hand feed all-duty high powered long range arc spotlight fully equipped with boomerang for rapid color changes. Built-in adjustable iris and curtain shutters for framing light beam. Mounted on tubular-steel side-bracket on heavy cast iron base. With asbestos covered leads and line switch. Five color frames in color box on front.

Working range, 100 to 150 feet, 100 amperes, 8-inch condensing lens.

No. 1695. each \$460.00

No. 1701 Long Range



All-duty, automatic and hand feed arc spotlight with built-in iris and curtain shutters and six removable color frames in boomerang on front of spot, keyed color levers on side. Movable arc carriage with focusing control hand wheel and position indicator. Motor-driven mechanism for automatic arc regulation interconnected with hand controls. Balanced and supported in yoke on massive base. Furnished with leads and booster switch.

Working range 100 to 200 feet, 140 amperes, 10-inch condensing lens.

No. 1701. each \$675.00

NOTE. Resistance for connection in series with all-duty arc spots not included in prices listed. When ordered, they are supplied as separate units, without cable, for mounting at some out-of-the-way location.

Kliegl Floodlights

Stage Units

Used from side wings or from overhead on the stage. Provided with slide grooves on front for color frames with gelatine mediums. For P. S. lamps.

No. 1N Standing Types

Open-box reflector sprayed white; grooves for color frame. Pedestal floor stand, 25-foot cable. For 500-1500 watts.
No. 1N..... each \$24.00

No. 2N Standing Types

Parabolic boxed Alzak aluminum reflector; grooves for color frame. Pedestal floor stand, 25-foot cable. For 500-1500 watts.
No. 2N..... each \$40.00

No. 540 Hanging Types

Open-box reflector sprayed white; chain hangers; grooves for color frame. For 500 watts.
No. 540..... each \$11.50

No. 546 Hanging Types

Parabolic boxed Alzak aluminum reflector; grooves for color frames; pipe clamp hanger. For 500 watts.
No. 546..... each \$20.00



Studio Units

For photographic work, giving maximum efficiency, light control and flexibility. Applicable for general illumination and high lighting.

No. 1152 Incandescent Types

Deep corrugated polished Alzak aluminum reflector, for 1000-2000-watt P.S. lamps. Grooves for diffusing screen. Swivel yoke. Telescopic stand. Rubber tired roller base.
No. 1152..... each \$74.00



No. 1157 Incandescent Types

Parabolic matte Alzak aluminum reflector, for 1500-watt lamps. Self-diffusing. No slide grooves. Adjustably mounted. Telescopic roller base, floor stand.
No. 1157..... each \$48.00



No. 11F51 Fluorescent Types

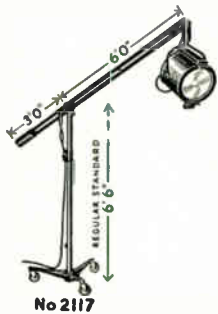
Fully equipped with lamp auxiliaries and accessible type starter switches. Bank of twelve 30-watt 36-inch fluorescent daylight lamps. Alzak aluminum reflector, swivel yoke and telescopic pedestal roller base.
No. 11F51..... each \$170.00



Kliegl Overhead Boom Spotlights

For photographic work. Spot-flood lights on mobile stands with counterbalanced adjustable boom arm. Fresnel lens type spotlights for concentrated filament lamps. Universal mounting provides for all positional requirements, and adjustable beam spread facilitates soft edge spotlighting or general floodlighting.

With regular standard, 6½ feet high.



No.	2117	2118
Each	\$250.00	290.00
Watts	2000	5000
Size Lens	inches 12	16

Special Standard, 8½ Feet High add \$40.00 additional.

Lamps not included.

Burton Fresnel Spotlights



No. 1200, Desk Model

The Burton Fresnel Spotlight is a small powerful spotlight for all commercial purposes. Especially adapted for use as a merchandise spotlight for window displays, counter displays, etc. An ideal spotlight for use in theater lobbies, or for high-lighting pictures, murals, statues, models, etc. Wherever a powerful intense spot is required and where the lighting source may be exposed, the Burton Fresnel Spotlight is recommended because of the high degree of efficiency and the beauty and eye appeal of the lighting unit itself. With an ordinary Mazda 100-watt projection bulb (T-8) it produces over 500 foot-candles of light at 36 inches from the spotlight. At 12 inches, it produces over 4,500 foot-candles of light.

The size of the field may be easily adjusted by means of a projector type lens mount that moves in and out of the lamp housing, thereby increasing and decreasing the intensity of the spot of light, as well as the size of the spot.

This spotlight receives its name from the lens used. The Fresnel lens is a special type of lens that is used in lighthouses because of the high intensity such lenses make possible. The emitting light is a beam of parallel rays and may be compared to the beam of light from a locomotive headlight.

Built of bakelite; stands less than 6½ inches in height from the bottom of the base to the top of the lamp housing. A bakelite handle on the back of the housing allows for easy tipping of the lamp housing to procure almost any angle of beam projection. By loosening this screw handle, the lamp housing can be easily removed to change lamps. A handy switch on the front of the unit provides for instantaneous "on and off" action of the bulb. On the front of the lens tube is a spring clip, behind which filters can be placed for producing light of any color or diffusion.

The base is a well finished casting to provide weight and balance, with four rubber knob feet, and the lamp housing tips on the base because of a specially constructed swivel block. Under the base is a thumb screw, allowing for quick removal of the base, should it be desired to mount the lamp housing on a stand, or otherwise attach it to another fixture.

No. 1200, Desk Model	each \$9.00
No. 1201, Floor Stand Model	each 14.00

The following lamps can be used in the Burton Fresnel Spotlight:

T-8 100-Watt Projection Bulb, 115 Volts, 50-Hour Life	each \$.85
T-8 50-Watt Projection Bulb, 115 Volts, 50-Hour Life	each .85
*T-8 100-Watt Projection Bulb, 130 Volts, 155-Hour Life on 115-Volt Line	each .85

*The intensity of this 130-volt lamp is only about 25 to 30 per cent less than the regular 115-volt lamp when burned on 115 volts—yet the life is increased 350 per cent.

Crouse-Hinds Floodlight Projectors

Long Range

Schedule F

Type ADE-12

200 to 250 Watts

Furnished with two types of reflectors, a narrow beam and a wide beam.

A clear, plain lens is furnished unless otherwise specified. A clear, diffusing lens and two types of spread lens, 50° and 100°, can be furnished without additional charge, if specified on the order.

Color screens can be furnished at \$6.00 list, each or the regular lens can be furnished in heat-resisting colored glass at \$3.00 list, additional.

Aluminum finish.

Shipping weight, 30 pounds.



Type ADE-12
With Standard Mounting

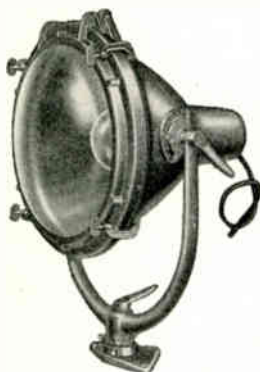
With Standard Mounting		With Slip Fitter		Description	LAMP	
No.	Each	No.	Each		Watts	Bulb
42428	\$38.00	42430	\$38.00	With Wide Beam Polished Alzak Reflector.....	200	PS-30
42874	38.00	42875	38.00	With Narrow Beam Polished Alzak Reflector.....	200	PS-30
42429	38.00	42431	38.00	With Narrow Beam Polished Alzak Reflector.....	250	G-30

Type ADE-14

500 Watts

Designed to intercept and direct into the beam, the maximum amount of the light of the lamp. A clear, plain lens is regularly furnished with these projectors, but a clear 50° or 100° spread lens (producing an elliptical beam of light), or a clear, diffusing lens can be furnished without additional charge, if specified on the order. Color screen can also be furnished.

Aluminum finish. Shipping weight, 48 pounds.



Type ADE-14 and ADE-16,
with Standard Mounting

With Standard Mounting		With Slip Fitter		*Description	LAMP	
No.	Each	No.	Each		Watts	Bulb
42740	\$60.00	42753	\$60.00	With Wide Beam Polished Alzak Reflector.....	500	PS-40
42739	60.00	42754	60.00	With Narrow Beam Polished Alzak Reflector.....	500	PS-40
42921	60.00	42922	60.00	With Narrow Beam Polished Alzak Reflector.....	500	†G-40

Type ADE-16

1000 Watts

A dust-tight and weatherproof unit, constructed entirely of corrosion-resisting metal. Several combinations of lenses, reflectors, and lamps are available so that the beam of the projector may be varied from a narrow beam to a wide beam.

Can be provided with various types of mountings so that the proper base may be selected for each particular installation; complete information upon request.

Natural aluminum finish. Shipping weight, 52 pounds.

With Standard Mounting		With Slip Fitter		*Description	LAMP	
No.	Each	No.	Each		Watts	Bulb
42741	\$85.00	42742	\$85.00	With Wide Beam Pol. Alzak Reflector.....	300 to 1000	PS-52
42743	85.00	42744	85.00	With Narrow Beam Pol. Alzak Reflector.....	500 or 1000	†G-40
42932	85.00	42933	85.00	With Narrow Beam Pol. Alzak Reflector.....	300 to 1000	PS-52

Types ADR-12 and ADR-14—Portable

Rugged units especially adaptable for portable use, either when a narrow beam spotlight or a wide evenly distributed beam of light is required. Has cast aluminum alloy, dust-tight, non-ventilated and weatherproof housing.

Supplied with a convenient carrying handle, a wheel base, so that the floodlight will stand without tipping; and 10 feet of heavy duty, rubber covered cable, with medium screw plug. Natural aluminum finish.

Type ADR-12—200 to 250 Watts

Shipping weight, 32 pounds.

No.	Each	Description	LAMP	
			Watts	Bulb
42950	\$45.00	With Narrow Beam Polished Alzak 12-Inch Reflector; Plain Lens.....	200	PS-30
42023A	45.00	With Narrow Beam Polished Alzak 12-Inch Reflector; Plain Lens.....	250	G-30
42024A	45.00	With Wide Beam Polished Alzak 12-Inch Reflector; Diffusing Lens....	200	PS-30

Type ADR-14—500 Watts

Shipping weight, 44 pounds.

42951	\$63.00	With Narrow Beam Polished Alzak 14-Inch Reflector; Plain Lens.....	500	PS-40
42783A	63.00	With Narrow Beam Polished Alzak 14-Inch Reflector; Plain Lens.....	500	G-40
42784A	63.00	With Wide Beam Polished Alzak 14-Inch Reflector; Diffusing Lens....	500	PS-40



Type ADR-12 and ADR-14
With Portable Mounting

*Silvered glass reflectors are available and will be furnished without extra charge, if specified on order.

†G-bulb lamps can be operated only from base down to horizontal; therefore, floodlights using these lamps should not

be tipped below the horizontal. Special floodlights, which can be tipped below the horizontal with these lamps, can be furnished if specified on order.

Prices do not include incandescent lamps.

Crouse-Hinds Floodlight Projectors

Medium and Long Range

Schedule F

Type LCE-1120

1500 Watts



Used for the illumination of large areas.

The unit can be arranged with plain, spread or diffusing lens.

The 750, 1000, or 1500-watt, PS-52 bulb lamp; or the 1000 or 1500-watt, G-bulb lamp, may be used as required.

When used with the G-bulb lamp, the housing is tipped over so that the lamp operates in a base-down position.

Finish: case, natural aluminum; base and trunnion, galvanized.

Shipping weight, 115 pounds.

Type LCE-24

2000 Watts



Designed to utilize the maximum amount of the light of the lamp and to allow large areas to be lighted with a smaller number of projectors.

Unless otherwise specified, the projector is equipped with a clear, plain lens.

However, a clear, spread lens which produces an elliptical beam of light, or a clear, diffusing lens can be furnished without additional charge, if specified on the order.

Finish: case, natural aluminum; base and trunnion, galvanized.

Shipping weight, 148 pounds.

No.	Each	*Description	LAMP	
			Watts	Bulb
42745	\$140.00	With Wide Beam Polished Alzak 20-Inch Reflector	750 to 1500	PS-52
42746	140.00	With Narrow Beam Polished Alzak 20-Inch Reflector	1000 or 1500	B
42953	140.00	With Narrow Beam Polished Alzak 20-Inch Reflector	750 to 1500	PS-52

No.	Each	*Description	LAMP	
			Watts	Bulb
42781	\$190.00	With Narrow Beam Polished Alzak 24-Inch Reflector	1500 or 2000	PS-52
42841	190.00	With Narrow Beam Polished Alzak 24-Inch Reflector	1500	G-48

*Silvered glass reflectors are available and will be furnished without extra charge, if specified on the order.

Prices do not include incandescent lamps.

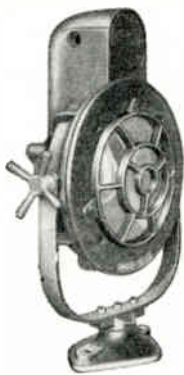
Type RCDE-8 Crouse-Hinds Explosion-Proof Floodlights

200 Watts

Schedule F



With Suspension Mounting



With Trunnion Mounting



Portable Unit

Designed to meet the requirements of an explosion-proof floodlight. Recommended for use around oil refineries, chemical plants, and for lighting spray booths from the outside.

For short range lighting, the wide beam etched Alzak reflector should be used; for longer range or for spotlight applications, the polished Alzak reflector provides a narrower beam.

As a portable unit, the aluminum door and housing are usually preferable on account of weight. Aluminum should be used where the unit will be subjected to hydrogen sulphide fumes.

Finish: cast Feraloy is cadmium-plated; cast aluminum or cast brass, natural finish.

The narrow beam reflector can be arranged for use with 150-watt, P-25 bulb lamp without extra charge, if specified on the order.

If grid is not desired, deduct \$1.50 from the list prices.

With Trunnion Mounting

For permanent installation.

No.	Each	With Narrow Beam Polished Alzak Reflector	No.	Each	With Wide Beam Etched Alzak Reflector	Housing	Door	Weight Pounds
41719A	\$75.00		41720A	\$71.75		Feraloy	Aluminum	52
41721A	85.00		41722A	81.75		Feraloy	Brass	67
41723A	75.00		41724A	71.75		Aluminum	Aluminum	35
41725A	102.00		41726A	98.75		Brass	Brass	71

With Suspension Mounting

41989A	\$72.00	41990A	\$68.75	Aluminum	Aluminum	32
41991A	72.00	41992A	68.75	Feraloy	Aluminum	49
41993A	99.00	41994A	95.75	Brass	Brass	68

Portable Unit

41727A	\$76.00	41728A	\$72.75	Aluminum	Aluminum	35
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Prices do not include incandescent lamps.

Type MUA Crouse-Hinds Floodlights

Schedule F

Designed for lighting gasoline service stations, tennis courts, playgrounds, swimming pools, parking spaces, football fields, baseball and softball fields.

The MUA line of light duty floodlights consists of three different types of reflectors, each of which can be furnished in several combinations. All of the reflectors are interchangeable on either of the two heads, and each reflector has different lighting characteristics.

Slip fitter, cross arm base, pole bracket, and pendent mountings can be supplied.

Furnished with 750, 1000, or 1500-watt, PS-52 bulb lamp. Floodlights will be furnished arranged for standard 500-watt lamp, if specified. Porcelain mogul screw base receptacle.

Finish: porcelain enameled reflectors, white inside and blue outside; aluminum reflectors, non-tarnishing Alzak; and support head, aluminum.

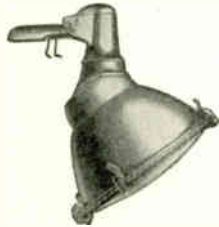
Alumalux Aluminum Reflectors

Model I Head

Medium beam reflector is designed for a beam spread of approximately 90°. It is very effective for medium range projection.

Narrow beam reflector has a beam spread of 30°. It is very effective for spotting small areas.

Can be furnished with hinged door and heat-resisting lens to keep the reflector clean and protect the lamp. Standard lens is clear; a stippled lens will be furnished if desired.



With Cross Arm Mounting

With Medium Beam Etched Alzak 18-Inch Reflector

Description	Without Hinged Door		With Hinged Door	
	No.	Each	No.	Each
1½-Inch Slip Fitter.....	42394A	\$27.00	44138	\$42.00
Cross Arm.....	42395A	25.00	44136	40.00
Pole Bracket.....	42396A	26.00	44140	41.00
Pendent Mounting.....	42401A	23.00	44150	38.00

With Narrow Beam Polished Alzak 18-Inch Reflector

1½-Inch Slip Fitter.....	42397A	\$34.00	44137	\$49.00
Cross Arm.....	42398A	32.00	44135	47.00
Pole Bracket.....	42399A	33.00	44139	48.00
Pendent Mounting.....	42402A	30.00	44151	45.00

Head and Support Complete Without Alzak Reflector

No.		Each
42177	1½-Inch Slip Fitter Mounting.....	\$11.00
42176	Cross Arm.....	9.00
42178	Bracket Mounting.....	10.00
42380	Pendent Mounting.....	7.00

Reflector and Hinged Door Complete Without Head and Support

No.		Each
44152	Medium Beam Reflector, Clear Lens.....	\$31.00
44153	Narrow Beam Reflector, Clear Lens.....	38.00

Elliptalux Porcelain Enameled Reflectors*

Model I Head

Wide beam auxiliary reflector is sheet aluminum with etched Alzak finish. Superimposes on the general distribution a wide beam of high intensity for lighting distant areas.

Narrow beam auxiliary reflector is sheet aluminum with polished Alzak finish. Supplies a narrow beam of high intensity having a spread of 40° horizontally by 27° vertically.



With Slip Fitter Mounting

Without Auxiliary Reflector

No.	Description	Each
42174	1½-Inch Slip Fitter.....	\$19.00
42173	Cross Arm.....	17.00
42175	Pole Bracket.....	18.00
42381	Pendent Mounting.....	15.00

With Wide Beam Etched Alzak Auxiliary Reflector

42188	1½-Inch Slip Fitter.....	\$22.00
42187	Cross Arm.....	20.00
42189	Pole Bracket.....	21.00
42384	Pendent Mounting.....	18.00

With Narrow Beam Polished Alzak Auxiliary Reflector

42180	1½-Inch Slip Fitter.....	\$25.00
42179	Cross Arm.....	23.00
42181	Pole Bracket.....	24.00
42382	Pendent Mounting.....	21.00

Prices Do Not Include Incandescent Lamps

Model II Head

The adjustable head and support arm is recommended for athletic field installations. Can be tipped completely over for convenience when relamping and cleaning and when it is swung back against the adjustable relamping stop, it is in its exact original position.

Mounting provides both horizontal and vertical degree scales for accurate setting of the floodlight during installation.

Special cross arm bracket for steel tower mounting, using two bolts, can be furnished without additional charge if specified.

Furnished wired complete with two single conductors of rubber-covered service wire, 4-feet long, or 4 feet of 2-conductor cable. Either open style or with enclosing lens. Hinged door and lens recommended for keeping the reflecting surface free from dirt and dust, and preventing lamp breakages. Standard lens is clear; a stippled lens will be furnished if desired.

With Medium Beam Etched Alzak 18-Inch Reflector

Description	Without Hinged Door		With Hinged Door	
	No.	Each	No.	Each
1½-Inch Slip Fitter.....	43911	\$27.00	43953	\$42.00
Cross Arm.....	43909	25.00	43951	40.00
Pole Bracket.....	43917	26.00	43959	41.00

With Narrow Beam Polished Alzak 18-Inch Reflector

1½-Inch Slip Fitter.....	43912	\$34.00	43954	\$49.00
Cross Arm.....	43910	32.00	43952	47.00
Pole Bracket.....	43918	33.00	43960	48.00

Head and Support Complete Without Alzak Reflector

No.		Each
43507	1½-Inch Slip Fitter Mounting.....	\$11.00
43506	Cross Arm.....	9.00
43510	Bracket Mounting.....	10.00

Reflector and Hinged Door Complete Without Head and Support

No.		Each
44152	Medium Beam Reflector, Clear Lens.....	\$31.00
44153	Narrow Beam Reflector, Clear Lens.....	38.00

Multalux Porcelain Enameled Reflectors*

Model I Head

Designed for lighting service stations. Interchangeable.

Wide beam auxiliary reflector is sheet aluminum with etched Alzak finish. Superimposes on the general distribution a wide beam of high intensity for lighting buildings and pumps.

Narrow beam auxiliary reflector is sheet aluminum with polished Alzak finish.

Without Auxiliary Reflector

No.	Description	Each
42206	1½-Inch Slip Fitter.....	\$30.00
42207	Cross Arm.....	28.00
42208	Pole Bracket.....	29.00
42387	Pendent Mounting.....	26.00

With Wide Beam Etched Alzak Auxiliary Reflector

42209	1½-Inch Slip Fitter.....	\$33.00
42210	Cross Arm.....	31.00
42211	Pole Bracket.....	32.00
42388	Pendent Mounting.....	29.00

With Narrow Beam Polished Alzak Auxiliary Reflector

42212	1½-Inch Slip Fitter.....	\$36.00
42213	Cross Arm.....	34.00
42214	Pole Bracket.....	35.00
42389	Pendent Mounting.....	32.00

*Also furnished with Model II head.

Crouse-Hinds Floodlights

Schedule F

Types MDB-8 and MDB-10

8-Inch, 100 Watts

10-Inch, 200 Watts



With Standard Mounting

Lightweight, weather-proof units, ideally suited to such installations as the lighting of residential yards and driveways, gardens, etc.

Round flange base can be bolted to any flat horizontal or vertical surface. Holes are spaced to fit holes in a 4-inch outlet box. Steel stake provided for temporary mounting on the ground. Suspension mounting furnished without additional charge.

When furnished with polished Alzak reflector, these units become spotlights.

Aluminum finish.

Shipping weight: Type MDB-8, 7½ pounds; Type MDB-10, 9 pounds.

Types MDB-14 and MDB-16

14-Inch, 500 Watts

16-Inch, 1000 Watts



With Standard Base

Lightweight, weather-proof floodlights. Furnished with heat-resisting clear lenses.

Cast aluminum socket housing and support. Reflectors are for narrow, medium, and wide beam; attached to housing by four screws and keyhole slots.

When installing the floodlights, the housing and mounting can be installed and wired complete before the reflector is attached.

Aluminum finish.

*With Wide Beam Etched Aluminum Reflector				With Narrow Beam Polished Alzak Reflector				Color of Lens
Type MDB-8 100 Watts		Type MDB-10 200 Watts		Type MDB-8 100 Watts		Type MDB-10 200 Watts		
No.	Each	No.	Each	No.	Each	No.	Each	
42403	\$6.50	42405	\$10.50	42409	\$9.50	42411	\$14.50	Clear
42434	8.50	42438	14.50	42442	11.50	42446	18.50	Red
42435	8.50	42439	14.50	42443	11.50	42447	18.50	Amber
42436	8.50	42440	14.50	42444	11.50	42448	18.50	Green
42437	8.50	42441	14.50	42445	11.50	42449	18.50	Blue

*Furnished in etched Alzak finish, Type MDB-8, add \$1.50; Type MDB-10, \$2.00.

Without lens or clamping ring, Type MDB-8, deduct \$2.00; Type MDB-10, deduct \$4.00.

Prices do not include incandescent lamps.

Accessories and Parts

Description	For Type MDB-8		For Type MDB-10	
	No.	Each	No.	Each
Plain Lens	HL5375	\$1.70	HL6813	\$3.50
Spread Lens	HL5376	1.70	HL6815	3.50
Diffusing Lens	HL5377	1.70	HL6814	3.50
Plain Red Lens	HL5754	3.70	KL507	7.50
Plain Amber Lens	HL5753	3.70	KL508	7.50
Plain Green Lens	HL5755	3.70	KL509	7.50
Plain Blue Lens	KL511	3.70	KL510	7.50
Lamp Receptacle	HL4203	.60	HL4203	.60

Desc.	Type MDB-14		Type MDB-16			
	No.	Each	No.	Each		
With Std. Base	42491A	\$26.00	42461A	\$26.00	42462A	\$31.00
With Slip Fitter	42487A	27.00	42495A	27.00	42721A	32.00
With Cross Arm Base Reflector Only	42488A	25.00	42496A	25.00	42722A	30.00
	42489A	16.50	42497A	16.50	42723A	21.50

Desc.	Type MDB-14		Type MDB-16			
	No.	Each	No.	Each		
With Std. Base	42490A	\$34.00	42465A	\$34.00	42466A	\$40.00
With Slip Fitter	42484A	35.00	42492A	35.00	42498A	41.00
With Cross Arm Base Reflector Only	42485A	33.00	42493A	33.00	42499A	39.00
	42486	24.50	42494	24.50	42500	30.50

Without lens or clamping ring, Type MDB-14, deduct \$6.00; Type MDB-16, deduct \$11.00.

Head and Support Complete			
No. 43393, Cross Arm	each	\$8.50	
No. 43479, 1½-Inch Slip Fitter	each	10.50	
No. 43478, Standard Base	each	9.50	

Type RCD-8 Crouse-Hinds Lighting Units

Schedule R

Designed for mounting in concrete. Made in two styles: one for floor mounting and the other for wall mounting.

This unit provides perfect lighting for pits, underpasses, tunnels and washracks.

Form F for Floor Mounting: Watertight, with a door that overlaps the case; projecting above the concrete about 3/8 inch. Door has rough pebbled surface, which prevents it from becoming slippery.

Has flat lens which is heavy enough to allow it to be stepped on or driven over and offers great resistance to tools or other articles that might be dropped on it. Can also be furnished with glass lens which has been heat treated to increase its resistance both to impact and to a static load; available only in the plain type.

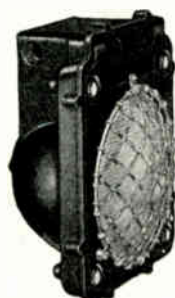


Form F

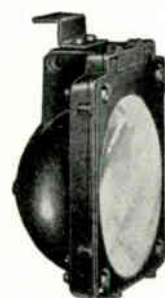
Form W for Wall Mounting: Similar to Form F, except it is provided with a hinged and flush door, so that it can be set absolutely flush with concrete wall. Can also be mounted on a ceiling or wall by using brackets. The refracting lenses can be set to refract light up or down.

Black enamel finish.

Shipping weight, 30 pounds.



Form W, with Hinged Door and Grid



Form W, with Z Bracket
Form F for Floor Mounting



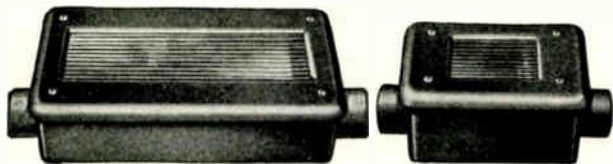
Form W, with Frame and Grid

Description	With Plain Lens		With Refracting Lens	
	No.	Each	No.	Each
With Impact-Resisting Glass, Leaded In	41427A	\$20.00		
Form W for Wall Mounting				
With Grid	41409	\$20.00	41410	\$20.00
Without Grid	41332	19.00	41334	19.00

Prices do not include incandescent lamps.

Type FS Crouse-Hinds Lighting Units

Schedule F



25-Watt

6-Watt

Small lighting units made to mount flush in concrete, stone, or plastered walls; to light steps, walks, floors and gardens. Also used in hospitals, mounted low in the wall for lighting the floor without disturbing patients.

Cover is equipped with refracting glass, which is normally set to refract light downward. Two styles are shown; a 25-watt and 6-watt unit, with two hub combinations each, through feed and bottom hubs.

Cast Feraloy housings, cadmium galvanized. Cast aluminum or cast brass housings can be furnished.

Standard hubs have an integral bushing and tapered thread. Can be furnished with threadless hubs or thick or thin wall conduit; prices upon request.

Intermediate screw base receptacle, for 25-watt units; candelabra screw base, for 6-watt units.

Clear, one-way, refracting, ribbed glass lens.

Cast aluminum cover, natural finish or cast brass, chromium-plate polished finish. A gasket is furnished to make a watertight joint with the housing.

The receptacles complete with mounting brackets, can be attached to the standard FS Series condulets, single and 4-gang with the screws which are furnished with them.

25 Watts

With Aluminum Cover

Shipping weight, 6½ pounds.

Size Inches	Through Feed		Bottom Hub	
	No.	Each	No.	Each
¾	42912	\$7.20	42904	\$7.00
1	42913	7.40	42905	7.30

With Chromium-Plated Brass Cover

Shipping weight, 8 pounds.

¾	42914	\$10.20	42906	\$10.00
1	42915	10.40	42907	10.30

6 Watts

With Aluminum Cover

Shipping weight, 3 pounds.

½	42877	\$3.60	42879	\$3.50
¾	42916	3.80	42908	3.60
1	42917	4.05	42909	3.70

With Chromium-Plated Brass Cover

Shipping weight, 3¾ pounds.

½	42878	\$5.10	42880	\$5.00
¾	42918	5.30	42910	5.10
1	42919	5.55	42911	5.20

Prices do not include incandescent lamps.

Covers
Aluminum

No.	KL326	KL316
Each.	\$3.00	1.75
Size. watts	25	6
Shipping Weight. pounds	1½	½

Chromium-Plated Brass

No.	KL328	KL318
Each.	\$6.00	3.25
Size. watts	25	6
Shipping Weight. pounds	3	1½

Receptacles

Complete with brackets.

No.	KI.330	KI.321
Each.	\$1.20	.90
Size. watts	25	6

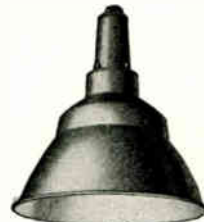
Type MDS Crouse-Hinds High Bay Lighting Units

Alzak Aluminum—with Type C Pendant Head

Schedule R



With Tennis Court or Wide Angle Reflector



With Concentrating Distribution Reflector

Designed for the interior lighting of buildings having high ceilings such as industrial buildings, armories, gymnasiums, etc. Particularly adapted to light shops with overhead craneways. Light weight and high efficiency makes it an ideal unit for lighting boxing and wrestling rings.

Cast aluminum receptacle housing. Receptacle cap has outside thread for hex nut and inside tap for ½-inch conduit. Can be furnished tapped for ¾-inch conduit without additional charge if specified. Two gaskets make the socket assembly weatherproof.

The 1000 or 1500-watt reflector, is furnished in three types: wide angle reflector suitable for tennis court lighting and for medium mounting heights; flood distribution reflector for wide spread distribution; and concentrating reflector for high mounting and narrow areas.

The 500-watt reflector is furnished in the flood distribution and concentrating distribution types.

A span wire hanger can be furnished, consisting of a conduit with a ¼-inch hub attached to the socket housing by a close nipple and a porcelain two-wire hole cover. Porcelain insulators are provided for carrying the overhead wires. The hangers can be furnished for two or three-wire service. The span wire clamp will clamp wires from ¼ to ¾ inch in diameter.

Aluminum finish.

Type MDS-16, 500 Watts

No.	Description	Each
44118	Flood Distribution 16-Inch Reflector.....	\$12.00
44117	*Concentrating Distribution 16-Inch Reflector	12.00

Types MDS-16 and MDS-18, 1000 and 1500 Watts

42883	Tennis Court or Wide Angle 16-Inch Reflector	\$12.00
44120	Flood Distribution 18-Inch Reflector.....	14.50
44119	*Concentrating Distribution 18-Inch Reflector	14.50

*For unusually high mounting heights, a reflector having more concentrated distribution than the standard reflector can be furnished at the same price.

Cover glasses can be furnished; prices upon request.

Accessories

No.	Description	Each
HL3875	Two-Wire Span Wire Hanger.....	\$1.85
HL3984	Three-Wire Span Wire Hanger.....	2.50
KL2248	Half Hood for 16-Inch Unit.....	3.50
KI.2249	Half Hood for 18-Inch Unit.....	4.00

Type DCB-36 Crouse-Hinds Rotating Beacons

36-Inch Diameter



A rotating beacon of high efficiency which projects beams of light in two directions, 180° apart.

The optical system consists of a lens combination in each end of the housing, with a single lamp in the center.

Each combination consists of an 18-inch inner doublet lens and a 36-inch outer lens. The outer lens is made of a one-piece, bull's-eye lens, 20 inches in diameter, surrounded by twelve 30° sectors of an annular ring.

When color is required in either or both ends of the beacon, the inner doublet lens is furnished in red or green.

Aluminum finish.
Shipping weight, 825 pounds.

No. 41281—Standard

Meets the specifications of the Civil Aeronautics Authority for airport beacons, when equipped with one end clear and one end green, and rotated at 6 rpm.

No. 41304—Advertising

Beacons which are not located at airports and are installed for advertising purposes must be approved by the Civil Aeronautics Authority before installation. The speed of rotation required is 1 rpm. and both beams of the beacon must be red in color.

In addition to the rotating beacon, it is necessary to install a 24-inch fixed directional searchlight with automatic lamp-changer, with the white beam pointing towards the nearest airport.

Prices upon request.

Crouse-Hinds Rotating Beacons 24-Inch Diameter

Designed to Civil Aeronautics Authority specifications for use on airlines. Base is identical on both beacons and designed for accessibility. The cast aluminum pan, which encloses the rotating mechanism, is easily lowered and removed.

Furnished with a rotating type lamp-changer, which is provided with separate spherical auxiliary reflectors for the operating and spare lamps.

Aluminum finish.

Type DCB-24D—Dome Type

Encloses the optical system under a heat-resisting Pyrex glass dome. This prevents any possibility of the beacon becoming stalled due to an accumulation of ice in northern climates.

Has greater visibility as the lamp itself is visible to planes flying above the main beam. Lamp also provides a low candlepower flash through an angle of 50° both preceding and following the main flash.

Dome is hinged for access to the lamps and reflectors.

No. 43354 is a 12-rpm., 500-watt beacon.

Shipping weight, 450 pounds.



Type DCB-24R—Drum Type

Has drum rigidly mounted on the rotating shaft. The beam can be raised and lowered by raising and lowering the lamp table on the lamp-changer. The lamp-changer shaft is calibrated in degrees. Normal factory setting is with the beam 1.5° above horizontal.

No. 43355 is a 12-rpm., white beam, 500-watt beacon.

No. 43356 is a 6-rpm., red beam, 1000-watt beacon; for marking hazardous areas.

No. 43357 is a 2-rpm., red beam, 1000-watt beacon; for advertising purposes.

Shipping weight, 400 pounds.

Prices upon request.



Crouse-Hinds Incandescent Searchlights

16-Inch Diameter—Long Range

Continuous Service, 1000 Watts
Intermittent Service, 1500 Watts
Schedule F

Designed for long range spotlight or searchlight use. The accurate reflector used confines the light to a narrow beam of high candlepower.

Type lamp to be used must be specified when ordering. Prices do include incandescent lamps.

These searchlights can also be furnished in 14, 18, 24, and 36-inch sizes.

Type DCE-16—Trunnion Mounting

For use as a fixed searchlight for spotting small areas from a distance. It can be used as a hand controlled searchlight, but Type DCY-16 is recommended where the searchlight must be redirected frequently.

Shipping weight, 90 pounds.

No. 41354, Mogul Prefocus Base each \$200.00

No. 41983, Mogul Bipost Base each 200.00

Type DCY-16—Pedestal Mounting

A hand-controlled searchlight for use on boats, watch towers, etc., where it is convenient to direct the searchlight by the handle mounted on the back of the housing. The horizontal adjustment is provided with ball bearings.

Shipping weight, 140 pounds.

No. 42848, Mogul Prefocus Base each \$225.00

No. 42849, Mogul Bipost Base each 225.00

Type DCX-16—Pilot House Control

Designed to be mounted on the roof of a pilot house or watch tower and to be controlled from below by means of levers.

The horizontal adjustment is provided with ball bearings. Length of standard control stem below base is 3 inches; longer control stems up to 18 inches can be furnished without additional charge. Control stems longer than 18 inches.

\$3.00 list per foot additional.



Type DCE-16

The lever controlling the vertical adjustment locks itself when released.

Shipping weight, 155 pounds.

No. 42850, Mogul Prefocus Base each \$265.00

No. 42851, Mogul Bipost Base each 265.00

Type DCXR-16—Remote Control

Similar to Type DCX-16, except it is arranged for remote control with wire rope and pulleys. Two pulleys are provided on the control stem and two on the remote control wheel assembly. The wire rope or cable connecting them is not supplied.

For use on ships where the searchlight is only used intermittently, or where the lamp life of 100 hours is satisfactory, the 420-watt, 12-volt lamp is recommended. The highly concentrated filament produces a much narrower beam than can be obtained with any higher voltage lamp.

Most ships use 115 volts, d. c. for lighting, but it is a simple matter to install; a small standard rotary converter can be installed to change 115 volts, d.c. to 110 volts, a.c., and a transformer to reduce the 110 volts, a.c. to 12 volts.

Can be furnished of entirely non-magnetic construction; prices upon request.

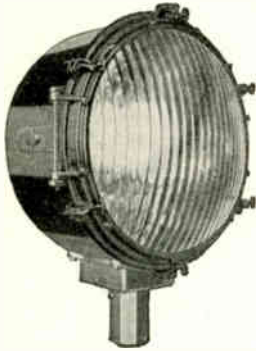
Shipping weight, 175 pounds.

No. 42852, Mogul Prefocus Base each \$265.00

No. 42853, Mogul Bipost Base each 265.00

Type DCE-24 Crouse-Hinds Airport Floodlights

1500 or 3000 Watts



Designed for the illumination of large landing fields. Can be used in banks of from three to fourteen units with the beams overlapped for the illumination of level fields, or in groups of two at each end of each runway for runway floodlighting.

For 1500-watt lamps—No. 42938B, with 10° spread lens; No. 42939B, with 30° spread lens; and No. 42940B, with 80° spread lens.

For 3000-watt lamps—No. 42482B, with 10° spread lens; No. 40775B, with 30° spread lens; and No. 40783B, with 80° spread lens.

International orange enamel finish with white stripes. Shipping weight, 187 pounds. Prices and complete information upon request.

Crouse-Hinds Beacons and Switches For Flashing Code and Marking Obstructions

200 or 500 Watts

Type FCB-12 Beacons

Designed for use as an auxiliary code flashing beacon at airports, and as a marker light for major obstructions to air navigation.

When used at airports, it is usually equipped with green color screens and two 500-watt lamps, and flashes a Morse code signal, designating the airport. Code signal consists of from one to three letters, and must be approved by the Civil Aeronautics Authority. Should be mounted high enough to allow its beam to clear surrounding obstacles.

When used to mark major obstructions, such as radio towers, bridge towers, etc., it should be equipped

with 200 or 500-watt lamps as required by Civil Aeronautics Authority Regulations, and red color screens. Beacons used on radio towers must be flashed. Most other obstruction marking beacons are not flashed.

When used to mark hazardous flying areas, such as oil fields, or highly-explosive danger areas, beacon should be equipped with 500-watt lamps and red color screens; and should be flashed.

A complete summary of Civil Aeronautics Authority Requirements for marking obstructions will be furnished on request.

For 200-watt lamps—No. 42196C is clear, no color screen; No. 42197C has red color screen; and No. 42198C has green color screen.

For 500-watt lamps—No. 41252C is clear, no color screen; No. 41257C has red color screen; and No. 41258C has green color screen.

Aluminum finish. Shipping weight, 95 pounds.

Type TSS-18 Switches

110-Volt, 60-Cycle

A code flashing switch consists of an induction-disk motor driving a cam shaft through a train of spur gearing. The cam, which is made to order for the code required, operates the large diameter, wide break, non-corrosive metal contacts.

This flasher can be furnished for operating any two-letter code and some combinations of more than two letters. The contacts have a capacity of 10 amperes.

A radio interference suppressor is furnished as standard equipment.

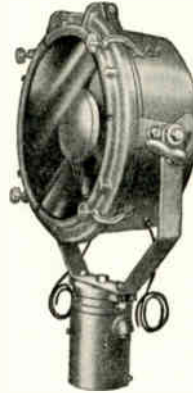
No. 46396 is a standard flasher.

No. 46397 is a code flasher.

Shipping weight, 30 pounds.

Prices upon request.

Crouse-Hinds Ceiling Projectors and Ceiling Height Indicators



Type DCE-16, with Slip Fitter



No. 43375 Ceiling Height Indicator

Every airport should be equipped with a ceiling projector and a ceiling height indicator, by means of which the ceiling or height of the clouds above the ground may be accurately measured. Ceiling projector is a powerful searchlight, the beam of which is pointed upward to the clouds; the ceiling height indicator, a quadrant, graduated directly in feet.

A suitable switch may be mounted near the ceiling height indicator and an underground cable run to the ceiling projector which is 500 feet away. Beam of the ceiling projector should be elevated at an angle of 63° 26'.

Type DCE-16 Ceiling Projectors

No. 42099 with transformer and slip fitter.

No. 42100 without transformer.

No. 43096 ornamental base only, with transformer.

Shipping weight: with transformer, 120 pounds; without transformer, 100 pounds.

No. 43375 Ceiling Height Indicators

With 2½-inch screw fitter.

Shipping weight, 20 pounds. Prices upon request.

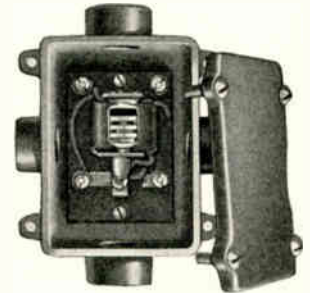
Crouse-Hinds Airport Lights Boundary, Obstruction, and Range Lighting



Boundary Light



Obstruction Light



Relay Box

A complete line of boundary, obstruction, contact, and range lights of all types are manufactured.

Equipped with prismatic globes; meet the regulations of the Civil Aeronautics Authority. Boundary lights with plain globes to match existing installations of that type can be furnished.

Prismatic globes provide higher candlepower within the useful angle, and permit the use of smaller lamps.

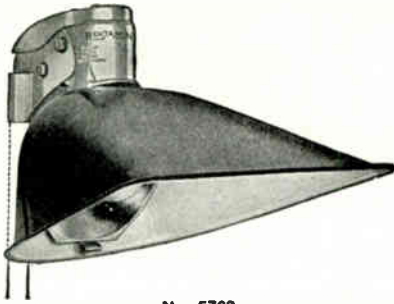
Series type relay is designed to complete the circuit to the spare lamp upon failure of the operating lamp. It is recommended that an indicating light be installed at some convenient point to indicate when operating lamp has failed. The relay listed will operate with either a 60 or 100-watt lamp; relays for other lamps can be furnished.

Description	For Series Circuits No.	For Multiple Circuits No.
Boundary Light with Globe	42985	42967
Single Obstruction Light with Globe	42971	42969
Range Light with Globe	42986	42968
Double Obstruction Light with Globes	42972	42970
Single Body for Boundary, Obstruction, or Range Light; Complete without Globe	42963	42961
Relay Box		HL5556

Prices upon request.

Benjamin Duo-Service Floodlights

For 750, 1000 and 1500-Watt Lamps



No. 5763

Used for lighting gasoline service stations, super-service stations, roadside inns, etc.

Porcelain enameled steel reflector, regularly supplied green outside, special diffusing surface white inside. When specified, choice of red or white outside, without extra charge.

Has No. 2772 one-piece, mogul base receptacle, with improved finger type lamp grip.

All fittings not aluminum are electro-plated to resist corrosion.

CLOSED WIRING, SLIP FITTER mounting bracket has wires completely enclosed and protected from receptacle through to pole. Bracket slips over the end of a 1½ inch iron pipe mast; also available for 2 inch pipe. Horizontal and vertical adjustments have degree marking graduations.

OPEN WIRING, CROSS ARM mounting bracket has separable hood with weatherproof wire entrance bushing which can be replaced with standard BX connector. Fits standard 4¼ inch arms and any flat surface. Horizontal and vertical adjustments have degree marking graduations.

With Concentrating Beam Inner Projector

Has efficient, highly polished aluminum reflecting surface producing a narrow, concentrated, high intensity floodlight beam.

No.	Description	Ship. Wt., Lb. Each	Each	Inner Projector Each
5763	Fits 1½-Inch Iron Pipe Mast.	35	\$36.00	\$6.00
*27563	Fits 1½-Inch Iron Pipe Mast.	50	45.00	6.00
5763-A	Fits 2-Inch Iron Pipe Mast. . .	35	36.00	6.00
*27563-A	Fits 2-Inch Iron Pipe Mast. . .	50	45.00	6.00
5933	With Cross Arm Bracket.	35	35.00	6.00

With Medium-Spread Beam Inner Reflector

Reflecting surface is oxidized aluminum, providing a sufficient amount of spread to widen the floodlight beam considerably.

No.	Description	Ship. Wt., Lb. Each	Each	Inner Projector Each
5764	Fits 1½-Inch Iron Pipe Mast. . .	35	\$33.00	\$3.00
*27564	Fits 1½-Inch Iron Pipe Mast. . .	50	42.00	3.00
5764-A	Fits 2-Inch Iron Pipe Mast. . . .	35	33.00	3.00
*27564-A	Fits 2-Inch Iron Pipe Mast. . . .	50	42.00	3.00
5934	With Cross Arm Bracket.	35	32.00	3.00

With Wide-Spread Beam Inner Reflector

Has oxidized aluminum reflecting surface, but is considerably larger than the medium-spread reflector above, and thereby intercepts more light producing much broader floodlighting coverage.

No.	Description	Ship. Wt., Lb. Each	Each	Inner Projector Each
5766	Fits 1½-Inch Iron Pipe Mast. . .	35	\$34.50	\$4.50
*27566	Fits 1½-Inch Iron Pipe Mast. . .	50	43.50	4.50
5766-A	Fits 2-Inch Iron Pipe Mast. . . .	35	34.50	4.50
*27566-A	Fits 2-Inch Iron Pipe Mast. . . .	50	43.50	4.50
5936	With Cross Arm Bracket.	35	33.50	4.50

For Bi-Post Lamps

Floodlight can be supplied with holder for 1000-watt, medium Bi-post, hard-glass lamp. To order, prefix number with BP and add \$2.00; for Saflox add \$2.50 list.

*Furnished with Saflox attachment.

Benjamin Ellipto-Lite Play-Area Floodlights



No. 5777

A wide angle, open type diffusing reflector particularly suited for floodlighting recreational areas, playgrounds, parking lots, etc. It is weatherproof throughout.

The hood is made in four types: pendent for attaching directly to a threaded pipe; with cross arm bracket for fastening to flat surfaces; with cross arm and pipe clamp for attaching to 1 to 2-inch pipe; or with slip fitter to slip over 1½ or 2-inch pipe.

A wide range of adjustment vertically is provided by the cross arm bracket hood and slip fitter bracket hood, while all hoods provide complete adjustability of the reflector horizontally.

The porcelain enameled steel reflector is finished green outside, white inside. Inner auxiliary reflector has special Alzak oxidized aluminum finish.

The cross arm unit is supplied with a 26-inch length of No. 14 2-conductor AFS rubber covered cable; slip-fitter unit (except Saflox) has two 31-inch lengths of No. 14 solid AF wire.

Fittings not aluminum, are electro-plated.

With Pendent Hoods

Hood tapped ¾ inches standard; 1 inch, if specified.

Size Lamp Watts	With Inner Reflector		Less Inner Reflector		Diam. In.	Ht. In.	Ship. Wt. Lb. Each
	No.	Each	No.	Each			
300,500	5770	\$17.00	5772	\$14.00	20	19	19
750,1500	5970	18.00	5973	15.00	21⅞	22¾	24

With Cross Arm Brackets

Fits standard 4¼-inch arms and any flat surface.

300,500	5771	\$19.00	5773	\$16.00	20	18¼	24
750,1500	5971	20.00	5974	17.00	21⅞	21¾	26

With Cross Arms and Pipe Clamps

Bracket clamps around 1 to 2-inch iron pipe.

300,500	5777	\$20.00	5779	\$17.00	20	18¼	21
750,1500	5977	21.00	5978	18.00	21⅞	21¾	25

With Slip-Fitter Brackets

Bracket slips on 1½-inch iron pipe mast.

300,500	5774	\$21.00	5775	\$18.00	20	18¼	21
300,500	*5774A	21.00	*5775A	18.00	20	18¼	21
750,1500	5975	22.00	5976	19.00	21⅞	21¾	28
750,1500	*5975A	22.00	*5976A	19.00	21⅞	21¾	28

With Saflox Lowering Attachment

Bracket slips on 1½-inch iron pipe mast.

750,1500	25975	\$36.00	25976	\$33.00	21⅞	....	41
750,1500	*25975A	36.00	*25976A	33.00	21⅞	....	41

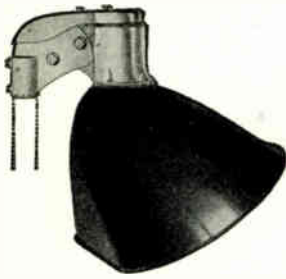
For Bi-Post Lamps

Floodlight can be supplied with holder for 1000-watt, medium Bi-post, hard-glass lamp. To order, prefix number with BP and add \$2.00 list (with Saflox add \$2.50). A length of No. 12AF nickel fixture wire is included (except Saflox).

*Slips on 2-inch iron pipe mast.

Benjamin Play-Area Floodlights

For 750, 1000, and 1500-Watt Lamps



No. 5752

An open type, wide angle, diffusing floodlight designed for lighting outdoor recreational areas such as football and athletic fields, race tracks, etc. Provides uniform, strong illumination on the ground area to the front and sides and improves upper area illumination.

Available in 3 types of mounting brackets: Open-wiring cross arm bracket for attaching to wood cross arms and other flat surfaces; cross arm with pipe clamp for clamping around 1 to 2-inch iron pipe; closed-wiring slip fitter bracket for fitting over end of 1½-inch iron pipe mast; also available to fit over 2-inch pipe. Reflector is 28½ inches long, and 17½ inches wide.

Porcelain enameled reflector, green outside, white inside; inner reflector is non-corrosive Alzak oxidized aluminum; all metal parts are cast aluminum or electro-plated.

Saflox lowering attachment allows unit to be lowered for servicing on ground.

Open-Wiring—Cross Arm Bracket Type

- No. 5751, with Cross Arm Bracket..... each \$29.00
- No. 5754, with Cross Arm Bracket and Pipe Clamp..... each 30.00

Closed-Wiring—With Slip Fitter Bracket

- No. 5752, for 1½-Inch Pipe..... each \$31.00
- No. 5752A, for 2-Inch Pipe..... each 31.00

With Saflox Lowering Attachment

- No. 25752, to Fit 1½-Inch Pipe..... each \$40.00
- No. 25752A, to Fit 2-Inch Pipe..... each 40.00

Benjamin Column-Lite Fixtures



No. 5681

One-piece, seamless, porcelain enameled steel reflector. Regularly supplied green or red outside, special diffusing white inside to reduce glare from specular reflection. When specified, on special order, fixtures can be supplied in white, blue, yellow, gray, or cream; prices on request.

Shock-absorbing socket to protect lamp filament against shocks and vibration. A shock-absorbing spring, permanently attached to

socket supporting strap, floats the one-piece porcelain, listed by Underwriters' standard socket which has easy-to-wire, side terminal screws.

Slip fitter bracket of cast iron is first electro-plated and then finished in sprayed aluminum. Slip fitter fits over end of unthreaded 2-inch iron pipe mast and is locked in place by 2 large, rugged set screws. Spring cartridge in bracket yoke holds shielding ring when supplied securely against lamp.

Supplied with or without shielding ring.

Lamp Watts	Without Ring		With Shielding Ring		Outside Reflector Finish	Diam. In.	Ht. In.	Ship. Wt. Lbs.
	Cat. No.	Each	Cat. No.	Each				
*150,200	5680G	\$10.00	5685G	\$12.00	Green	18	19½	21
*150,200	5680R	10.00	5685R	12.00	Red	18	19½	21
300,500	5681G	10.00	5687G	12.00	Green	20	21½	25
300,500	5681R	10.00	5687R	12.00	Red	20	21½	25

*For 150-watt lamps, use socket extension No. 91 to correctly position lamp in reflector. Sockets for replacement, No. 44, medium, No. 244, mogul.

Benjamin Variety-Lites



For use about the home and business establishment. Indoors, it is ideal for lighting furnace rooms, laundries, stairways, store-rooms and attics. Outdoors, for porches, garage approaches, gardens and play-areas.

The porcelain enameled steel reflector is not affected by heat or dampness and is easily cleaned. Reflecting white inside, gray outside, with black bead. Has snap-in type, etched aluminum inner reflector.

Cast iron reflector cap and steel bracket; finished in blue lacquer over galvanizing. Steel bracket band is electro-plated.

Unit can be quickly attached to any flat surface by first installing the two No. 10 round headed wood screws furnished and then slipping the key hole slots of the bracket over them.

Supplied wired, with 6 feet of rubber service cord and rubber plug.

Packed 1 in a standard package.

No.	1934	1936
Each.....	\$3.65	3.95
Size Lamp.....watts	100	200, *300
Diameter Reflector.....inches	8	10
Shipping Weight.....pounds	4¾	6½

*Medium base lamp.

Prices do not include lamps.

Benjamin Service-Lites

A handy, telescoping and portable work light that can be easily moved from place to place and quickly adjusted to any desired height from 9 to 72 inches above the floor. At any point in this adjustment, the reflector can be tilted up or down through a wide angle to direct the light where it is needed.

The lower section of the telescoping shaft is iron pipe, upper section steel tubing. Ornament, cord hook, shafts and clamps are electro-plated.

Cast iron base with 18-inch diameter, and four ½-inch diameter holes equally spaced in rim for screws or casters. Galvanized; finished red.

Fixtures are wired with 25 feet of rubber covered service cable. Two-wire cables have soft rubber plug; three-wire cables, less plug, have wires skinned and tinned.

Interiors sealed against dust and moisture by heat-resisting cover glasses and gaskets. Wire guard, welded to the cover band, protects glass. Guard and band heavily tinned. Clear cover glass in 75-100 watts; stippled in 150-200 watts.

Porcelain enameled reflector, white inside and green outside. Symmetrical shape gives wide, even light.

Aluminum reflector has efficient, polished reflecting surface. Beam spread, 25° minimum to 60° maximum.

Size Lamp Watts	2-Wire Cable		*3-Wire Cable		Diam. In.	Ship. Wt. Lb.
	No.	Each	No.	Each		
75-100	5785	\$16.00	5788	\$16.75	8½	30
150-200	5786	20.75	5789	21.50	10½	35

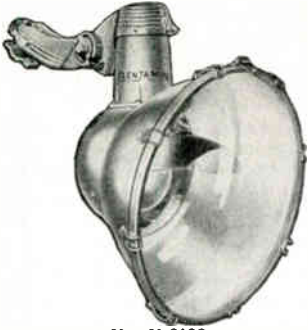
Aluminum Floodlights Complete with Stand
150-200 5787 \$20.75 10½ 34

*Listed by Underwriters' Laboratories.



No. 5787

Benjamin Alzo-Lite Long-Range Floodlights For 750-1500-Watt Lamps



No. N 6192

A narrow-beam, open-type unit primarily designed for football field floodlighting from behind the stands when located 55 to 150 feet back from the sideline.

Reflector has bi-focal, compound, three-element projector of Alzak aluminum. Section behind the lamp is polished, while section in front is etched. Outside is baked aluminum enamel over Alzak.

Etched Alzak aluminum deflector, positioned above and in front of lamp filament to direct a portion of the light downward.

Skeleton type receptacle, with mogul base.

Diameter, 18 1/4 inches; height, 23 3/8 inches; and width, 12 1/2 inches.

Cross arm units supplied with a 26-inch length of No. 14 two-conductor AFS rubber covered cable; slip-fitter units have two 31-inch lengths of No. 14 solid AF wire.

Fittings, not aluminum are electro-plated.

With Cross Arm Brackets

Fits 4 1/4-inch standard arms and all flat surfaces.

Description	Less Glass Cover			With Glass Cover		
	No.	Each	Wt., Lb.	No.	Each	Wt., Lb.
Less Deflector	N5996	\$32.00	18	N6196	\$47.00	30
With Deflector	N5991	34.00	18 1/2	N6191	49.00	30 1/2

With Cross Arm Brackets and Pipe Clamps

Pipe clamp fits around 1 to 2-inch iron pipe.

Less Deflector	N5997	\$33.00	18 3/4	N6197	\$48.00	30 3/4
With Deflector	N5992	35.00	19 1/4	N6192	50.00	31 1/4

With Slip-Fitter Brackets

Fits on 1 1/2-Inch Iron Pipe

Less Deflector	N5998	\$34.00	18 1/2	N6198	\$49.00	30 1/2
With Deflector	N5993	36.00	19	N6193	51.00	31

Fits on 2-Inch Iron Pipe

Less Deflector	N5998A	\$34.00	19	N6198A	\$49.00	31
With Deflector	N5993A	36.00	19 1/2	N6193A	51.00	31 1/2

With Saflox Lowering Attachment

Fits on 1 1/2-Inch Iron Pipe

Less Deflector	25998	\$47.00	70	26198	\$58.00	65
With Deflector	25993	49.00	71	26193	60.00	66

Fits on 2-Inch Iron Pipe

Less Deflector	25998A	\$47.00	70	26198A	\$58.00	65
With Deflector	25993A	49.00	71	26193A	60.00	66

Floodlights can be supplied with shoulder for 750 and 1000-watt, medium Bi-post, hard-glass lamps. To order, prefix number with BP and add \$2.00 list (with Saflox, add \$2.50).

Benjamin Floodlighting Projectors



Model RD14

Meets major requirements of modern floodlighting practice. Weatherproof projector; one-piece all aluminum housing; heat resisting cover glass.

May be rotated and turned on supporting staff. Reflecting surface is silvered glass protected by a coating of copper. Supplied with horizontal and vertical stops.

Special color plates, visors, and lower rings are available at an advance in price.

Model RD11

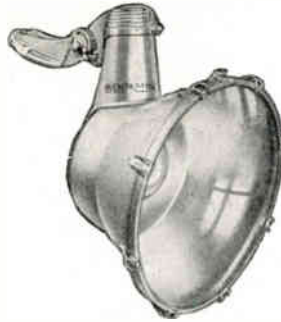
11-Inch Diameter Reflector for 200-Watt General Service Lamps, and 250-Watt Floodlighting Lamps

Shipping weight, 21 pounds.

No. 5825, Plain Glass Cover	each \$38.00
No. 5826, Stippled Glass Cover	each 38.00
No. 5827, Ribbed Glass Cover	each 38.00

Benjamin Alzo-Lite Medium-Spread Floodlights

For 750-1500-Watt Lamps



No. N 6146

A medium-spread reflector approximating a 90° beam designed for floodlighting baseball, softball, and football fields, etc.

Reflector has bi-focal, compound, three-element projector of etched Alzak aluminum. Exterior is baked enamel over Alzak.

Waterproof cover hinged to top of reflector and attached by spring clamps around the rim. Disc is clear, heat-resisting glass, specially gasketed and cemented and secured in cover frame by an internal expanding band.

Skeleton type receptacle, with mogul screw base.

Separable hood construction makes possible removal of reflector for cleaning or easier installation. Neck has watertight joint at reflector with concealed attaching screws.

Diameter, 18 1/4 inches; height, 23 3/2 inches; width, 12 1/2 inches.

Cross arm bracket units supplied with 26-inch length of No. 14 two-conductor AFS rubber covered cable; slip-fitter units have two 31-inch lengths of No. 14 solid AF single conductor wire.

Fittings, not aluminum are electro-plated.

With Cross Arm Brackets

Fits 4 1/4-inch cross arms and all flat surfaces.

No.	Less Glass Cover		Wt., Lb.	No.	With Glass Cover	
	Each	Wt., Lb.			Each	Wt., Lb.
N6156	\$25.00	18 1/2	N6146	\$40.00	30 1/2	

With Cross Arm Brackets and Pipe Clamps

Fits around 1 to 2-inch iron pipe.

N6157	\$26.00	19 1/4	N6147	\$41.00	31 1/4
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With Slip-Fitter Brackets

Fits on 1 1/2-Inch Iron Pipe

N6158	\$27.00	19	N6148	\$42.00	31
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Fits on 2-Inch Iron Pipe

N6158A	\$27.00	19 1/2	N6148A	\$42.00	31 1/2
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With Saflox Lowering Attachment

Fits on 1 1/2-Inch Iron Pipe

26158	\$40.00	72	26148	\$51.00	65
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Fits on 2-Inch Iron Pipe

26158A	\$40.00	72	26148A	\$51.00	65
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For Bi-Post Lamps

Floodlights can be supplied with holders for 750 and 1000-watt, medium Bi-post, hard-glass lamps. To order, prefix number with BP and add \$2.00 list (with Saflox, add \$2.50).

Model RD14

1 1/4-Inch Diameter Universal Service Reflector That Can Be Used with Either 500-Watt Floodlighting Lamps or 300-500-Watt General Service Lamps

Shipping weight, 38 pounds.

No. 5850, Plain Glass Cover	each \$60.00
No. 5851, Stippled Glass Cover	each 60.00
No. 5852, Ribbed Glass Cover	each 60.00

Model RD18

18-Inch Diameter Universal Service Reflector That Can Be Used with Either 1000-Watt Floodlighting Lamps or 750 or 1000-Watt General Service Lamps

Shipping weight, 60 pounds.

No. 5875, Plain Glass Cover	each \$85.00
No. 5876, Stippled Glass Cover	each 85.00
No. 5877, Ribbed Glass Cover	each 85.00

Model RD20

20-Inch Diameter Universal Service Reflector That Can Be Used with Either 1500-Watt Floodlighting Lamps or 1500-Watt General Service Lamps

Shipping weight, 80 pounds.

No. 5892, Plain Glass Cover	each \$140.00
No. 5893, Stippled Glass Cover	each 140.00
No. 5894, Ribbed Glass Cover	each 140.00

Benjamin Utility Floodlights

150-200 Watts



No. 6011

For general purpose and decorative floodlighting jobs.

The interior surface of the sheet aluminum housing forms a highly efficient reflector. Concentrating units have durable, highly polished Alzak aluminum reflecting surfaces while spread type units have reflecting surfaces of etched, aluminum oxide. Diameter, 10 1/8 inches. Beam focusing mechanism is controlled by a single thumb screw on the barrel of the housing.

Units can be tilted up or down or turned in a circle.

Reflecting surfaces are sealed against dust and moisture by the heat-resisting cover

glass which seats against an impregnated asbestos gasket, held in place by a removable aluminum channel band.

Three styles of mounting provided by the two types of brackets. Pedestal base is cast iron and includes a removable steel spike for turf mounting. Also has slotted screw holes for surface attachment. Pipe bracket is cast iron, tapped 1/2 inch, with a weatherproof wire entrance bushing in the removable wiring plate.

Pedestal base and spike has a 4-foot rubber covered cord and plug cap; pipe bracket types have 20 1/2-inch pigtail for lead-in to bracket.

With Concentrating Type Polished Alzak Aluminum Reflectors

Style Bracket	Plain Clear Cover		Stippled Clear Cover		Shipping Weight Pounds
	No.	Each	No.	Each	
Base and Spike...	*6007	\$14.50	6011	\$14.50	9 1/2
Pipe Bracket....	*6014	14.50	6016	14.50	9

With Spread Type Etched Aluminum Oxide Reflectors

Base and Spike...	6010	\$10.50	6012	\$10.50	10
Pipe Bracket....	6015	10.50	6017	10.50	9 1/2

Covers and Receptacles

No. 6090 Plain Clear Cover.....	each	\$3.50
No. 5802-CL Stippled Clear Cover.....	each	3.50
No. 6092 Ribbed Clear Cover.....	each	3.50
No. 1462 Receptacle Only.....	each	.30

*Due to striae caused by filament images in all polished reflectors, these plain cover glass units are not recommended.

†Available with an etched Alzak finish, at a \$2.00 advance in price. To order, suffix number with AL.

RIBBED COVERS, available for all units at regular prices. To order, prefix number of plain cover unit with R.

WITHOUT COVER, available at a \$4.00 reduction in price of complete unit. To order use the following numbers: for concentrating units, with base and spike, No. 6005—with pipe bracket, No. 6018; for spread units, with base and spike, No. 6006—with pipe bracket, No. 6020.

Beam Lumens and Range of Beam Spreads

The lumen figures below are based on the use of general service lamps with clear bulbs. With lamps having inside frosted bulbs, beam spreads in all cases will be increased considerably.

150-Watt, 2610-Lumen General Service Lamps

Type of Cover	Concentrating Polished Reflectors				Spread Etched Reflectors			
	MINIMUM SPREAD		MAXIMUM SPREAD		MINIMUM SPREAD		MAXIMUM SPREAD	
	Beam	Lumens	Beam	Lumens	Beam	Lumens	Beam	Lumen
Plain....	48°	994	112°	1654	84°	1414	102°	1535
Stippled..	52°x74°	11330	56°x76°	11359	78°	1420	100°	1654
Ribbed..	52°x74°	11330	56°x76°	11359	78°	1420	100°	1654

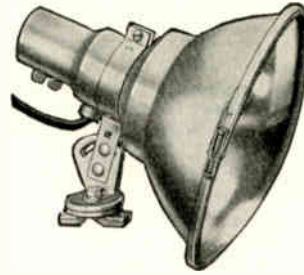
200-Watt, 3640-Lumen General Service Lamps

Plain....	48°	1385	112°	2309	84°	1971	102°	2140
Stippled..	52°x74°	11855	56°x76°	11895	78°	1981	100°	2308
Ribbed..	52°x74°	11855	56°x76°	11895	78°	1981	100°	2308

‡Approximate lumens.

Benjamin Utility Floodlights

300-500 Watts



No. S6023B

Weatherproof, durable, attractive appearing units of high lighting efficiency.

The interior of the sheet aluminum housing forms a highly efficient reflector. Concentrating type reflectors have highly polished Alzak aluminum reflecting surfaces while spread type reflectors have reflecting surfaces of etched Alzak aluminum. Diameter, 14 1/8 inches.

Projectors are of durable, weatherproof and dust-tight construction. Housings are of sheet aluminum, with both exterior and reflecting surfaces of durable Alzak aluminum. Wire entrance into the housing is weatherproof. Glass cover held in place by an aluminum channel band.

Colored lighting effects are obtainable through the use of glass color plates. These plates do not supplant the standard cover glass as they are set behind the regular cover.

Floodlights are wired and include 3-foot leads of No. 14 AFS rubber sheathed portable cord with tinned ends. Skeleton type receptacle, with mogul screw base.

Type B swivel and stand, is for attachment to any flat surface. Type D pipe clamp, attaches to 1 to 2-inch size iron pipe or 1 1/4 to 2 1/8-inch tubing. Type E wall bracket is for wall attachment. Type H slip fitter is for mounting over the end of a 1 1/2-inch iron pipe. Type K pipe bracket is to thread units to 1/2-inch pipe standards, but can be furnished to fit 3/4-inch standards, when specified. Type M cross arm is for attachment to standard 1/4-inch cross arms.

With Concentrating Type Polished Alzak Aluminum Reflectors

*With Plain Glass Cover	Type B, Swivel and Stand		Shipping Weight Pounds	
	No.	Each		
P6023B	\$31.00	S6023B \$31.00	R6023B \$31.00	16
P6023D	\$31.00	Type D, Pipe Clamp S6023D \$31.00	R6023D \$31.00	17
P6023E	\$32.00	Type E, Wall Bracket S6023E \$32.00	R6023E \$32.00	20
P6023H	\$32.00	Type H, 1 1/2-Inch Slip Fitter S6023H \$32.00	R6023H \$32.00	18 1/2
P6023K	\$32.00	Type K, 1/2-Inch Pipe Bracket S6023K \$32.00	R6023K \$32.00	18
P6023M	\$30.00	Type M, Cross Arm S6023M \$30.00	R6023M \$30.00	15 1/2

With Spread Type Etched Alzak Aluminum Reflectors

Type B, Swivel and Stand	Type B, Swivel and Stand		Shipping Weight Pounds	
	No.	Each		
P6022B	\$26.00	S6022B \$26.00	R6022B \$26.00	16
P6022D	\$26.00	Type D, Pipe Clamp S6022D \$26.00	R6022D \$26.00	17
P6022E	\$27.00	Type E, Wall Bracket S6022E \$27.00	R6022E \$27.00	20
P6022H	\$27.00	Type H, 1 1/2-Inch Slip Fitter S6022H \$27.00	R6022H \$27.00	18 1/2
P6022K	\$27.00	Type K, 1/2-Inch Pipe Bracket S6022K \$27.00	R6022K \$27.00	18
P6022M	\$25.00	Type M, Cross Arm S6022M \$25.00	R6022M \$25.00	15 1/2

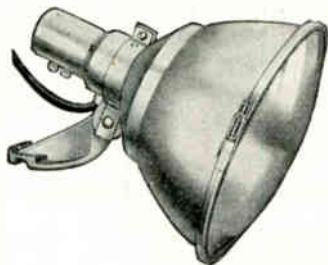
Parts

No. 6055 Red Glass Color Plate.....	each	\$9.00
No. 6056 Green Glass Color Plate.....	each	9.00
No. 6057 Amber Glass Color Plate.....	each	9.00
No. 6058 Blue Glass Color Plate.....	each	9.00
No. 6080 Visor.....	each	4.00
No. 6093 Plain Glass Cover.....	each	6.00
No. 6094 Stippled Glass Cover.....	each	6.00
No. 6095 Ribbed Glass Cover.....	each	6.00
No. 2780 Mogul Receptacle.....	each	1.05

*Due to striae caused by filament images in polished reflectors, these units are not recommended.

WITHOUT COVER, available at a \$6.00 reduction in price of complete unit. For units without cover, use No. 6025 to indicate the concentrating type and No. 6024, the spread type unit. This number is to be suffixed in each instance with one of the six letters used above to indicate the bracket style desired.

Benjamin Utility Floodlights 750-1000 Watts



No. P6032M

Weatherproof, durable, attractive appearing units of high lighting efficiency.

The interior of the sheet aluminum housing forms a highly efficient reflector. Concentrating type reflectors have highly polished Alzak aluminum reflecting surfaces while spread type reflectors have reflecting surfaces of etched Alzak aluminum. Diameter, 16 1/2 inches.

Projectors are of durable, weatherproof and dust-tight construction. Housings are of sheet aluminum, with both exterior and reflecting surfaces of durable Alzak aluminum. Wire entrance into the housing is weatherproof. Glass cover held in place by an aluminum channel band.

Colored lighting effects are obtainable through the use of glass color plates. These plates do not supplant the standard cover glass as they are set behind the regular cover.

Floodlights are wired and include 3-foot leads of No. 14 AFS rubber sheathed portable cord with tinned ends. Skeleton type receptacle, with mogul screw base.

Type B swivel and stand, is for attachment to any flat surface. Type D pipe clamp, attaches to 1 to 2-inch size iron pipe or 1 1/4 to 2 1/4-inch tubing. Type E wall bracket is for wall attachment. Type H slip fitter is for mounting over the end of a 1 1/2-inch iron pipe. Type K pipe bracket is to thread units to 1/2-inch pipe standards, but can be furnished to fit 3/4-inch standards, when specified. Type M cross arm is for attachment to standard 4 1/4-inch cross arms.

With Concentrating Type Polished Alzak Aluminum Reflectors

*With Plain Glass Cover		Type B, Swivel and Stand With Stippled Glass Cover		With Ribbed Glass Cover		Shipping Weight Pounds
No.	Each	No.	Each	No.	Each	
P6033B	\$40.00	S6033B	\$40.00	R6033B	\$40.00	20
Type D, Pipe Clamp						
P6033D	\$40.00	S6033D	\$40.00	R6033D	\$40.00	22
Type E, Wall Bracket						
P6033E	\$41.00	S6033E	\$41.00	R6033E	\$41.00	23
Type H, 1 1/2-Inch Slip Fitter						
P6033H	\$41.00	S6033H	\$41.00	R6033H	\$41.00	22
Type K, 1/2-Inch Pipe Bracket						
P6033K	\$41.00	S6033K	\$41.00	R6033K	\$41.00	21
Type M, Cross Arm						
P6033M	\$39.00	S6033M	\$39.00	R6033M	\$39.00	19

With Spread Type Etched Alzak Aluminum Reflectors

Type B, Swivel and Stand		Type D, Pipe Clamp		Type E, Wall Bracket		Type H, 1 1/2-Inch Slip Fitter		Type K, 1/2-Inch Pipe Bracket		Type M, Cross Arm	
P6032B	\$34.00	S6032B	\$34.00	R6032B	\$34.00	20					
P6032D	\$34.00	S6032D	\$34.00	R6032D	\$34.00	22					
P6032E	\$35.00	S6032E	\$35.00	R6032E	\$35.00	23					
P6032H	\$35.00	S6032H	\$35.00	R6032H	\$35.00	22					
P6032K	\$35.00	S6032K	\$35.00	R6032K	\$35.00	21					
P6032M	\$33.00	S6032M	\$33.00	R6032M	\$33.00	19					

Parts

No. 6060	Red Glass Color Plate	each	\$13.00
No. 6061	Green Glass Color Plate	each	13.00
No. 6062	Amber Glass Color Plate	each	13.00
No. 6063	Blue Glass Color Plate	each	13.00
No. 6081	Visor	each	4.00
No. 5856	Plain Glass Cover	each	8.50
No. 5857	Stippled Glass Cover	each	8.50
No. 5858	Ribbed Glass Cover	each	8.50
No. 2780	Mogul Receptacle	each	1.05

*Due to striae caused by filament images in polished reflectors, these units are not recommended.

WITHOUT COVER, available at a \$11 reduction in price of complete unit. For units without cover, use No. 6035 to indicate the concentrating type and No. 6034, the spread type unit. This number is to be suffixed in each instance with one of the six letters used above to indicate the bracket style desired.

Noma Christmas Light Outfits

Each set has 120-volt, multiple Mazda lamps which burn independently. Equipped with add-on connectors for attaching additional sets. All sets furnished with washers to keep lamps tight in sockets except No. 3003 which is a single moulded unit of rubber.



No. 3010 7-Light Indoor Outfits

Berry beads hold lamps upright.

No. C-7 1/2, candleabra base lamps.

Overall length, 13 feet.

Standard package, 50; weight, 38 pounds.

No. 3010. ea. \$1.20

No. 3415 15-Light Straight-Line Indoor or Outdoor Outfits



Berry beads hold lamps upright.

No. C-7 1/2 candleabra base lamps.

Overall length, 24 feet.

Standard package, 25; weight, 36 pounds.

No. 3415. ea. \$2.60

No. 3005 7-Light Multiple Straight-Line Outdoor and Indoor Red-Cap Outfits Weatherproof



Equipped with inside coated, intermediate base, No. C-9 1/2 lamps.

Overall length, 13 1/2 feet.

Standard package, 25; weight, 30 pounds.

No. 3005 each \$1.65

No. 3003 7-Light All Rubber Weatherproof Outdoor Outfits



Edge of socket grips lamp firmly sealing out moisture. Snap-on device in base of socket makes it easy to fasten lamps to branch of tree.

No. C-9 1/2, intermediate base lamps.

Overall length, 13 1/2 feet.

Standard package, 25; weight, 32 pounds.

No. 3003 each \$2.00

Eveready Industrial Flashlights



An industrial automatic spotlight. Prefocused lamp. Die cast reflector.

Semi-hard rubber case, reinforced internally with brass parts.

Lamp shock absorber. Heavy duty hand replaceable switch. Ring hanger.

No.....	1251	1351
Without Batteries..... each	\$1.95	2.35
Size.....inches	6 $\frac{7}{8}$ x1 $\frac{11}{16}$	9 $\frac{1}{4}$ x1 $\frac{11}{16}$
Mazda Lamp No.....	1414	1415
Flashlight Battery No.....	2-950	3-950

Eveready Automatic Spotlights



Has a die-cast switch which is designed for easy operation and ruggedly constructed for long life; has 3 positive positions, locked-

off, flash, and steady light. Each position is indicated by a distinct click and at the off position the word locked shows clearly.

Prefocused lamp; octagonal lens ring; ring hanger; lamp shock absorber. Spotlight is all chromium-plated; seamless brass tube; luminous dotted black band.

Packed 1 in a package.

No.....	8251	8351
Without Batteries..... each	\$1.15	\$1.35
Size.....inches	6 $\frac{7}{8}$ x 1 $\frac{1}{2}$	9 $\frac{1}{4}$ x1 $\frac{1}{2}$
Mazda Lamp No.....	1404	1405
Flashlight Batteries.....	2 No. 950	3 No. 950

No. 2250 Eveready Flashlights



A two cell floodlight. Seamless brass tube, chromium plated with rolled on black decoration. Bull's eye lens.

Matte finish reflector. Uses two No. 950 batteries and No. 14 Mazda lamp.

Packed 6 in an attractive display carton.

Each, Less Batteries..... \$.75

No. 2251 Eveready Automatic Spotlights



Has streamlined switch, seamless brass tube, wear resistant rolled black finish, attractive chromium decoration.

Complete with 2 No. 950 Eveready Dated Batteries, No. 1404 Mazda lamp.

Size, 6 $\frac{7}{8}$ x1 $\frac{1}{2}$ inches.

No. 2251, Less Batteries.....each \$.80

No. 2671 Eveready Flashlights

400-Foot Range



A 2-cell focusing flashlight, equipped with octagonal lens ring, lens retaining ring, safety-lock switch and ring

hanger. Finish, black and chromium. Size, 7x1 $\frac{1}{2}$ in. Use two No. 950 unit cells; lamp No. 1161. Unit package, 1.

No. 2671, Without Batteries.....each \$.78

No. 9250 Eveready Flashlights



A two-cell type flashlight with bull's eye lens, matte finish reflector and copper lock switch.

Used with two No. 950 batteries and No. 1161 Mazda lamp. Polished and lacquered copper fittings, lithographed finish tube. Packed 6 in a box.

No. 9250, without Batteries..... each \$.55

Eveready Safety Automatic Flashlights



No. 1259

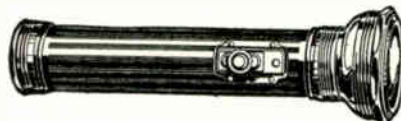
Approved by Bureau of Mines and Underwriters Laboratories for use in explosive gaseous atmospheres. When bulb breaks electrical circuit opens automatically.

Prefocused lamp. Die cast reflector. Semi-hard rubber case reinforced internally with brass parts.

Lamp shock absorber. Heavy duty hand replaceable switch. Ring hanger.

No.....	1259	1359
Each, Less Batteries.....	\$3.05	3.70
Mazda Lamp No.....	PR-6	PR-7
Flashlight Battery No.....	2-950	3-950

No. 2619 Eveready Miners' Flashlights



Seamless brass tube. Durable black baked finish. Chromium fittings. Ring hanger. Bulls-eye lens.

Size 9 $\frac{1}{8}$ x1 $\frac{1}{2}$ inches.

Uses 3 No. 950 Eveready Batteries and No. 1162 Eveready Mazda Lamp.

Unit package, 1.

No. 2619, without Batteries.....each \$1.19

No. 2633 Eveready Non-Focusing Flashlights



A 3-cell non-focusing floodlight.

Has seamless brass tube, all chromium plated. With luminous-dotted black band, ring hanger, octagonal lens ring, and bulls-eye lens.

Size, 9 $\frac{1}{2}$ x1 $\frac{1}{2}$ inches.

Uses three No. 950 Eveready batteries. Uses No. 1127 Eveready Mazda lamp.

Unit package, 1.

No. 2633, without Batteries..... each \$1.20

No. 8257 Official Boy Scout Flashlights



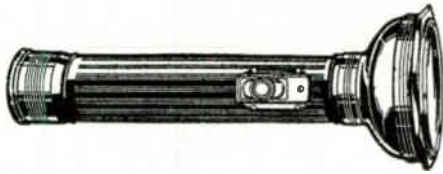
A two cell automatic spotlight. Prefocused lamp. Die cast reflector. Seamless brass tube and die cast head

with durable baked khaki finish. Chromium fittings. Belt clip. Ring hanger. Uses two No. 950 batteries and No. PR-2 Mazda lamp. Packed 6 in an attractive display carton.

Each, Less Batteries..... \$1.15

No. 2642 Eveready Focusing Flashlights

800-Foot Range

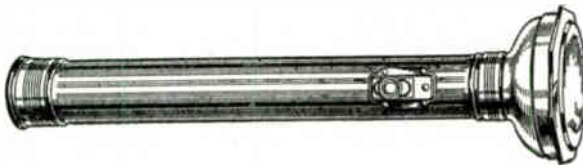


A 3-cell flashlight equipped with focusing device and parabolic silvered reflector, non-rolling lens ring. Black metal case with chromium fittings. Size, 9½x1½ inches. Use unit cell No. 950. Use lamp No. 1162. Unit package, 1.

No. 2642, without Batteries.....each \$1.65

No. 2645 Eveready Flashlights

5-Cell, Focusing



Used wherever exceptional power and range must be combined with portability. A few turns of end cap make light suitable for close up work, beam changing from a narrow penetrating shaft of light to a diffused and widespread ray. Has beveled plate-glass lens, octagonal non-rolling lens ring, safety-lock switch, black and chromium case and new ring hanger. Made in chromium finish only. Size 14½x1½ inches. Use 5 No. 950 unit cells; No. 1125 bulb.

No. 2645, without Batteries.....each \$2.25

No. 3258 Eveready Flexible Extension Flashlights

2-Cell



For engineers, mechanics, and others who require light in inaccessible places. Flexible section permits angular adjustment of light from protected lamp at end of extension.

Casing is of semi-hard rubber; with heavy duty hand replaceable switch and ring hanger. Lamp is protected against breakage.

Size, 19¾x1¼ inches. Extension, 13 inches.

Uses 2 No. 950 batteries; Mazda lamp No. 1161.

Packed 1 in a package.

No. 3258, without Batteries.....each \$3.40

No. 210 Eveready Penlights



Using the new bulls-eye lens lamp, the penlight throws a brilliant beam of concentrated light when the hood is in place. When the hood is removed, side rays give a broader distribution of illumination.

A sliding movement of the clip controls the electrical circuit providing on and off positions. It has been so designed that when inserted in a pocket in the on position, the clip is automatically slid back into off position.

Size, 5½x½ inches, finished in chromium. Uses 2 Eveready

No. 915 Batteries. Eveready Mazda Lamp No. 1152.

No. 210, without Batteries.....each \$.49

Eveready Headlight Lanterns



A focusing searchlight. Cord and headband concealed inside case.

Heavy gage steel battery case.

Combination black and chromium finish.

No. 3801

Packed 1 in a package.

No. 3801
Each, Less Batteries..... \$3.35
Size..... inches 6x5¼x1½
Mazda Lamp No..... 365
Flashlight Battery No..... 3-950

No. 3802

No. 3802
Each, Less Batteries..... 5.00
Size..... inches 6x7¼x1½
Mazda Lamp No..... 605
Flashlight Battery No..... 5-950

No. A1530 Delta Powerlite Lanterns



No. A1530 has a piercing, 800-foot beam, front; floodlight top. Two lights are under instant finger-tip control from same switch.

Operates on standard 6-volt lantern battery; 80 to 100 hours battery life.

Silver enameled body, bright trim. Hangs by bail; hooks over nail in wall. Bail reverses for floodlight down.

Packed individually in printed carton.

Weight each, 2½ pounds.

No. A1530, without Battery.....each \$3.35

Eveready Flashlight Batteries



No. 950

		Unit Cells		Size	Unit	Wt.
No.	Each	No. Cells	Description	In.	Pkg.	Lb.
915	\$.05	1	Penlight Cell	1½ ³² x ¾ ⁶⁴	12	½
935	.10	1	Baby Tubular	2 x 1¼ ⁶⁴	12	1¼
950	.10	1	Regular	2 ²⁷ / ₆₄ x1 ²¹ / ₆₄	48	10¾
Tubular						
705	.30	3	Regular	7 ¹³ / ₆₄ x1 ²¹ / ₆₄	12	7 ⁵ / ₈
790	.20	2	Regular	4 ¹³ / ₁₆ x1 ²¹ / ₆₄	12	5 ¹ / ₈

		Flat		Size, In.	Unit	Pkg.
No.	Each	No. Cells	Description			
702	\$.45	3	Shot Firer Type	2 ²¹ / ₆₄ x2 ⁷ / ₁₆ x ¾ ²⁷ / ₆₄		1
703	.30	3	Large Pocket Size	2 ¹³ / ₆₄ x2 ⁷ / ₁₆ x ¾ ²⁷ / ₆₄		1
704	.45	2	Shot Firer Type	4 ¹³ / ₆₄ x2 ⁵ / ₈ x1 ¹¹ / ₆₄		1
750	.15	2	Medium Vest Pocket	2 ⁵ / ₁₆ x1 ¹¹ / ₆₄ x1 ¹¹ / ₁₆		10
751	.30	3	Medium Vest Pocket	2 ⁵ / ₁₆ x2x1 ¹¹ / ₁₆		1

		Lantern		Size, In.	Unit	Pkg.
No.	Each	No. Cells	Description			
409	\$.50	4	Railroad Lantern	3 ²¹ / ₆₄ x2 ¹¹ / ₆₄ x2 ³³ / ₆₄		1
710	1.30	5	Cluster	2 ¹³ / ₆₄ x3 ¹¹ / ₆₄		1
734	1.00	3	Rectangular	3 ¹³ / ₆₄ x2 ¹³ / ₆₄ x1 ¹¹ / ₆₄		1

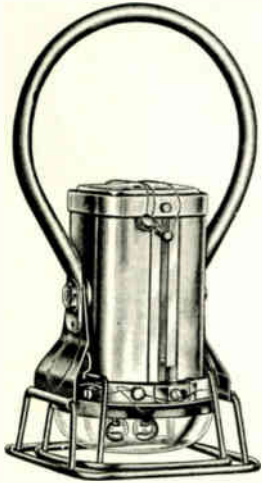
Eveready Mazda Flashlight Lamps

Eveready	CAT. No.		Each	Voltage	Bulb
	Eveready	Mazda			
No. 233	*1109	502	\$.10	5.0	G-4½
	1125	605	.10	6.0	G-4½
No. 13, 14	1152	222	.09	2.2	TL-3
	1161	14	.09	2.5	G-3½
No. 31	1162	13	.09	3.8	G-3½
	1163	31	.10	6.2	G-4½
No. 31	†1404	PR-2	.13	2.4	P-3½
	†1405	PR-3	.13	3.6	P-3½

*For use in trainmen's hand lantern.

†Single contact miniature flanged base.

No. 51W Justrite Electric Lanterns
All-Purpose Safety Type



Approved by the U.S. Bureau of Mines, Approval No. 1017, and by Underwriters' Laboratories, Inc. for Class 1, Group D locations.

For use in all places where fire risk is great, for gas filled areas and explosive atmospheres.

Lantern gives direct light to all sides through a range of about 200°, and at the same time a powerful forward beam. An emergency bulb can be immediately moved into the place and position of the burned-out bulb simply by throwing the switch.

Equipped with a globe of fire-polished glass or with globe of clear shatterproof Lucite.

Globe is sealed in place by means of wire seals. A burned out bulb can be instantly replaced without removing the globe or seals. The lighted bulb is always

in the center of the chrome plated reflector.

Movable guard base may be turned completely around lantern and allows the lantern to be set down with the light pointing in any direction desired. Large, tubular aluminum handle is also completely adjustable. Lantern can be slipped over arm with light pointing in any direction. Has kick-out bulb sockets that immediately break contact of bulb that becomes broken.

Uses two bulbs, Mazda Nos. 502 or 27 and one standard 6-volt lantern battery. Lantern width at handle, 6½ inches; height with handle and base extended, 11 inches.

Furnished with globe and seals but without bulbs and battery. Bulbs, as selected, extra.

Packed in individual shipping carton; weight, 2½ pounds. No. 51W.....each \$5.50

No. 43 Justrite Electric Lanterns
Railroad Type



Trainmen's lantern. For signalling on freight and passenger trains and in terminal yards for switching.

Twin-bulb principle allows batteries to be used for a longer time, because in addition to the direct rays from the bulb, the lantern throws a beam of light. Lighted bulb is always in the center of the reflector. From the side the light is directly visible through a range of 200°.

An emergency bulb can be immediately moved into the place and position of the burned-out bulb simply by throwing the switch.

Aluminum tubing handle can be turned completely around the lantern. It can be set to any position desired and locked in place by means of the thumb screw located on lantern side.

Can be equipped with white or red glass globe and can also be used with red bulb if a colored light is desired from one of the bulbs. Uses two bulbs, Mazda No. 502.

One standard 6-volt lantern battery is used. Made of steel, cadmium plated. Chromium plated brass reflector.

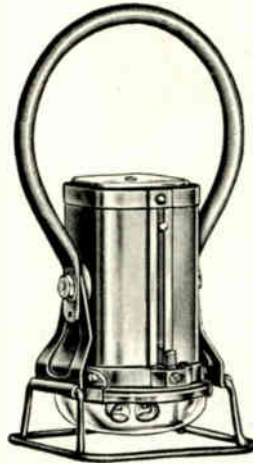
Lantern width at handle, 6½ inches; height with handle and base extended, 11 inches.

Furnished without bulbs and without battery.

Packed in individual shipping carton, weight, 2½ pounds. No. 43.....each \$3.95

No. 49W Justrite Electric Lanterns
Industrial and Marine Safety Type

Approved by Underwriters' Laboratories, Inc. Use in Class 1, Group D Location



For chemical plants, refineries, boats, docks, and marine warehouses.

Lantern gives a direct light through a range of about 200° with a powerful beam concentrated in the center. The lighted bulb is always in the center of the reflector. The emergency bulb is immediately moved into the position of the regular bulb by throwing the switch. Lantern has kick-out type bulb sockets that immediately break the contact to a bulb that becomes broken.

Handle and guard base are both completely adjustable and may be moved completely around the lantern body. Lantern can be carried over arm or set on ground with the light pointing in any direction desired.

Made of steel, cadmium plated. Chromium plated brass reflector. Handle is aluminum tubing.

Uses two bulbs, Mazda Nos. 502 or 27. One standard 6-volt lantern battery is used.

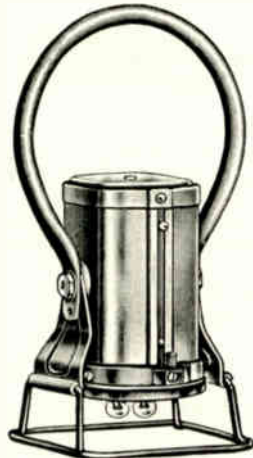
Lantern width at handle, 6½ inches; height with handle and base extended, 11 inches.

Furnished with a globe of clear white fire-polished glass, bulbs and battery extra.

Packed in individual shipping carton, weight, 2½ pounds.

No. 49W.....each \$4.90

Justrite Electric Lanterns
Industrial and Marine Type



For watchmen, truckers, railway car inspectors and for general use. May be used with or without globe.

Lantern has movable base and tubular aluminum handle that may be turned to any position around the lantern body. Lantern may be set on ground or carried over the arm with the light pointing in any direction desired.

An emergency bulb can be immediately moved into the place and position of the burned-out bulb simply by throwing the switch.

Handle is large enough to slip over the arm for carrying and readily accommodates heavy winter gloves.

Lantern has screw type bulb sockets that prevent bulbs jarring loose and permit focusing the forward beam.

May be equipped with a beam diffuser to spread the forward beam from the bulb over a wider area. Colored beam diffusers may be used to color the forward beam in order to provide a signal or warning light.

Uses two bulbs, Mazda Nos. 502 or 27. One standard 6-volt lantern battery is used.

Made of steel, cadmium plated. Chromium plated brass reflector.

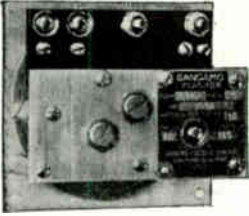
Lantern width at handle, 6½ inches; height with handle and base extended, 11 inches.

Furnished without bulbs and without battery.

Packed in individual shipping carton, weight, 2½ pounds.

No. 45, without Globe.....each \$4.00
No. 45W, with Globe.....each 4.55

Model 3 Sangamo Off and On and Alternate Flashers



No. 3-61A2

A sturdy flasher for average or small installations. Constructed with an adjustable speed motor, pivot type oilless bearings, and silver contacts.

Speed of flash, 15 to 30 per minute. Standard cams are set for 50-50 operation.

Size 5 $\frac{5}{8}$ x4 $\frac{3}{8}$ x2 $\frac{1}{4}$ inches.

For 50 or 60 cycles.

Underwriters' Laboratories E-10550.

No.	Without Cabinet Each	Number of Circuits	Circuit Timing	Wired Volts	Wattage per Circuit	Amperes per Circuit	Total Wattage
*3-6101	\$11.00	1	Off and On	115	1725	15	1725
*3-6102	13.25	2	Off and On	X115	1725	15	3450
3-6103	17.50	3	Off and On	115-230	1725	15	5175
3-6104	19.75	4	Off and On	115-230	1725	15	6900
*3-61A2	13.25	2	Alternate	X115	1725	15	3450
3-61A3	17.50	3	Alternate	115-230	1725	15	5175
3-61A4	19.75	4	Alternate	115-230	1725	15	6900

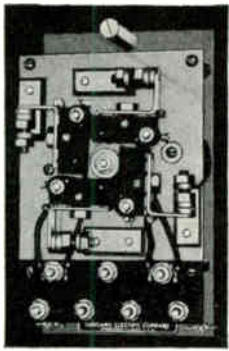
*These flashers can be furnished in slide cover type, weatherproof cabinets at \$3.25 each; or hinge type cabinets at \$1.50 each. All other flashers can be furnished in hinged type cabinets only at \$2.50 each.

Special Cams.....per contact, extra \$.50

Adjustable Cams.....per contact, extra 1.25

Replacement Contacts (Specify Front or Rear).per pair 1.00

Model 2 Sangamo High Speed Border Chaser Flashers



No. 2-6144

A heavy duty flasher for large installations, or extra long life on smaller ones. Constructed with an adjustable speed motor; permanently lubricated ball bearings; and large, pure silver contacts.

Speed adjustment, 150 to 250 flashes per minute.

Flasher size, 4 circuits, 4 $\frac{1}{4}$ x7 $\frac{1}{2}$ x4 $\frac{1}{2}$ inches.

Cabinet size, 6x9 $\frac{1}{2}$ x5 inches.

For 50 or 60 cycles.

Underwriters' Laboratories E-10550.

No.	Without Cabinet Each	Number of Circuits	Circuit Timing	Wired Volts	Wattage per Circuit	Amperes per Circuit	Total Wattage
*2-6133	\$29.00	3	1-3	115-230	2875	25	8625
2-6136	57.00	6	1-3	115-230	2875	25	17250
*2-6144	30.00	4	1-4	115-230	2875	25	11500
2-6148	58.00	8	1-4	115-230	2875	25	23000
2-6166	40.00	6	1-6	115-230	2875	25	17250

*These flashers can be furnished in slide cover type, weatherproof cabinets at \$4.50 each; or hinge type cabinets at \$3.25 each. All other flashers can be furnished in hinge type cabinets only at \$3.25 each.

Replacement Contacts (Specify Front or Rear).....per pair \$1.00

Model 5 Sangamo High Voltage Neon Flashers

A reliable flasher for operation on the high voltage side of a neon transformer, based on the distributor principle used in automobile ignition. Constructed with an adjustable speed motor, pivot type oilless bearings, and porcelain insulation on high voltage circuits. For 50 or 60 cycles.

Underwriters' Laboratories E-10550.

Shipping weight, 6 pounds.

No.	Each	Size Inches	Number of Circuits	Rate of Flash
5-61N2	\$13.50	5 x4 $\frac{1}{2}$ x6	2	15 to 300
5-61N3	14.00	5 x4 $\frac{1}{2}$ x6	3	15 to 300
5-61N4	14.50	5 x4 $\frac{1}{2}$ x6	4	15 to 300
5-61N6	16.00	5 x4 $\frac{1}{2}$ x6	6	15 to 300
5-61N8	19.00	5 $\frac{1}{2}$ x5 x6	8	15 to 300
5-61R2	15.50	6 $\frac{1}{4}$ x5 x6	2	1 $\frac{1}{2}$ to 30
5-61R3	16.00	6 $\frac{1}{4}$ x5 x6	3	1 $\frac{1}{2}$ to 30
5-61R4	16.50	6 $\frac{1}{4}$ x5 x6	4	1 $\frac{1}{2}$ to 30
5-61R6	18.00	6 $\frac{1}{4}$ x5 x6	6	1 $\frac{1}{2}$ to 30
5-61R8	21.00	6 x6 x6	8	1 $\frac{1}{2}$ to 30

SIGN MANUFACTURERS'

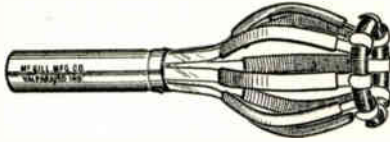
Supplies

Below are listed most of the supplies and equipment needed by sign manufacturers. Those starred are cataloged in this book (see index). Full information and prices on any other items (as well as those cataloged) are available from your nearby Graybar office and warehouse.

- *BOLTS, Expansion
- *BUSHINGS, Porcelain and Glass
- *CABLE, Neon—All Types
- CABLE, Supports
- CLIPS, Fahstock
- *CONDUIT, Iron
- *CONNECTORS, Wedge-On
- *CORD SETS
- *CORDS, Extension
- *CUTOUPS
- *DRILLS, Electric
- ELECTRODES
- *FLASHERS
- *FUSES
- GASES, Rare
- GREASE, Stop Cock
- *HAMMERS, Electric
- HARDWARE, Sign Hanging
- HOUSINGS, Porcelain and Glass
- *INSULATING MATERIALS
- *INSULATORS—See Bushings
- *IRONS, Soldering
- *LAMPS, Flood
- *LAMPS, Neon Glow
- MERCURY
- *MICA SHEETS
- *MOTORS AND CONTROLS
- PAINT, Block Out
- PAPER, Asbestos
- POLES, Metal Support
- *REFLECTORS, Porcelain
- *SCREWS, Expansion
- *SOCKETS, Porcelain
- *SOLDER, Bar, Wire and Flux
- STOP COCKS, Glass
- *STRAND—All Types
- SUPPORTS, Tubes
- *SWITCHES, Time
- *TAPE, Friction and Rubber
- *TOOLS—All Types
- *TORCHES, Blow
- *TRANSFORMERS—All Types
- *TRANSFORMERS, Bombarding
- *TRANSFORMERS, Voltage Regulating
- TUBE, Supports
- TUBING, Glass
- *WIRE, Rubber Covered—All Types

*LISTED IN THIS CATALOG, SEE INDEX

McGill Adaptable Lamp Changers

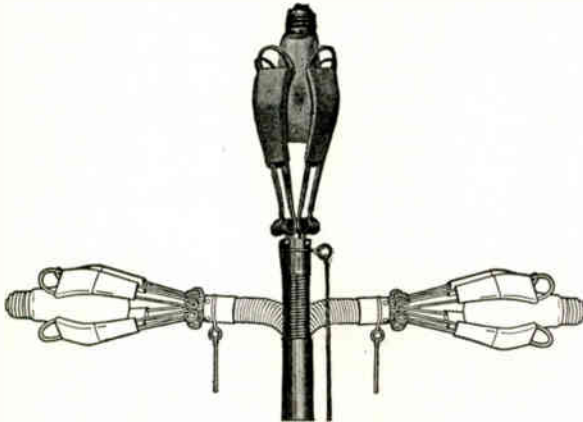


Coil spring grips lamp firmly and makes it easy to remove. The lamp changer with plain fingers and without coil spring is recommended when used with poles longer than 10 feet.

Poles longer than 30 feet are not recommended.

No.	Plain Fingers, Angle Adjustment		Coil Spring, Angle Adjustment		Coil Spring, No Angle Adjustment	
	150	151	150C	151C	152C	153C
Each.....	\$6.50	6.50	6.50	6.50	7.00	7.50
Lamp. watts	15-60	100-200	15-60	100-200	300-500	750-1500
Poles, 5½-Foot Sections, Aluminum or Steel.....	each \$4.50					

Matthews Holdfast Lamp Changers



Removes and replaces lamps in high places, such as ceilings, side walls, electric signs, etc. Like a human hand on the end of a curtain or any ¾-inch wooden pole. Saves time and prevents ladder accidents.

To remove or replace lamps from side walls or at an angle, pull cord attached to the swivelled ring, this bends the wristlike coil spring so that the changer will work just as well at a right angle to the rotating pole as in vertical position.

Shipping weight each, 1 pound.

No. 2
For 50-Watt Rough Service, 15 to 100-Watt Mazda, and Other Lamps up to 3 Inches in Diameter
No. 2..... each \$5.00

No. 3
For 60 to 500-Watt Mazda Lamps and Other Large and Odd Shapes up to 5 Inches in Diameter
No. 3..... each \$5.50

Specially treated wood handles can be furnished in 6-foot sections at \$3.50 per section, including couplings.

McGill Protector O Lamp Guards

This guard gives full protection to lamp bulbs; the removable trap at bottom prevents pilfering. Yet the trap can be attached and removed quickly and easily for lamp replacement and cleaning—simply press inward on the guard rim where the trap hooks on it and snap the trap on or off.

Made of No. 14 steel wire, heavily tinned, and finished with plain steel screws for attaching to sockets. Made for 25 to 75-watt lamps and for brass and weatherproof sockets with bottom bead measuring from 1⅞ to 1¾ inches in extreme diameter.



No. 1429

No.	Per Dozen	Lamp Size Watts	Fits Socket	Weight Pounds per Dos.
1429	\$4.25	25-75	Brass	2½
1429-T with Trap	4.80	25-75	Brass	3
1432	4.25	25-75	W.P.	2½
1432-T with Trap	4.80	25-75	W.P.	3
2932 Trap Only	.72			½

McGill Loxon Locking Lamp Guards

Used in garages, factories, yards, shops, basements and closets to secure double protection against breakage and unauthorized removal. Made of steel wire, heavily tinned; available in sizes to fit all sockets and for regular and mill type lamps. Easily attached and locked with key. One key is included with each dozen guards.

Plain Guards



No. 1420



No. 1425



No. 1400

No.	Per Dozen	Lamp Size Watts	Fits Socket	Weight Pounds per Dos.
*1420	\$5.50	25-40	Brass	2¼
*1420 A	5.50	25-40	W.P.	2½
*1420-B	5.50	25-40	W.P.	3
1425	5.50	50-60	Brass	2½
†1426	5.75	60-100	Brass	2¾
1427-A	5.50	50-60	W.P.	2¾
1427-B	5.50	50-60	W.P.	3¼
†1428-A	5.75	60-100	W.P.	3
†1428-B	5.75	60-100	W.P.	3½
2443	7.00	100-150	Brass	4¼
2444	9.00	150-200	Brass	3
2446-A	9.00	150-200	W.P.	3
2446-B	9.00	150-200	W.P.	3½
2447	11.50	200 Old Style	Brass	5
2447-A	12.50	200 Old Style	W.P.	4½
2447-B	12.50	200 Old Style	W.P.	4¾

Reflector Guards

No.	Per Dozen	Lamp Size Watts	Fits Socket	Weight Pounds per Dos.
*1400	\$8.50	25-40	Brass	3½
*1401-A	8.50	25-40	W.P.	3½
*1401-B	8.50	25-40	W.P.	4
1443	8.50	50-60	Brass	4½
1444-A	8.50	50-60	W.P.	4½
1444-B	8.50	50-60	W.P.	5¼

*Also 50-watt rough service and 50-watt mill type lamps.

†Special reflectors for 60 and 100-watt socket guards at slight additional cost.

All numbers followed by "A" fit any W.P. Socket with bottom bead measuring 1⅞ to 1⅞ inches in extreme diameter.

All numbers followed by "B" fit any W. P. Socket with bottom bead measuring 1¾ inches in extreme diameter.

For W. P. Sockets or receptacles with bottom bead measuring 1½ inches in diameter, specify regular catalog number of guard desired followed by letter "N." Sockets not coming with the above dimensions can be fitted by sending a sample socket.

Aluminum sockets can be fitted by giving number and manufacturer's name.

McGill Gripon Non-Locking Lamp Guards

For regular and mill type lamps. Tinned steel wire with plain steel screws.

Plain Guards



No. 1600



No. 1610

No.	Per Dozen	Lamp Size Watts	Fits Socket	Wt. Lb. per Dos.
1600	\$4.25	50-60	Brass	2¾
†1601	4.50	60-100	Brass	2¾
1602-A	4.25	50-60	W.P.	2¾
1602-B	4.25	50-60	W.P.	3¼
†1603-A	5.00	60-100	W.P.	3
†1603-B	5.00	60-100	W.P.	3½
1605	7.50	100-200	Brass	3
1606-A	7.50	100-200	W.P.	3
1606-B	7.50	100-200	W.P.	3½
*1608	4.25	25-40	Brass	2¼
*1608-A	4.25	25-40	W.P.	2½
*1608-B	4.25	25-40	W.P.	3

Reflector Guards

No.	Per Dozen	Lamp Size Watts	Fits Socket	Wt. Lb. per Dos.
*1610	\$7.25	25-40	Brass	3½
*1611-A	7.25	25-40	W.P.	3½
*1611-B	7.25	25-40	W.P.	4
1620	7.25	50-60	Brass	4¼
1621-A	7.25	50-60	W.P.	4½
1621-B	7.25	50-60	W.P.	5¼

*Also 50-watt rough service and 50-watt mill type lamps. †Special reflectors for 60 and 100-watt socket guards at slight additional cost.

All numbers followed by "A" fit any W.P. Socket with bottom bead measuring 1⅞ to 1⅞ inches in extreme diameter.

All numbers followed by "B" fit any W.P. Socket with bottom bead measuring 1¾ inches in extreme diameter.

Hubbell Locking Type Lamp Guards



No. 5685



No. 5764

One No. D-4307 key is furnished with each carton of guards. Extra keys, \$5.50 per 100.

For Brass Shell Sockets

No.	Per 100	Size Lamp Watts	Carton	Std. Pkg.	Pkg. Wt. Lb.
5685	\$36.50	40-60	10	100	32
5635	55.50	100	10	100	48
5762	69.00	200	10	50	41

For Weatherproof Sockets

No.	Per 100	Size Lamp Watts	Carton	Std. Pkg.	Pkg. Wt. Lb.
5730	\$36.50	40-60	10	100	33
5731	55.50	100	10	100	48
5820	74.50	200	10	50	40

With Half Reflectors

No.	Per 100	Size Lamp Watts	Style Socket	Carton	Std. Pkg.	Pkg. Wt. Lb.
5764	\$61.50	60	Brass	10	100	40
5765	61.50	60	W.P.	10	100	43

For Bottom of Reflectors



No. 6655

Reflectors are not furnished with guards.

No. D-11606 extra long locking screws are furnished with guards to adapt them for over-size reflectors.

No.	Per 100	Size Reflector Inches	Carton	Std. Pkg.	Pkg. Wt. Lb.
6650	\$51.00	6 1/2	10	50	20
6652	57.50	8	10	50	26
6653	77.50	10	10	50	30
6655	98.00	12	10	50	40
*6657	119.00	14	1	20	18
*6659	156.00	16	1	20	24
*6660	158.00	18	1	20	26

*Packed in bulk.

Hubbell Non-Locking Type Lamp Guards



No. 5573



No. 5485



Nos. 5691 and 5693

For Brass Shell Sockets

No.	Per 100	Size Lamps Watts	Carton	Std. Pkg.	Pkg. Wt. Lb.
5573	\$35.00	60	10	100	35
5485	29.00	60	10	100	27
5691	22.50	60	10	100	25
5692	26.50	100	10	100	27

For Weatherproof Sockets

No.	Per 100	Size Lamps Watts	Carton	Std. Pkg.	Pkg. Wt. Lb.
5693	\$23.50	60	10	100	25
5694	26.50	100	10	100	27

Morse Eureka Closed End Lamp Guards

With Cushion Rings

For Brass or Weatherproof Sockets



Light				Heavy			
No.	Each	For Size Watts	B.&S. Gage Wire	No.	Each	For Size Watts	B.&S. Gage Wire
107	40-60	16	111	....	40-60	14
109	75-100	16	113	....	75-100	14

Morse Eureka Open End Lamp Guards

Non-Locking

For Brass Sockets



Light				Heavy			
No.	Each	For Size Watts	B.&S. Gage Wire	No.	Each	For Size Watts	B.&S. Gage Wire
1	40-60	12	3	....	40-60	10
2	75-100	12	4	....	75-100	10
For Weatherproof Sockets							
5	40-60	12	7	....	40-60	10
6	75-100	12	8	....	75-100	10

Morse Eureka Open End Lamp Guards

With Cushion Rings

For Brass Sockets



Light				Heavy			
No.	Each	For Size Watts	B.&S. Gage Wire	No.	Each	For Size Watts	B.&S. Gage Wire
161	40-60	12	163	....	40-60	10
162	75-100	12	164	....	75-100	10
For Weatherproof Sockets							
165	40-60	12	167	....	40-60	10
166	75-100	12	168	....	75-100	10

Morse Eureka Closed End Lamp Guards

Non-Locking

For Brass Sockets



Light				Heavy			
No.	Each	For Size Watts	B.&S. Gage Wire	No.	Each	For Size Watts	B.&S. Gage Wire
240	40-60	14	242	....	40-60	12
241	75-100	14	243	....	75-100	12
For Weatherproof Sockets							
244	40-60	14	246	....	40-60	12
245	75-100	14	247	....	75-100	12



For Brass Sockets

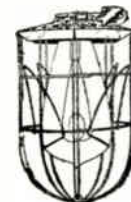
No.	Each	For Size Watts	B.&S. Gage Wire	No.	Each	For Size Watts	B.&S. Gage Wire
200	100	12	206	....	300	12
202	150	12	208	....	500	12
204	200	12	211	....	1000	12

When desired for use on waterproof sockets, add WP to above numbers.

Morse Eureka Closed End Lamp Guards

Metal Top—Locking

For Brass Sockets



No.	Each	For Size Watts	B.&S. Gage Wire	No.	Each	For Size Watts	B.&S. Gage Wire
350	60	12	356	....	300	12
353	100	12	357	....	500	11
354	200	12	359	....	1000	11

When desired for use on waterproof sockets, add WP to above numbers.

Morse Eureka Tubular Lamp Guards

For use over T-8 and T-10 bulbs.

Open End

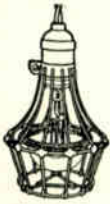
No.	Each	Description	B.&S. Gage Wire
99	For Brass Sockets.....	12
99WP	For Weatherproof Sockets.....	12

Closed End

No. 99	100	For Brass Sockets.....	13	No. 100
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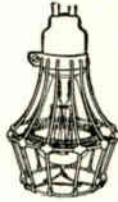


Matthews Holdfast Lamp Guards



For Brass Sockets

The rigid construction of these guards; the fact that they are permanently clamped to the socket; and the spiral spring cushion in the center make it a protection against breakage of incandescent lamps. The trap which is clamped across bottom opening prevents unauthorized removal of lamps. Guard is locked to socket by bending set screw.



For Weatherproof Sockets

The hot lamp cannot get closer than one inch to any inflammable material and the guard does not have to be removed from the socket to replace the lamp.

Approved by all insurance companies and underwriters. Guaranteed 10 years. Collars of guards for brass shell sockets are 1 1/4 inches, for weatherproof sockets, 1 1/2 inches.

For 50-Watt Rough Service, 25 and 40-Watt Mazda Lamps and Other Lamps Not Exceeding 4 1/4 In. in Length and 2 3/8 In. in Diameter

For Brass Shell Sockets			For Weatherproof Sockets		
Cat. No.	Size Wire B. W. G.	Per 100	Cat. No.	Size Wire B. W. G.	Per 100
MT14B	14	\$40.00	MT14WP	14	\$40.00

For 50, 60 and 75-Watt Mazda Lamps and Other Lamps Not Exceeding 5 5/16 In. in Length and 2 3/4 In. in Diameter

114B	14	\$38.00	114WP	14	\$38.00
112B	12	47.00	112WP	12	47.00

For 100-Watt Rough Service and 150-Watt Mazda Lamps and Other Lamps Not Exceeding 6 5/16 In. in Length and 3 1/4 In. in Diameter

514B	14	\$50.00	514WP	14	\$50.00
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For 200-Watt Type C Pear Shape Mazda Lamps and Other Lamps Not Exceeding 8 1/8 In. in Length and 3 3/4 In. in Diameter

714B	14	\$172.00	714WP	14	\$172.00
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McGill Crescent Wall Lamp Guards



No. 1438 No. 1439 No. 1440 No. 1581

These wall lamp guards protect against theft and breakage in public buildings, gymnasiums, schools, theatres, hallways, etc. Made of first quality steel wire; keyhole slots in base rings permit easy installation or removal from ordinary light outlets. Cannot be knocked off accidentally.

Boxes and sockets are not furnished with the guards.

Outlet Box Cover Guards

No.	Each	Size Outlet Box, Inches	Lamp Size Watts	Inside Diam. Inches	Depth Inches	Weight Pounds per Dos.
1436	\$1.00	3	60	2 13/16	5 3/4	6 1/2
1438	1.25	4	100	3 1/8	6 5/8	7 1/2

Wall-Ring Guards

1437	\$1.75	Wall Type	100	3 1/8	6 3/4	4 1/2
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Receptacle Guards

1439	\$1.25	3 or 4	100	3 1/8	5 5/8	8 1/2
*1439-B	1.25	3 or 4	100	3 1/8	5 5/8	9 1/4
1580	1.25	Condulet or Unilet	60	3 1/8	6 3/8	8

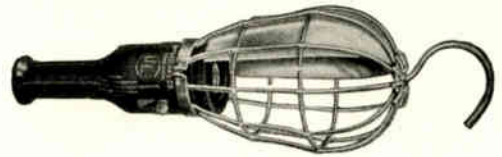
Loxon Wall Guards with Bottom Trap

1440	\$2.00	3 or 4	100	3 1/8	5 5/8	9 1/2
*1440-B	2.00	3 or 4	100	3 1/8	5 5/8	10 1/2
1581	1.75	Condulet or Unilet	60	3 1/8	6 3/8	9
1590	2.25	3 or 4	150	3 1/2	6 7/8	15
1591	2.75	3 or 4	200	4 1/8	8 1/4	16

*These guards fit the 4-inch square outlet, as well as the 3 and 4-inch round.

McGill Portable Lamp Guards

No. 7000 Series—With Rubber Handles



No. 7000-SR

These guards are made in a wide range of sizes for every need in industrial plants, garages, railroads, power plants, etc.

The handle is of high quality black molded rubber, formed to provide a solid rubber edge to support a tough fibre disk. Cord wires are run through holes in the disk and knotted, taking all strain off the cord and socket connection.

Cage is composed of ten extra heavy Bessemer steel wires, electrically welded and double cadmium alloy plated. Cage does not roll when laid down.

No.	Each	Cage	Lamp Size Watts	Socket	Length In.	Wt. Lb. Each
*7000	\$2.50	Plain Clsd.	40-100	4003 Keyless	14	1 3/8
*7000-R	3.00	Refl. Clsd.	40- 75	4003 Keyless	14	1 7/16
7000-S	3.00	Plain Clsd.	40-100	4005 Lever	14	1 3/8
7000-SR	3.50	Refl. Clsd.	40- 75	4005 Lever	14	1 7/16
*7001	2.50	Open Type	40-100	4003 Keyless	12	1 3/8
7001-S	3.00	Open Type	40-100	4005 Lever	12	1 3/8
7002	5.50	Open Type	200	4003 Grounded	..	..
*7000-M	2.25	Plain Clsd.	†50	4003 Keyless	12 3/8	1 3/16
*7000-MR	2.75	Refl. Clsd.	†50	4003 Keyless	12 3/8	1 1/4
7000-MS	2.75	Plain Clsd.	†50	4005 Lever	12 3/8	1 3/16
7000-MSR	3.25	Refl. Clsd.	†50	4005 Lever	12 3/8	1 1/4
*7001-M	2.25	Open Type	†50	4003 Keyless	10 3/4	1 3/16
*7001-MR	2.50	Open Refl.	†50	4003 Keyless	10 3/4	1 1/4
7001-MS	2.70	Open Type	†50	4005 Lever	10 3/4	1 3/16
7001-MSR	2.75	Open Type	†50	4005 Lever	10 3/4	1 3/16

No. 8000 Series—With Wood Handles



No. 8000-M

No. 8000 Series Guards are identical in style, number for number, to the No. 7000 Series except for the handles.

The handle is made of polished hardwood, finished in glossy black enamel. Sturdy and well constructed for long service.

No.	Each	Cage	Lamp Size Watts	Socket	Length In.	Wt. Lb. Each
*8000	\$2.50	Plain Clsd.	40-100	4003 Keyless	14	1 3/8
*8000-R	3.00	Refl. Clsd.	40- 75	4003 Keyless	14	1 7/16
8000-S	3.00	Plain Clsd.	40-100	4005 Lever	14	1 3/8
8000-SR	3.50	Refl. Clsd.	40- 75	4005 Lever	14	1 7/16
*8001	2.40	Open Type	40-100	4003 Keyless	12	1 3/8
8001-S	3.00	Open Type	40-100	4005 Lever	12	1 3/8
8002	5.50	Open Type	200	4003 Grounded	..	..
*8000-M	2.25	Plain Clsd.	50	4003 Keyless	12 3/8	1 3/16
*8000-MR	2.75	Refl. Clsd.	50	4003 Keyless	12 3/8	1 1/4
8000-MS	2.75	Plain Clsd.	50	4005 Lever	12 3/8	1 3/16
8000-MSR	3.25	Refl. Clsd.	50	4005 Lever	12 3/8	1 1/4
*8001-M	2.25	Open Type	50	4003 Keyless	10 3/4	1 3/16
*8001-MR	2.50	Open Type	50	4003 Keyless	10 3/4	1 3/16
8001-MS	2.75	Open Type	50	4005 Lever	10 3/4	1 3/16
8001-MSR	2.80	Open Refl.	50	4005 Lever	10 3/4	1 1/4

*These guards can be supplied with grounding attachment. For guards so equipped, add 20 cents each to the price.

†Rough service lamp.

The letter "R" indicates a reflector guard.

The letter "S" denotes switch or lever.

Guards can be supplied with thumbnut instead of screw at base of cage at no additional charge.

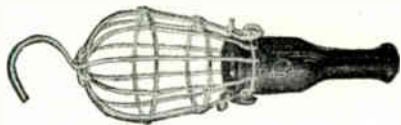
Cages also supplied for regular weather-proof sockets.

Rubber coated cages available at slight extra cost.

For special Loxon attachment, add 20 cents each.

No. 7100 Series McGill Portable Lamp Guards

With Rubber Handles



No. 7100

No. 7100 Series incorporates two features: a wire collar instead of a flat steel collar, and a clamp arrangement instead of screws to hold the cage to the handle. This clamp arrangement allows for variation in the size of the handle and makes lamp changing easier and faster because it requires no tools.

No.	Each	Cage	Lamp Size Watts	Socket		Lenh. In.	Wt. Lb. Each
7100	\$2.50	Plain Closed	40-100	4003 Keyless		14	1 3/8
7100-R	2.70	Refl. Closed	40-100	4003 Keyless		14	1 7/16
7100-S	2.80	Plain Closed	40-100	4005 Lever		14	1 3/8
7100-SR	3.00	Refl. Closed	40-100	4003 Keyless		14	1 7/16
*7100-M	2.30	Plain Closed	50	4003 Keyless	12 3/8	1 1/2	1 1/4
*7100-MR	2.40	Refl. Closed	50	4003 Keyless	12 3/8	1 1/2	1 1/4
*7100-MS	2.60	Plain Closed	50	4005 Lever	12 3/8	1 1/2	1 1/4
*7100-MSR	2.70	Refl. Closed	50	4005 Lever	12 3/8	1 1/2	1 1/4

*Rough service lamp.

No. 650 Series McGill Portable Lamp Guards

With Rubber Hook Handles



No. 651-MSR

Widely used in airports, machine shops, railroad yards and repair shops.

Socket portion of handle is made of pliable molded rubber; hook is made of hard molded rubber with a

steel cord. The socket rubber and hook rubber are thoroughly vulcanized together into a single unit. The rubber hook handle insures against shock while guard is hanging from any angle or place. Cord wires are run through a tough fibre disk and knotted, taking all strain off cord and socket connection.

Cage is made of ten extra heavy Bessemer steel wires, electrically welded, and cadmium-alloy plated. Fiber washers prevent cage screws from dropping out when lamp is changed. Cage does not roll when laid down.

No.	Each	Cage	Lamp Size Watts	Socket		Length In.	Wt. Lb. Each
*650	\$2.50	Plain Closed	40-100	4003 Keyless		15 5/16	1 7/16
*650-R	3.00	Refl. Closed	40-75	4003 Keyless		15 5/16	1 7/16
650-S	3.00	Plain Closed	40-100	4005 Lever		15 5/16	1 7/16
650-SR	3.50	Refl. Closed	40-75	4005 Lever		15 5/16	1 7/16
*650-M	2.25	Plain Closed	750	4003 Keyless	13 3/8	1 5/8	1 5/8
*650-MR	2.75	Refl. Closed	750	4003 Keyless	13 3/8	1 5/8	1 5/8
650-MS	2.75	Plain Closed	750	4005 Lever	13 3/8	1 5/8	1 5/8
650-MSR	3.25	Refl. Closed	750	4005 Lever	13 3/8	1 5/8	1 5/8
*651	2.50	Open Type	40-100	4003 Keyless		12 1/2	1 7/16
651-S	3.00	Open Type	40-100	4005 Lever		12 1/2	1 7/16
*651-M	2.25	Open Type	750	4003 Keyless		11 1/4	1 3/8
*651-MR	2.50	Open Refl.	750	4003 Keyless		11 1/4	1 3/8
651-MS	2.70	Open Type	750	4005 Lever		11 1/4	1 5/16
651-MSR	2.75	Open Refl.	750	4005 Lever		11 1/4	1 5/8

*Available with grounding attachment; add 20 cents each.

†Rough service lamp.

The letter "R" indicates a reflector guard.

The letter "S" denotes switch or lever.

Rubber coated cages available at slight extra cost.

Thumb Switch Type Portable Lamp Guards



THUMB SWITCH

One of the best all around guards for the private and public garage, basements, etc. It has a non-breakable lever

socket for one hand operation.

No. 2002	For 25-40-Watt Type Mill Lamps	each	\$3.00
No. 2003	For 25-75 C Lamps	each	3.00

McGill Home Portable Lamp Guards

With Rubber Handles



No. 9020-R

An all-purpose guard for home use. Cage consists of twelve No. 14 wires, spot welded at all joints. Carries a strong hook; reflector, if furnished, is made of solid steel and welded to cage. Large flare at end of rubber handle saves cord from sharp bends. Choice of turn knob and keyless type socket with porcelain base.

With Cord and Plug

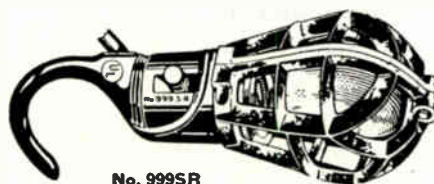
No.	Each	Cage	Lamp Size Watts	Socket	Lenh. Feet	Weight Cord Pounds Each
9020	\$2.40	Plain Closed	25-75	Keyless	20	2 1/2
9020-R	2.60	Refl. Closed	25-75	Keyless	20	2 1/2
9025	2.80	Plain Closed	25-75	Keyless	25	2 3/4
9025-R	3.00	Refl. Closed	25-75	Keyless	25	2 3/4
9120	2.60	Plain Closed	25-75	Turn Knob	20	2 1/2
9120-R	2.80	Refl. Closed	25-75	Turn Knob	20	2 1/2
9125	3.00	Plain Closed	25-75	Turn Knob	25	2 3/4
9125-R	3.20	Refl. Closed	25-75	Turn Knob	25	2 3/4

Without Cord and Plug

900	\$1.05	Plain Closed	25-75	Keyless	..	3/4
900-R	1.15	Refl. Closed	25-75	Keyless	..	3/4
910	1.10	Plain Closed	25-75	Turn Knob	..	3/4
910-R	1.20	Refl. Closed	25-75	Turn Knob	..	3/4

The letter "R" indicates a reflector guard.

No. 999 McGill Insulated Lamp Guards



No. 999SR

Used where protection against short circuiting is vital. Molded Insurok cage has high resistance to heat, cold,

moisture, oils, fumes, most chemicals and weak alkalies. Rubber hook handle; straight rubber handle if desired. For 50-watt rough service lamp. Length, 11 5/8 inches.

No.	Each	Cage	Socket No.	Wt. Lb. Each
999	\$4.50	Closed	4003	1 1/4
999-R	5.00	Closed Refl.	4003	1 1/2
999-S	5.00	Closed	4005	1 1/4
999-SR	5.25	Closed Refl.	4005	1 1/2

No. 1200 McGill Battery Portable Lamp Guards

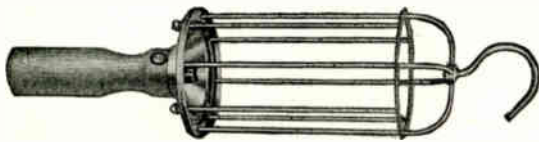
With Wood Handles



A handy portable battery operated guard which is used on trucks and in other places where electrical circuit is not available. Many large motor truck manufacturers consider this item standard equipment. Used for emergency purposes, it takes a 6 to 8-volt, 32-candle power Mazda lamp. Equipped with Ediswan base socket.

No.	Each	Cage	Lamp Size Watts	Sockets	Length In.	Wt. Lb. Each
1200	\$2.50	Refl. Closed	6-8 V. 32 Cp.	Ediswan	10	7/8

**McGill Crescent Portable Lamp Guards
With Wood Handles**

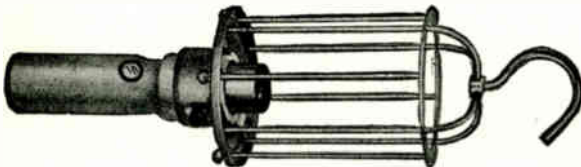


No. 4676

Made of high quality steel rods well secured to stamped metal ring, all with copper plate finish. Takes any 3/8-inch standard socket (socket is not included).

No.	Each	Cage	Lamp Size Watts	Length Inches	Weight Pounds Each
4645	\$1.80	Plain Closed	25-60	16	1 3/16
4676	2.00	Plain Closed	25-100	16 3/4	1 1/8

**McGill Bulldog Portable Lamp Guards
With Wood Handles**

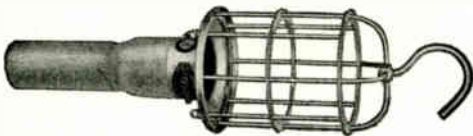


No. 4675

Made of best grade steel wire; hook and cage are copper plated. Polished hardwood handle, furnished with McGill Levolver Socket or keyless socket for any size lamp cord.

No.	Each	Cage	Lamp Size Watts	Socket	Length In.	Wt. Lb. Each
4675	\$3.00	Plain Closed	25-100	4004 Lever	15 1/4	1 3/16
2590	2.70	Plain Closed	25-100	4006 Keyless	15 1/4	1 3/16

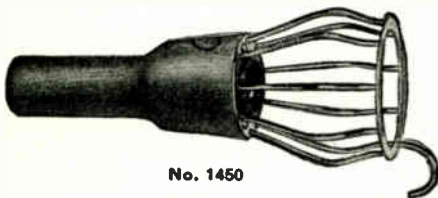
**No. 4000 McGill Dreadnaught Portable Lamp Guards
With Wood Handles**



A heavy closed cage guard used by railroads, quarries and other heavy industries. High grade steel wire cage and hook are copper plated. Weatherproof composition keyless socket.

No.	Each	Cage	Lamp Size Watts	Socket	Length In.	Wt. Lb. Each
4000	\$2.80	Plain Closed	25-60	4003 Keyless	14 7/8	1 3/16

**McGill National Portable Lamp Guards
With Wood Handles**



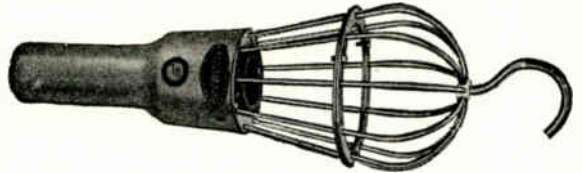
No. 1450

A heavy duty guard used by railroads, machine shops, etc. Heavily tinned steel wire cage. Socket has spring contacts.

No.	Each	Cage	Lamp Size Watts	Socket	Length In.	Wt. Lb. Each
*1450	\$2.50	Plain Open	25-40	4003 Keyless	11 1/8	7/8
*1450-R	3.00	Ref. Open	25-40	4003 Keyless	11 1/8	1 3/16
1451	2.50	Plain Open	25-75	4003 Keyless	11	1 1/16
1452	2.75	Plain Open	25-100	4003 Keyless	11 3/4	1 3/16

*Will take 50-watt rough service lamp.
The letter "R" indicates a reflector guard.

**No. 4673 McGill Standard Portable Lamp Guards
With Wood Handles**



A strong guard designed especially for iron ore districts, railroad shops and heavy industrials. Constructed of strong Bessemer steel rods and stamped metal rings. Cage is copper plated. Handle is fitted with No. 4003 socket.

No.	Each	Cage	Lamp Size Watts	Socket	Length In.	Wt. Lb. Each
4673	\$3.00	Plain Closed	25-100	4003 Keyless	14 1/4	1 1/8

**No. 2598 McGill Crescent Tubular Portable Lamp Guards
With Wood Handles**



Designed for use around switchboards, boilers, valves, etc.—wherever space is limited. Overall diameter, 2 inches. Heavy brass cage and hook prevent sparking. Polished hardwood handle. Keyless socket, imbedded; spring cushion at end protects tubular lamp.

No.	Each	Cage	Lamp Size Watts	Socket	Length In.	Wt. Lb. Each
2598	\$3.50	Plain Clsd.	T-10 4009	Keyless Tubular	13 1/2	1 1/16

**McGill Safety Vaporproof Portable Lamp Guards
With Tight-Sealing Globes**

Wherever inflammable gases, vapor or materials are present, these safety guards should be used.

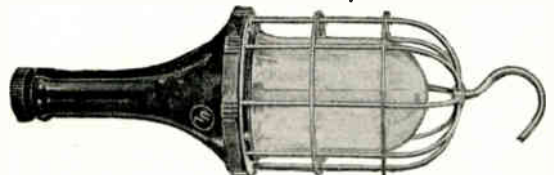
**No. 3000—With Hardwood Handles
For 50-Watt Rough Service Lamps**



No. 3000

Hardwood handle has a black, rubberized enamel finish. Cage consists of eight 5/8-inch steel side wires riveted to heavy steel rings and embedded in the handle.

**No. 3005—With Insurok Handles
For 100-Watt Lamps**



Insurok handle can be supplied finished in brown or black. Brass or black oxidized cage is made of 5/8-inch solid brass wire reinforced with three solid brass rings.

Specifications and Prices

No.	Each	Cage	Lamp Size Watts	Socket	Length In.	Wt. Lb. Each
*3000	\$6.00	Plain Closed	{ 75 } { 40 Std. }	4003 Keyless	14 1/2	2 1/4
*3000-R	6.50	Ref. Closed	{ 75 } { 40 Std. }	4003 Keyless	14 1/2	2 3/16
3005	10.00	Plain Closed	100	4003 Keyless	16 1/2	3 1/4

*Available with grounded sockets; add 40 cents each.
†Rough service lamp.
The letter "R" indicates a reflector guard.

No. 3002 McGill Safety Vaporproof Portable Lamp Guards

With Bakelite Handles



No. 3002

Mercerized bakelite handle is equipped with bakelite packing nut and rubber packing gland. Gland makes guard waterproof and acts as a strain relief. Cage is of brass wire with two brass rings for bracing and is grounded to the socket. Globe is of heat and impact resisting glass.

No.	Each	Cage	Lamp Size Watts	Socket	Lgth. In.	Wt. Lb. Each
3002	\$11.00	Plain Closed	60	4002-G	14½	2½
3002-R	12.00	Refl. Closed	60	4002-G	14½	2½
No. 3002-G Globes Only.....						per dozen \$15.00

No. 2599 McGill Portable Lamp Guards



This guard is designed for bungholes and other places where space is limited.

Guard is all steel, and only 1 inch in diameter.

Has cord protector, strain relief and hook.

The steel cage has thirty-two 3/8-inch holes and four 1/4-inch holes to give plenty of light.

Nickel plated finish.

No.	Each	Cage	Lamp Size Watts	Socket	Lgth. In.	Wt. Lb. Each
2599	\$15.00	Special	25 (T-6-3/4)	GE-2957	35¾	1¾

Morse Eureka Portable Hand Guards



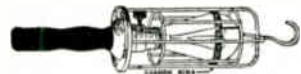
Open End

No.	Each	No. of Watts	B. & S. Gage
30	40	10
70	60	10
72	100	10
69	200	8



With Cushion Rings

No.	Each	No. of Watts	B. & S. Gage
75	60	10
77	100	10
73	200	10



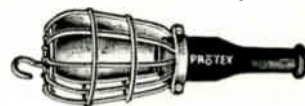
Closed End

No.	Each	No. of Watts	B. & S. Gage
36	40	6
46	60	6
48	100	6

Protex Rubber Handle Portable Lamps



No. 100



No. 112

With oil-resisting high-grade rubber handle, Watertite type molded rubber socket and steel wire guard with hook.

Closed End Type

Without Reflector

No.	Each	Watts	Std. Pkg. Wt. Lb.
100	\$2.50	60-75	30 41
101	2.25	40-50	30 37
102	2.50	100	30 42
103	4.25	200	30 47
With Reflector			
104	3.25	60-75	30 45
105	3.00	40-50	30 40
106	3.25	100	30 47
107	5.00	200	30 52

Open End Type

Without Reflector

No.	Each	Watts	Std. Pkg. Wt. Lb.
108	\$2.50	60-75	30 43
109	2.25	40-50	30 38
110	2.50	100	30 44
111	4.25	200	30 51
With Reflector			
112	3.25	60-75	30 49
113	3.00	40-50	30 40
114	3.25	100	30 49
115	5.00	200	30 57

Protex Double Outlet Portable Lamps



Any of the above numbers can be furnished with plug-in type side outlet which permits a tool to be plugged into the handle of the portable lamp as illustrated.

For Parallel Type Plug. When ordering add letter (K) to above number and add 75 cents to list price.

For Polarity Type Plug. When ordering add letter (Z) to above number and add 85 cents to list price.

For Three Wire Type Side Outlet. When ordering add letter (K3) to above number and add 90 cents to list price.

Protex Portable Lamp Guards

Rubber Insulated Guards

For safe use around switchboards, in electric sub-stations and on electric locomotives. For chemical and oil conditions.

Guard is thoroughly insulated with an even coating of tough rubber to prevent electrical shorts.

For rubber covered type guard on any of the above numbers add letter (I) to above number and add \$2.00 to list price.

With Fiber Guards

Consists of rubber handle, keyless socket and screwless type of closed end fiber guard with hook and reflector. Guard is made of the

strongest fiber obtainable and is waterproof.

Standard package 30, weight 37 pounds.

No.	Each	Watts	116	117	118
No.			\$4.00	4.10	4.60
Each			40-50	60-75	100
Watts					

With Bakelite Guards

Consists of rubber handle, keyless socket and closed end guard with hook. Entire guard is molded Bakelite with a canvas filler to give it maximum strength.

No.	Each	Watts	Standard Package 30, Weight
No.			119 *120
Each			\$3.75 4.00
Watts			40-60 40-60
Standard Package 30, Weight			pounds 36 40

Protex Portable Inspection Lamps

Designed for use on jobs where concentrated illumination is required, such as automobile body and castings inspection.

Unit consists of rubber handle, keyless socket and highly polished reflector.

No.	Each	Watts	Reflector Shape	Standard Package 30, weight
No.				121 122
Each				\$3.25 4.50
Watts				40-60 40-60
Reflector Shape				4¼x5 Bell Parabola
Standard Package 30, weight				34 44

If key type socket is desired, specify so, and add 25 cents to list price.



Vaprotex Portable Lamps

With Steel Wire Guard



For illumination purposes where gases, dust and other explosives exist. When assembled according to our design they may be used in the most hazardous locations

with absolute safety. It is impossible for vapors to enter the glass globe.

Includes rubber handle, bakelite socket, glass globe and steel wire guard with hook.

Standard package, 12.

No.	1200	1201	1202	1203
Each	\$9.00	10.00	10.50	11.50
Watts	60-75	100	60-75	100
Stuffing Box in Handle	No	No	Yes	Yes
Weight Standard Package..lb.	37	42	40	48

For Rubber Covered Guard on any of the above numbers add the letter (I) to number and add \$3.25 to list price.

With Non-Sparking Aluminum Guards



Includes rubber handle, bakelite socket, glass globe, and non-sparking aluminum guard with hook.

Standard package, 12.

No.	1204	1205	1206	1207
Each	\$13.00	14.00	14.50	15.50
Watts	60-75	100	60-75	100
Stuffing Box in Handle	No	No	Yes	Yes
Weight Standard Package..lb.	44	48	46	51

If Ground Clip is desired, specify so, and add 50 cents to list price.

If Neotex Handles are desired, add \$2.00 to list price.

Vaprotex Bunghole Lamps
Long



A vaporproof lighting unit for inspecting gasoline, oil, chemical and other drums used for explosives.

Made of non-sparking metal throughout.

Packed 1 in a standard package.

No.	Each	Watts	Lgth. In.	O.D. In.	Wt. Lb. Std. Pkg.
1300	\$19.50	15	30	1 1/2	5
1303	21.50	25	32 1/2	1 1/2	5 1/2

Short



No.	Each	Watts	Lgth. In.	O.D. In.	Wt. Lb. Std. Pkg.
1301	\$15.00	15	12	1 1/2	3 1/2
1304	17.00	25	14 1/2	1 1/2	4

No. 1302 Protex Bunghole Lamps



A non-vaporproof unit for inspecting beer, lard, syrup and other barrels used for non-explosive solutions.

Length 30 inches. Outside diameter 1 inch.

Takes 15 watt bulb.

Packed 1 in standard package, weight, 4 pounds.

No. 1302.....each \$12.00

Protex Automatic Cord Winders



Keeps cord free of oil and dirt by keeping it off the floor; keeps the way clear for the movement of cars, trucks and other objects; etc.

Cord permanently connected to supply line. Drum is stationary. Special spring gives a cushioned stop at end of rewind; prevents lamp filaments from breaking under shock of an abrupt stop.

Can be supplied with any type of Protex or Vaprotex portable lamp.

Packed 1 in a standard package.

No. 900

With Type SJ Underwriters' approved 40-foot all rubber cord.

Weight per standard package, 22 pounds. No. 900.....each \$29.00

No. 901

Same as No. 900, but with No. 104 Protex portable lamp. Weight per standard package, 23 pounds.

No. 901.....each \$32.25

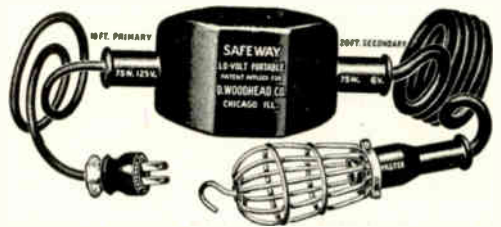
No. 902

Same as No. 900, but with No. 1200 Vaprotex portable lamp. Weight per standard package, 25 pounds.

No. 902.....each \$38.00

Safeway Lo-Volt Portable Lamps

75-Watts, 60-Cycles



This portable lamp assures a much higher factor of safety, reducing the possibility of shock and burns when used in boilers, tanks, etc., on steel, cement or damp wood floors and other hazardous places.

Composed of a 75-watt, 125, 32 or 6-volt a.c. transformer, molded into a high quality, heat and oil resisting rubber jacket. Primary lead is a 10-foot, No. 16 all rubber cord, to which is attached a Safeway plug with cord grip. Secondary lead is a 20-foot, No. 14 all rubber cord, and may be equipped with either a Protex or Vaprotex unit.

Packed 1 in a standard package.

Complete with Protex and Safeway Plug

No.	With Reflector Each	Without Reflector Each	VOLTAGE		Wt., Lb. Std. Pkg.
			Primary	Secondary	
1600	.....	\$32.50	125	6	13
1601	\$33.25	.....	125	6	13
1602	.....	32.50	125	32	13
1603	33.25	.....	125	32	13

Complete with Vaprotex and Steel Guard

No.	With Stuffing Box Each	Without Stuffing Box Each	VOLTAGE		Wt., Lb. Std. Pkg.
			Primary	Secondary	
1620	.....	\$39.00	125	6	15
1621	\$40.50	.....	125	6	15
1622	.....	39.00	125	32	15
1623	40.50	.....	125	32	15

Complete with Vaprotex and Aluminum Guard

No.	.....	.....	Primary	Secondary	Wt., Lb. Std. Pkg.
1630	.....	\$43.00	125	6	15
1631	\$44.50	.....	125	6	15
1632	.....	43.00	125	32	15
1633	44.50	.....	125	32	15

For three-wire grounded wiring, add \$2.50.

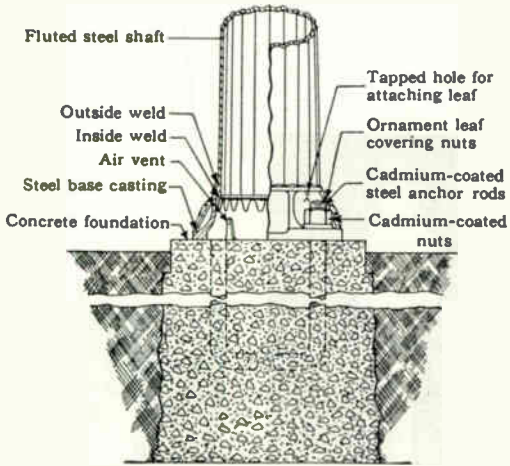
For 250-volt primary winding, add \$1.50; specify changes desired.

Union Metal Heavy Duty Steel Lighting Standards For Suspension Type Luminaires

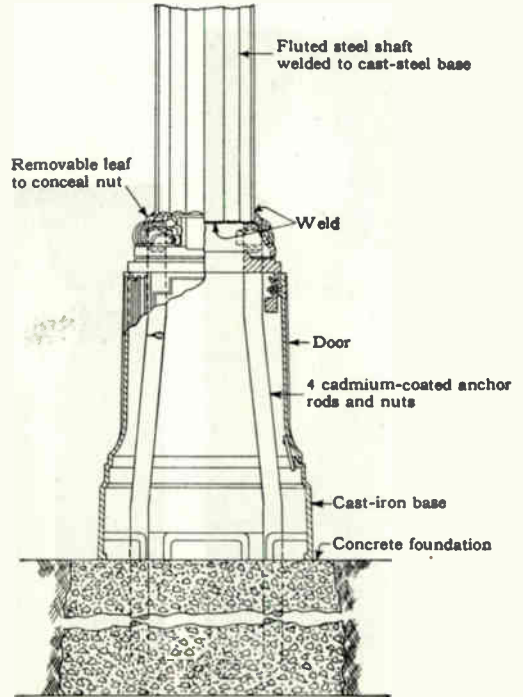
Base Construction

Anchor lugs are cast in the lower part of the base to fasten to the anchor bolts.

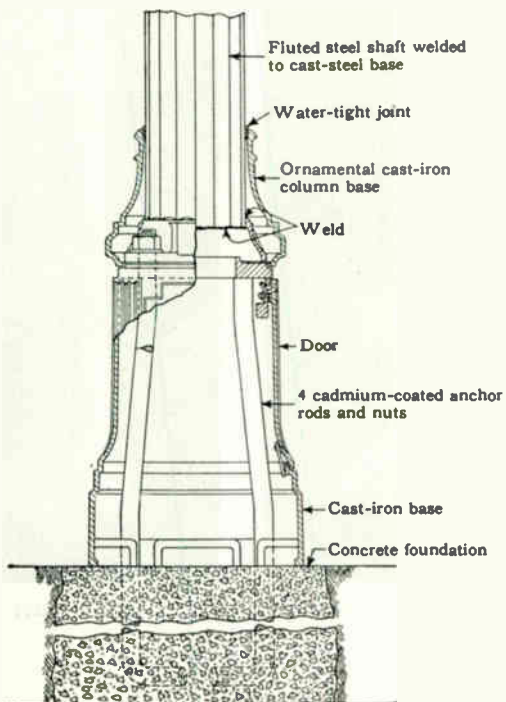
A heavy steel web or flange is welded on the inside of the shaft near the lower end and rods extend from this flange through the base to lugs adjacent to the anchor lugs.



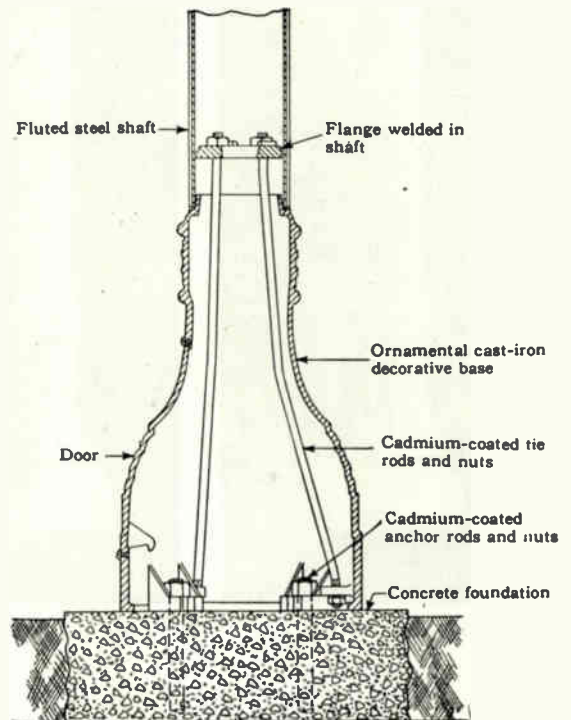
Type E



Type EE

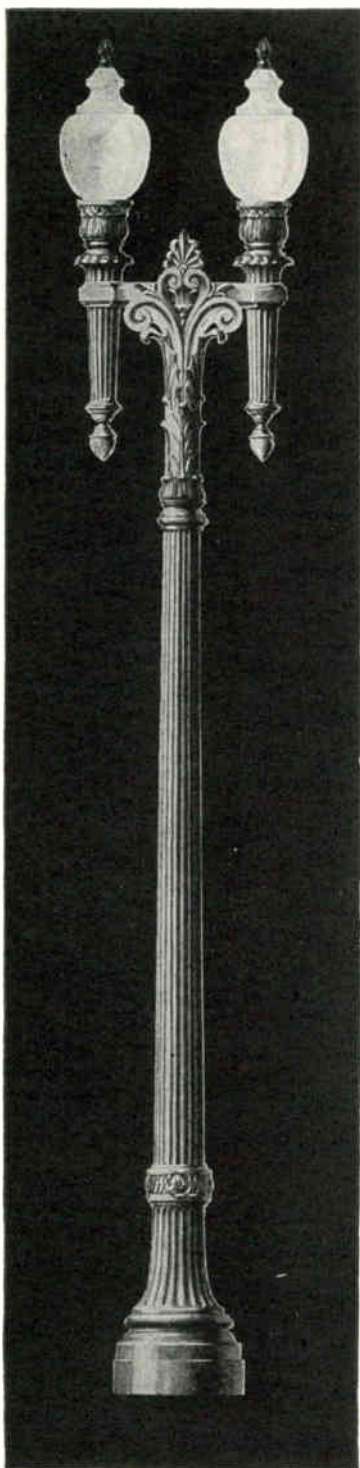


Type EEG

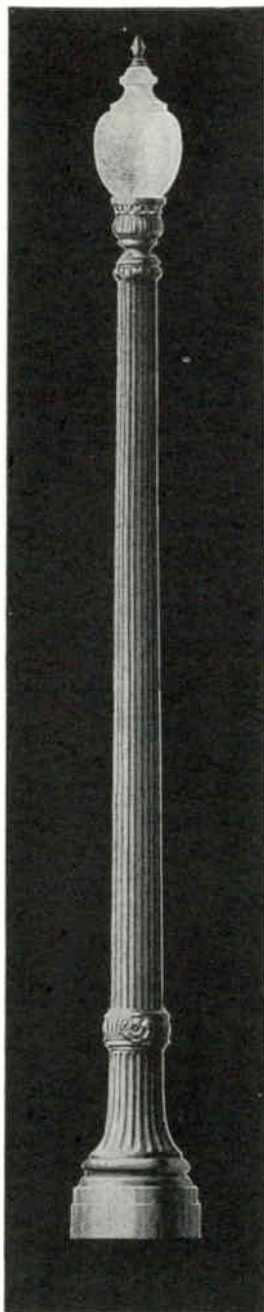


Type JJ

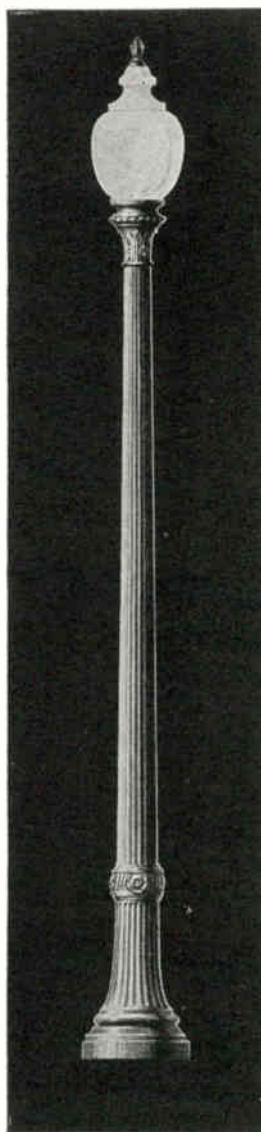
Union Metal Steel Lighting Standards
Columbian Design



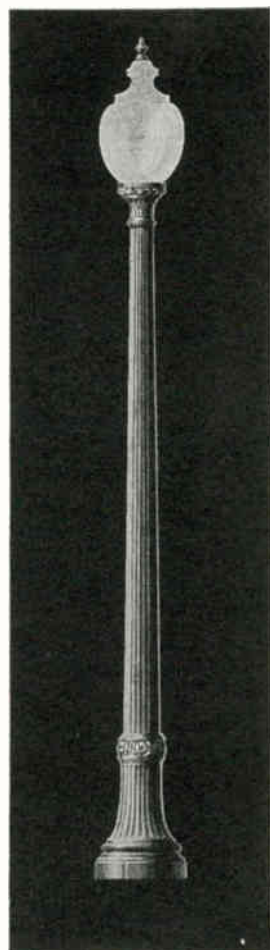
Design No. 9014



Design No. 2515



Design No. 807



Design No. 1571

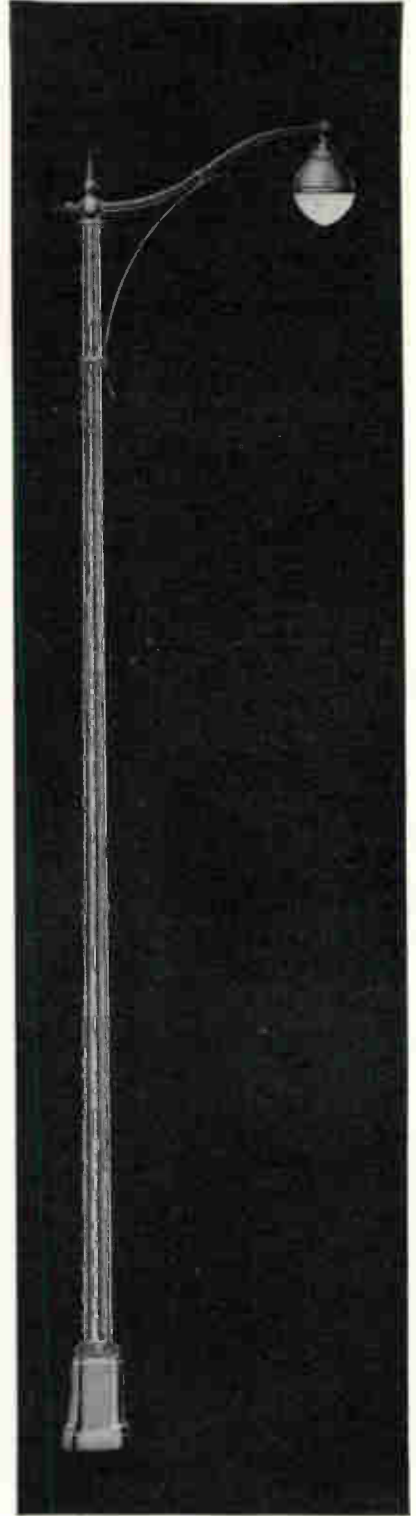
Union Metal Heavy Duty Steel Lighting Standards
For Suspension Type Luminaires



No. 6213 Fluted
(Equivalent Monotube Design, No. 6219)



No. 6221 Fluted
Also Supplied in Monotube



No. 6319 Fluted

Union Metal Heavy Duty Steel Lighting Standards
For Suspension Type Luminaires



No. 6321 Monotube



No. 40042 Octagonal



No. 40043 Fluted

King Ferronite Cast Iron Lighting Standards

Designs available in groups of similar designs to meet all requirements in one locality.

Construction

Made from aluminum patterns in iron flasks.

Ferronite is a special composition of greater strength than ordinary cast iron.

Ferronite insures all delicate details of design to be smooth, clean cut, deep and perfect.

The inside of standards is as smooth as the outside which prevents damage to cable insulation.

Wall thickness of standards is uniform and weight is distributed uniformly which increases strength of standards.

Standards are given a shop priming coat of special hard skin paint. Final finish is to be put on by customer after installation.

Door in base of standard permits ready access for anchoring, making electrical connections, installing transformers, testing and inspecting.

Safety Spiders

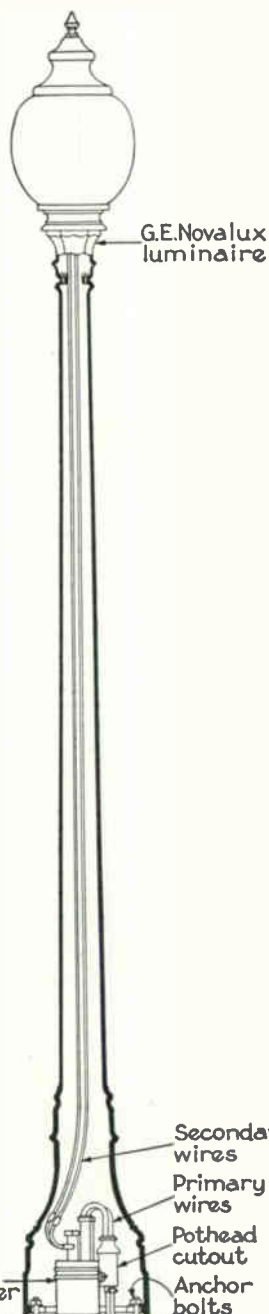
Used to prevent and limit the fall of standard on violent impact.

Recommended on heavily traveled thoroughfares.

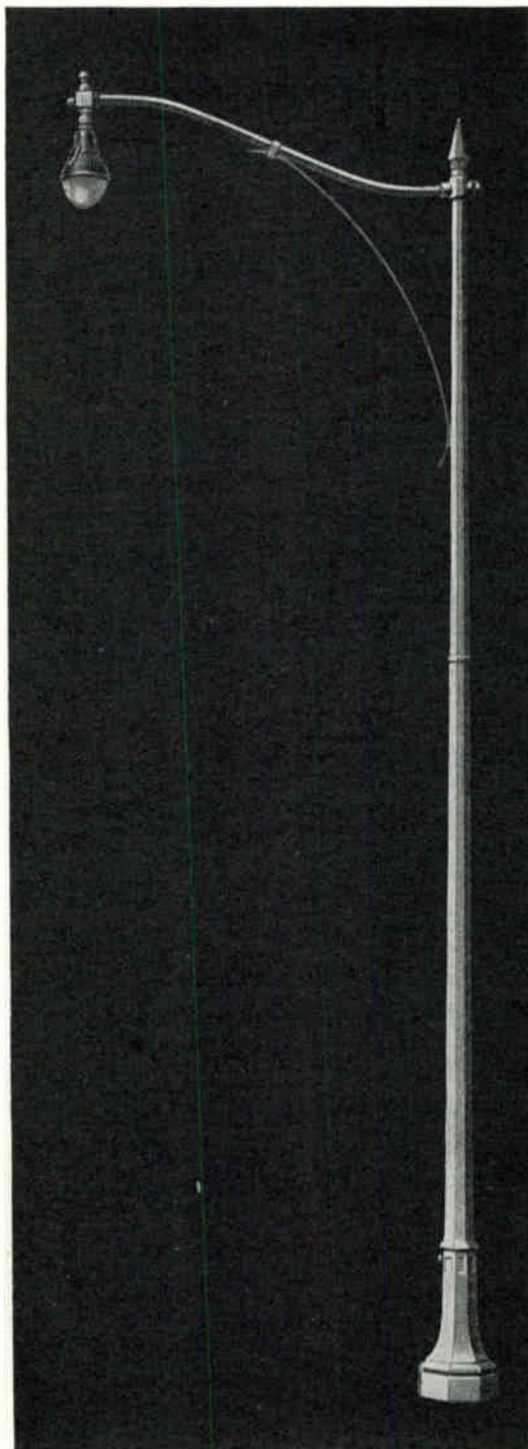
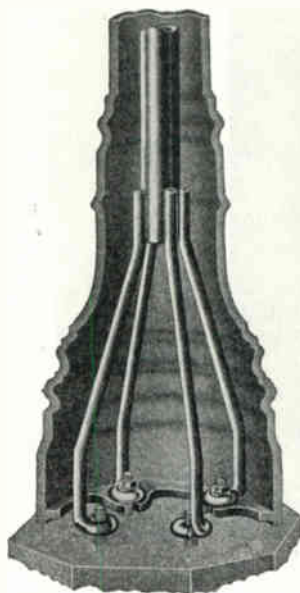
Provided at increased cost on special order only, where not listed.

Pipe reinforcement furnished on some designs.

Safety spider available to permit use of transformers in base of standard.



Section of King standard

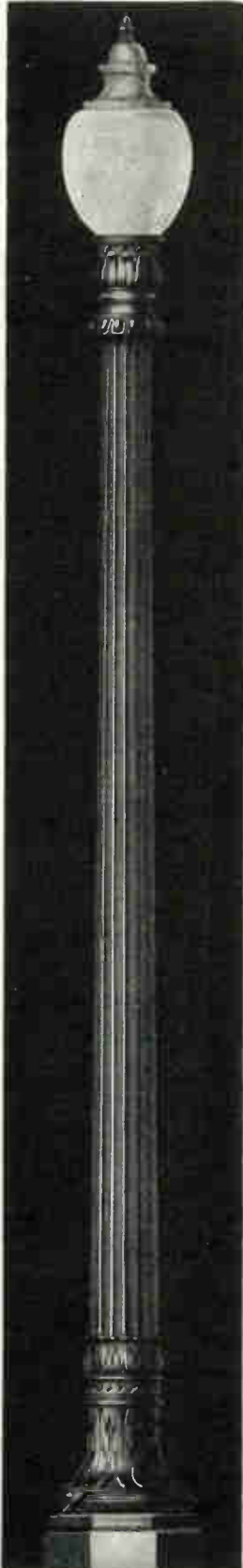


Pendent King

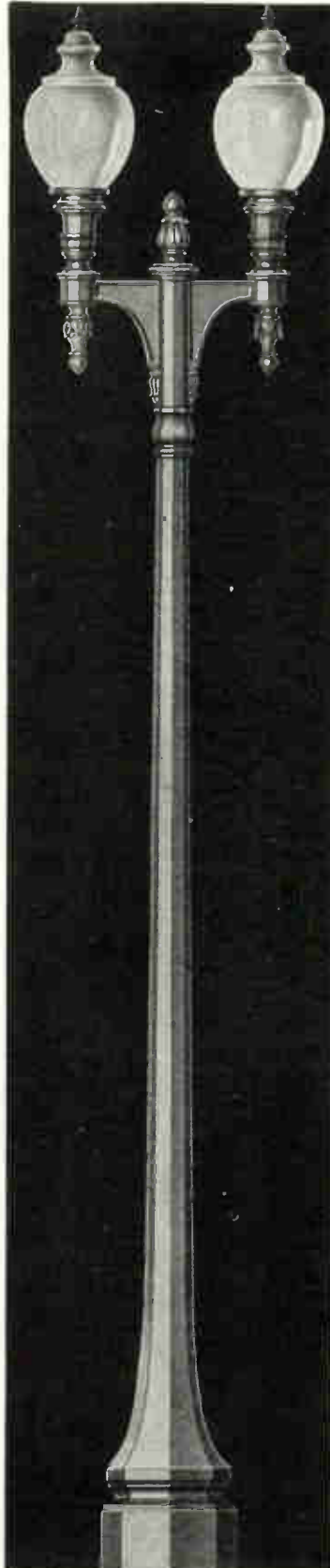
King Ferronite Cast Iron Lighting Standards
Doric Design Community Design



Design No. K-70



Design Nos. K-73, K-145,
K-168, K-1666



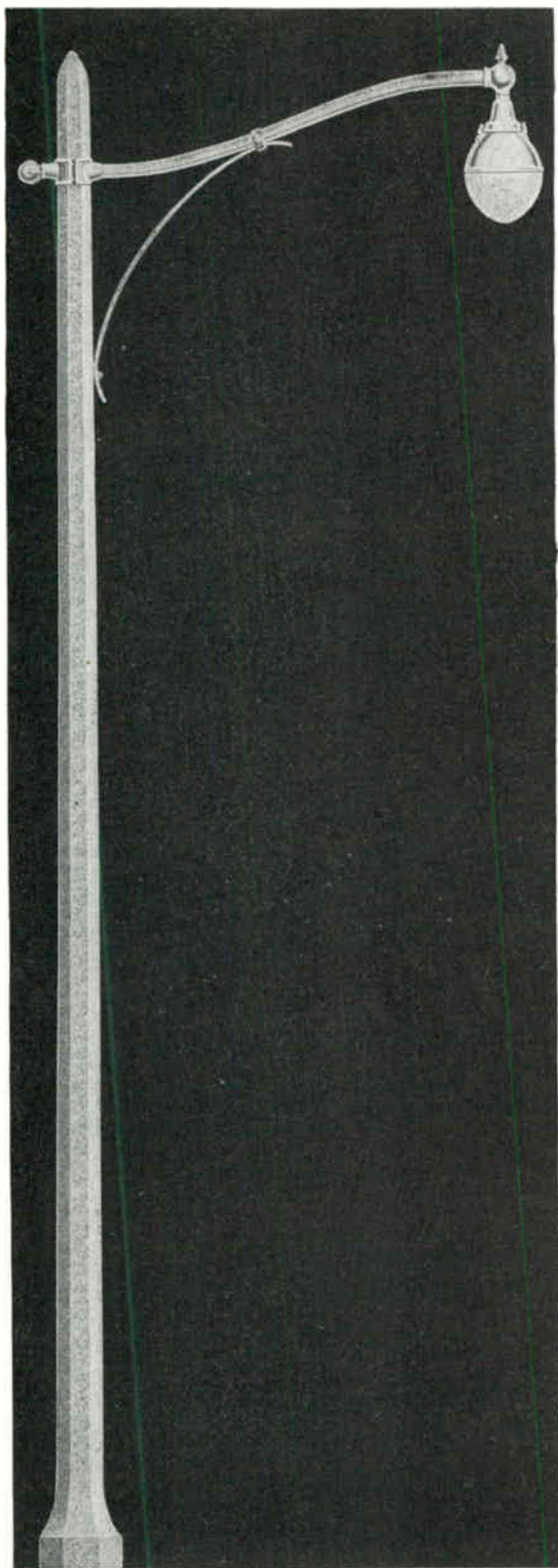
Design Nos. K-129,
K-1842



Design Nos. K-16, K-17
K-77, K-79, K-1559

Additional Information Furnished on Request

American Concrete Lighting Standards



Hy-Lite Design

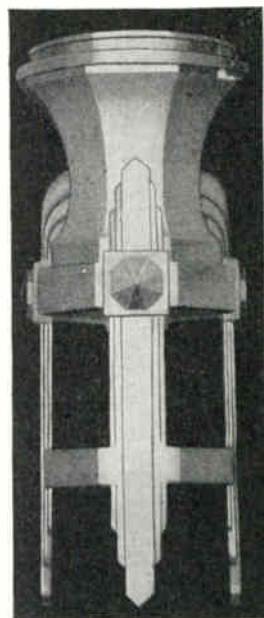


Colonial Design
with Type S
Fitter and
Follum Casing



Urban Design
with Type P
Fitter

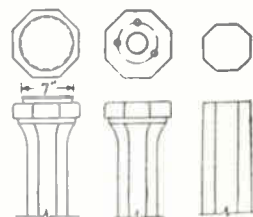
G-E Novalux Follum Casing



The follum casing is used on poles with the Type S fitter. Cast aluminum is standard but bronze can also be furnished. Two other types of fitters are available as shown below. The Type P is preferred.



Pole Adapter

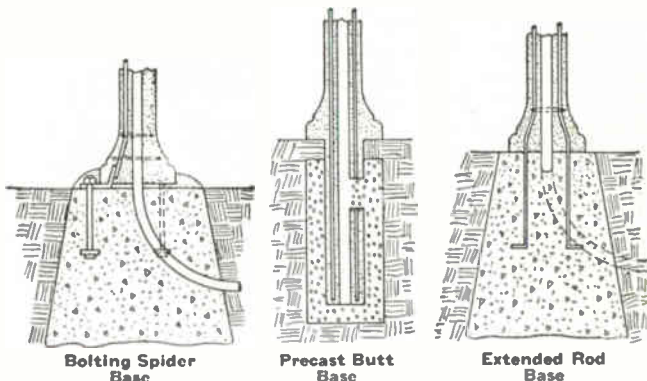


Type P
Fitter

Type I
Fitter

Type S
Fitter

Base Construction



Bolting Spider
Base

Precast Butt
Base

Extended Rod
Base

G-E Novalux Ornamental Luminaires



Form 8 G-E Luminaire,
No. 3 Casing,
No. 123-1123 Glassware



Form 8 G-E Luminaire,
F Casing,
No. 127-1127 Glassware



Form 9 G-E Luminaire,
E Casing,
No. 107-1107 Glassware



Form 12 G-E Luminaire,
M Casing,
No. 124-1124 Glassware

The General Electric Novalux Ornamental Luminaire consists of a cast iron casing with series or multiple socket, rippled glass globe, and a canopy and canopy holder. It may also be furnished with a refractor, ornamental ribs and bands, or in the lantern type unit.

Casing

All casings are made of best grade gray cast iron, green paint, except Form 33 which is furnished in aluminum as standard. The casings are designed to harmonize with architectural treatment of the lighting standards. The globe seat or ring is integral with the casting on Forms 8, 9, 13, 16, and 21 and separate on Form 12. The Form 33 consists of only a globe ring. Drain holes are drilled in all globe rings. Auto transformers may be mounted in the Forms 8, 12, and 16 casings, on the under side of a porcelain insulation plate. Each casing has cast lugs for supporting a porcelain receptacle or supports for multiple sockets. The variety of casings make it possible to mount the luminaire on various types of poles. The accompanying table shows forms of casings which are adaptable to the various poles.

Glassware

Globes serve a two-fold purpose; first, they act as secondary light source to diffuse evenly all light given off by the lamp so that there will be no disturbing glare and second, to protect the lamp from breakage. Rippled General Electric glassware has high mechanical strength, efficiency of light transmission, and immunity from the effect of abrupt changes in temperature. It gives an incandescent light source the appearance of sparkling light. The small irregular vertical ridges give excellent diffusion which appears to sparkle. The ripples are so

arranged that there are no horizontal flat surfaces to collect dirt and the rain will course over the entire globe due to the construction of the ripples. There globes are available in a variety of shapes and sizes which are shown in outline on other pages.

Canopy Holders

Most internal canopy holders fasten to the upper lip of the globe by set screws and are provided with a swinging arm to hold the canopy while cleaning or relamping. Canopies used with Nos. 103, 123, and 124 globes are held by an internal support which fastens to the casing, unless external ribs are supplied.

When ornamental ribs are furnished the canopy is held by four spring clips fastened to the ornamental band.

Ornaments

Ornamental ribs, bands, and pinnacles can be obtained to add to the appearance of the luminaire. These ornaments are designed for added beauty without interference with the light distribution. When the ornamental ribs and bands are used, the canopy holder is omitted and canopy is held in place by spring clips mounted on the ornamental band.

Lantern Types

The lantern type Novalux luminaire is basically the same as the other ornamental luminaires, except that it is designed to fit into the various architectural designs so as to give the best appearance with a minimum sacrifice of efficiency.



Form 13 G-E Luminaire,
No. 13 Casing,
No. 109-1109 Glassware



No. 16 G-E Luminaire,
Q Casing,
No. 118-1118 Glassware



Form 18-A G-E Luminaire,
SK Casing,



Form 27 G-E Luminaire,
No. 21 Casing,
No. 118-1118 Glassware



Form 33 G-E Luminaire
No. 124-1124 Glassware,
Ornamental Ribs



Form 56 G-E Luminaire

Parts for G-E Novalux Ornamental Luminaires



Fig. 1
Forms K, F, 2K, and 3 Casings



Fig. 2
Form E Casing



Fig. 3
Forms N and M Casings



Fig. 4
Forms 12K and 13 Casings



Fig. 5
Form Q Casing



Fig. 6
Forms 71, 72, and 73 Casings



Fig. 7
Form 21K Casing

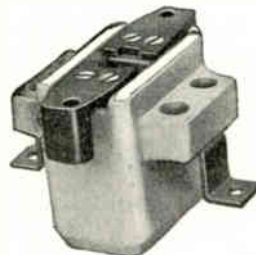


Fig. 8
Series Receptacle



Fig. 9
Casing with Series Receptacle



Fig. 10
Casing with Mogul
Multiple Socket

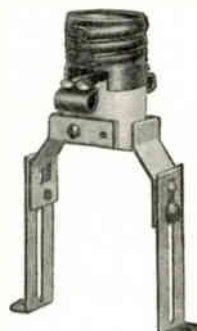


Fig. 11
Mogul Multiple Socket
with Supports



Fig. 12
Series Socket

Parts for G-E Novalux Ornamental Luminaires

(Continued)



Fig. 13
Canopy Holder and Pinnacle



Fig. 14
Canopy Holder and Pinnacle



Fig. 15
Refractor Holder



Fig. 16
Ornamental Rib



Fig. 17
Ornamental Rib

Luminaire Form No.	Globe No.	Canopy No.	Casing		Fig. 9 Casing and Series Receptacle No.	Fig. 10 Casing and Multiple Mogul Socket No.	Fig. 8 Series Recept. and Support Only No.	Fig. 11 Mogul Mult. Socket and Support Only No.	Fig. No.	Canopy Holder and Pinnacle No.	Fig. 15 Refractor Holder No.	Fig. 16 Ornamental Band No.	Fig. 17 Ornamental Rib 4 Require per Lum. No.	
			Fig. No.	Form No.										No.
8	39	1039	1	K	1279282G20	1279282G1	1279282G4	4815794G3	1222990G2	13	3717100G9			
	109	1109			1279282G20	1279282G1	1279282G4	4815794G3	1222990G2		3717100G1	3706350G1		
	127	1127			1279282G20	1279282G3	1279282G6	4815794G4	1222990G3		3717100G2	3706350G1		
	128	1128			1279282G20	1279282G1	1279282G4	4815794G3	1222990G2		3717100G3			
8	39	1039	1	F	1279283G23	1279283G1	1279283G4	4815794G3	1222990G2	13	3717100G9			
	109	1109			1279283G23	1279283G1	1279283G4	4815794G3	1222990G2		3717100G1	3706350G1		
	127	1127			1279283G23	1279283G3	1279283G6	4815794G4	1222990G3		3717100G2	3706350G1		
	128	1128			1279283G23	1279283G1	1279283G4	4815794G3	1222990G2		3717100G3			
8	*123	1123	1	2K	1227300G4	1279281P40	1279281P41	4815794G3	1222990G2	14	4888328G1	3706350G3	3758010G1	3740190P1
	†123	1123			1279281G6	1279281G1	1279281G3	4815794G3	1222990G2		3740644G1	3706350G3	1237927G1	
8	*123	1123	1	3	28X982	1279271P57	1279271P58	4815794G3	1222990G2	14	4888328G1	3706350G3	3758010G1	3740190P1
	†123	1123			1279271G12	1279271G1	1279271G3	4815794G3	1222990G2		3740644G1	3706350G3	1237927G1	
9	37	1037	2	E	189571	1279293G9	1279293G10	4815794G1	1222990G2	13	3717100G8	3706350G1		
	107	1107			189571	1279293G9	1279293G10	4815794G1	1222990G2		3717100G4	3706350G1		
	118	1108			189571	1279293G16	1279293G17	4815794G2	1222990G2		3717100G5	3706350G1		
12	*124	1124	3	M	29X113	1279336P129	1279336P130	4815794G2	1222990G2	14	4888328G2	3706350G4	3758010G3	3717052P1
	†124	1124			1279336G29	1279336G14	1279336G15	4815794G2	1222990G2	14	3740644G2	3706350G4	1237927G2	
	127	1127			1279336G29	1279336G6	1279336G7	4815794G2	1222990G3	13	3717100G2	3706350G1		
12	37	1037	3	N	1279345G27	1279345G9	1279345G10	4815794G1	1222990G2	13	3717100G8	3706350G1		
	118	1118			1279345G27	1279345G16	1279345G17	4815794G2	1222990G2		3717100G5	3706350G1		
12	*123	1123	3	O	25X775	1279329P69	1279329P70	4815794G3	1222990G2	14	4888328G1	3706350G3	3758010G1	3740190P1
	†123	1123			1279329G13	1279329G1	1279329G3	4815794G3	1222990G2		3740644G1	3706350G3	1237927G1	
13	39	1039	4	12K	1279341G10	1279341G1	1279341G3	4815794G3	1222990G2	13	3717100G9			
	109	1109			1279341G10	1279341G1	1279341G3	4815794G3	1222990G2		3717100G1	3706350G1		
	127	1127			1279341G10	1279341G6	1279341G5	4815794G4	1222990G3		3717100G2	3706350G1		
	128	1128			1279341G10	1279341G1	1279341G3	4815794G3	1222990G2		3717100G3			
13	39	1039	4	13	1279340G8	1279340G1	1279340G3	4815754C3	1222990G2	13	3717100G9			
	109	1109			1279340G8	1279340G1	1279340G3	4815794G3	1222990G2		3717100G1	3706350G1		
	127	1127			1279340G8	1279340G6	1279340G5	4815794G4	1222990G3		3717100G2	3706350G1		
	128	1128			1279340G8	1279340G1	1279340G3	4815794G3	1222990G2		3717100G3			
16	37	1037	5	Q	1279338G27	1279338G11	1279338G12	4815794G1	1222990G2	13	3717100G8	3706350G1		
	107	1107			1279338G27	1279338G11	1279338G12	4815794G1	1222990G2		3717100G4	3706350G1		
	118	1118			1279338G27	1279338G19	1279338G20	4815794G2	1222990G2		3717100G5	3706350G1		
27	118	1118	7	12K	1272291G1	1279362G1	1279362G2	4815794G2	1222990G2	13	3717100G5	3706350G1		
33	37	1037	6	71	4830663P34	4830663G3	4830663G10	4815794G1	1222990G2	13	3717100G8	3706350G1		
	107	1107			4830663P34	4830663G3	4830663G10	4815794G1	1222990G2		3717100G4	3706350G1		
	118	1118			4830663P34	4830663G4	4830663G11	4815794G2	1222990G2		3717100G5	3706350G1		
33	39	1039	6	72	71X647	4830670G3	4830670G4	4815794G1	1222990G2	13	3717100G9			
	109	1109			71X647	4830670G3	4830670G4	4815794G1	1222990G2	13	3717100G1	3706350G1		
	127	1127			71X647	4830670G5	4830670G6	4815794G2	1222990G3	13	3717100G2	3706350G1		
	128	1128			71X647	4830670G3	4830670G8	4815794G1	1222990G2	13	3717100G3			
	†124	1124			71X647	4830670G5	4830670G6	4815794G2	1222990G2	14	3740644G2	3706350G4	1237927G2	
	*124	1124			71X648	4830670P51	4830670P52	4815794G2	1222990G2	14	4888328G2	3706350G4	3758010G3	3717052P1
33	†123	1123	6	73	71X649	4830795G4	4830795G5	4815794G3	1222990G2	14	3740644G1	3706350G3	1237927G1	
	*123	1123			71X650	4830795P52	4830795P53	4815794G3	1222990G2		4888328G1	3706350G3	3758010G1	3740190P1

*Have both ornamental bands and ribs.
†Have only ornamental bands.

‡Casings include mounting screws and globe-holding screws.
All series luminaires use series socket, Fig. 12, No. 4815866G1.

Prices upon Application

G-E Holophane Refractors

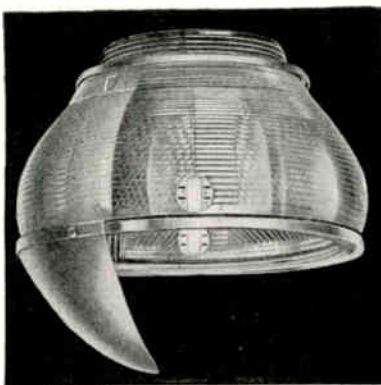
These refractors conserve the light in the upper hemisphere and redirect it to the street where it is more useful.

Refractors added to luminaires result in 50 to 80% higher utilization of light on the road and also distribute light more uniformly.

Band and Dome Refractors



Band Refractor



Dome Refractor



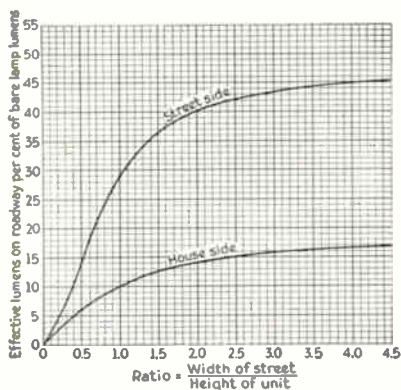
Dome Refractor

Band Refractors are used where a totally enclosed unit is not desired. They direct upward light downward, but have no effect on light emitted downward from the lamp.

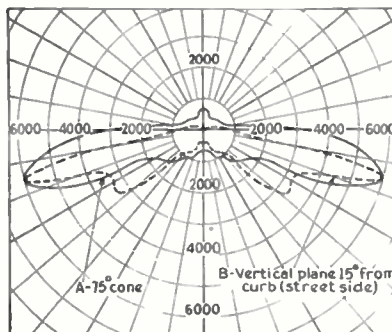
Dome Refractors are for use in an enclosing globe, either suspension or upright ornamental types. In addition to the Sym-Etric refractor which distributes light uniformly in a horizontal plane, A-Sym-Etric and B-Sym-Etric types are also available. These direct house side light onto the street. They may be added to existing systems to modernize them and provide more light on the street using the same lamp.

Shields are available for attaching to all types of Dome Refractors. These shields reduce the light on the house side.

Bowl Refractors



Effective Lumens of Roadway of Form 52 Luminaire with 11-Inch C-Way Bowl Refractor and Alzak Reflector



Light Distribution for 11-Inch C-Way Bowl Refractor

Bowl Refractor

Sym-Etric Bowl Refractors are designed for units mounted either over the center of the street or at the side. They direct most of the upward light into the lower hemisphere and concentrate the maximum candlepower at an angle of from 10 to 20° below the horizontal.

Available with outer section either ruby or amber, to be used as signal indications for fire alarm or police.

B-Sym-Etric and C-Way Bowl Refractors are designed for units mounted at the side of the roadway. The 11-inch refractors accommodate a 10,000-lumen lamp and are used on wide highways and boulevards where a distribution is desired that will direct light across a wide roadway.

Curves show light distribution and utilization from a Form 52 Novalux pendent luminaire with the new C-Way bowl refractor.

Form 45-H4 Novalux Suspension Luminaires

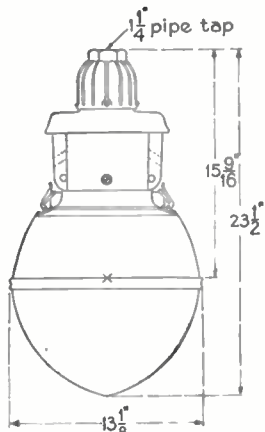
With Wet-Process Porcelain Insulator for Use on All Series Circuits



With Dome Shading Reflector



With No. 166 Globe



Dimensions

Form 45-L G-E Novalux Suspension Luminaires

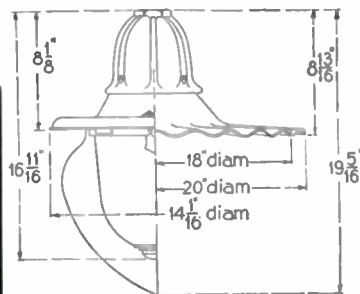
For Multiple or Low Voltage Series Circuits

Internally Wired Luminaires

With Radial-Wave Reflectors—Galvanized Hoods



With Dome Reflector



Dimensions

These luminaires are designed for use on all multiple circuits and on series circuits up to 5000 volts. The cast hoods can be furnished either internally wired or externally wired. Externally wired luminaires will be furnished upon request. On all multiple luminaires the socket is mounted on an adjustable support so that the light center can easily be set to give the best distribution for various sizes of lamps. The Form 45-L is most suitable for series circuits using Type 11, transformers. For maximum safety on circuits over 1500 volts, an insulator type of luminaire such as the Form 72 or Form 45-H4 is recommended.

Form 45-L may be obtained with cast reflectors and a variety of globes and refractors. The globe or refractor holder is of die-cast aluminum with large gaskets of best quality felt. The fact that the cast holder will not warp or sag insures a good seal against the entrance of dust. A spring latch and rigid hinge are provided to facilitate relamping. This construction allows relamping from the street with the aid of a lamp remover. The hinge construction allows the globe and holder to be lifted from the reflector without removing hinge or cotter pins. For cleaning or globe replacement, this feature will save much time. The green paint finish hoods are available at the same price as galvanized hoods.

Form 45-H4 is a wet-process porcelain insulator luminaire, applicable to utilitarian lighting. The insulator, supported by a small cast iron hood, is equipped with porcelain tie lugs to take the strain off lead-in wires before they enter the porcelain and fasten to the binding post. It is standard for external wiring. This luminaire may be used with standard radial wave reflectors, with cast iron reflectors and various dome or bowl reflectors, or with the Alzak shallow bowl reflector similar to that used on the Form 79 luminaire.

Based on A. I. E. E. standard wet test, static leakage starts at 16 KV with flashover at 32 KV. This provides protection on high voltage circuits and restricts radio and telephone interference. All parts are gaged and finished accurately so the replacement parts will fit readily. All screws are Everdur, all current carrying parts are nickel plated. The most modern type of reflector to use with this luminaire is the Alzak shallow bowl reflector with a "spun-sealed" C-Sym-Etric refractor. The general characteristics of this luminaire are given in the description of the Form 79 luminaire.

With Radial Wave Reflectors

Type of Reflector	Reflector Finish	Lamp Size Lumens	*No.	Net Ship. *GO-51 Each	Wt. Lb.	Wt. Lb.
20-In. Flat	{ Fire Enamel Alzak Al	1000	3732040G245	\$18.55	16	20
			3732040G320	19.15	13	18
20-In. Dome	{ Fire Enamel Alzak Al	1000	1229474G257	19.05	17	21
			3732040G321	19.65	14	18
20-In. Deep Dome	{ Fire Enamel Alzak Al	2500 to 6000	1229474G344	19.25	17	21
			3732040G322	19.85	14	18
20-In. Dome Shading	{ Fire Enamel Alzak Al	1000	3732040G251	20.55	17	22
			3732040G323	21.15	14	18
20-In. Deep Dome Shading	{ Fire Enamel	2500 to 6000	3732040G257	20.75	17	21

With Alzak Shallow Bowl Reflector

Form No.	Glassware	Lamp Size Lumens	*No.	Net Ship. *GO-51 Each	Wt. Lb.	Wt. Lb.
45H4S	No. 205 Clear Globe	2500	3791608G20	\$33.20	19	30
45H4D	No. 205 Clear Globe and Deflectors		3791608G23	42.20	20	30
45H4R	C-Sym-Etric Refractor		3791608G32	43.45	23	33

For Multiple Circuits

Type of Reflector	Reflector Finish	Lamp Size Watts	*No.	Net Ship. *GO-51 Each	Wt. Lb.	Wt. Lb.
20-In. Flat	{ Fire Enamel Alzak Al	100	3732041G426	\$10.80	9	11
			to 3732041G428	11.40	6	8
18-In. Dome	Fire Enamel	150	15X65	10.80	9	10
20-In. Dome	{ Fire Enamel Alzak Al	100	to 15X68	11.30	10	11
			200	3732041G430	11.90	6	8
20-In. Deep Dome	{ Fire Enamel Alzak Al	300	3732041G431	11.70	10	12
			3732041G433	12.30	7	9
20-In. Dome Shading	{ Fire Enamel Alzak Al	100	to 3732041G435	12.30	10	12
			200	3732041G437	13.40	6	8
20-In. Deep Dome Shading	Fire Enamel	300	3732041G439	13.20	10	12

For Series Circuits

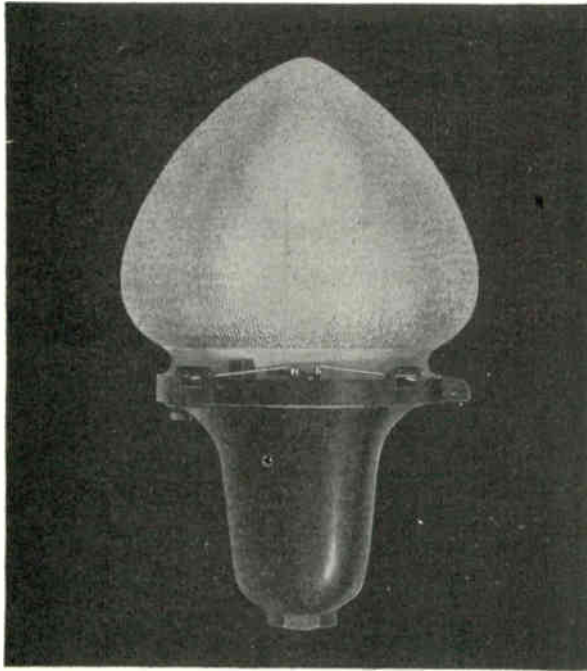
Type of Reflector	Reflector Finish	Lamp Size Lumens	*No.	Net Ship. *GO-51 Each	Wt. Lb.	Wt. Lb.
20-In. Dome	{ Fire Enamel Alzak Al	1000	15X50	\$13.20	11	13
			3732041G424	13.80	8	10

External wiring:
For the multiple luminaires, add \$2.00 each to list price.
For series luminaires, add \$3.00 each to list price.

*Nos. and prices do not include Mazda lamps.

Form 54 G-E Novalux Outdoor Substation Luminaires

For Use on Multiple Circuit



With No. 166 Light Alabaster Rippled Globe

Globe holder will not freeze, thereby permitting relamping during emergency in any weather.

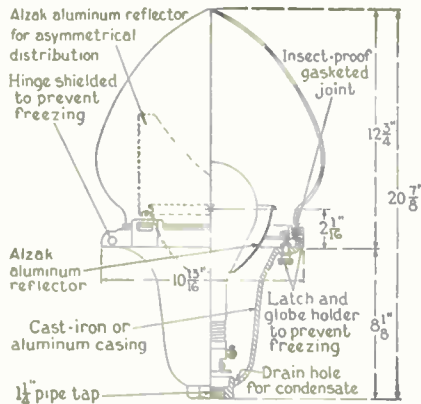
Excellent external appearance, which blends well with substation structures.

Lamps rated as high as 500 watts may be used in this unit.

High utilization of light due to special design Alzak finished aluminum reflector.

Symmetrical distribution for locations in center of area. Asymmetrical distribution for location at sides of area.

Alabaster rippled globe creates large secondary light source, thereby reducing glare, particularly to workmen on substation structure.



Symmetrical Distribution

*No.	*GO-51 Each	Material	Finish	Approx. Net Wt. Lb.	Approx. Ship. Wt. Lb.
3791553G5	\$33.85	Cast Iron	Green Painted	14	29
3791553G6	33.85	Cast Iron	Galvanized	14	29
3791553G7	41.55	Aluminum	No Finish	6	21

Asymmetrical Distribution

3791553G8	\$35.10	Cast Iron	Green Painted	14	29
3791553G9	35.10	Cast Iron	Galvanized	14	29
3791553G10	42.80	Aluminum	No Finish	6	21

Form 72 G-E Novalux Suspension Luminaires

For Use on All Series Circuits



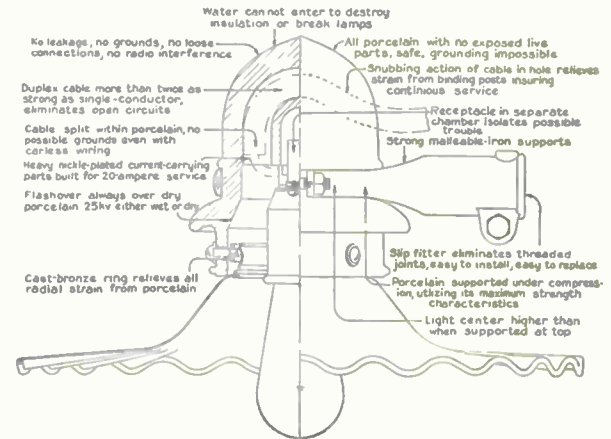
With Dome Shading Radial-Wave Reflector



With Shallow Bowl Alzak and No. 205 Globe or Refractor

The Form 72 Novalux Suspension Luminaire differs from the conventional insulator in that it is supported under compression by a clamp around the middle of the insulator. Porcelain, being weak in tension but very strong in compression, will by this method of support better resist breakage. Short circuits and grounds are avoided on the Form 72 because of the strong 2-conductor cable, the large radius of bend, and the snubbing action of the cable in its channel which relieves strain on the binding post. The cable enters a long porcelain channel and is split well within so there is no chance of grounding against the metal hoods or pipes through careless installation.

In addition to all types of radial wave reflectors, this will support cast reflectors and Alzak shallow-bowl reflectors with "spun-sealed" globe or refractor of Form 79 type. Form 79-R is recommended for most installations.



With Radial-Wave Reflectors

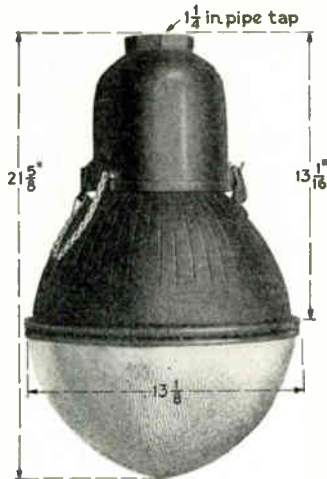
Type of Reflector	Reflector Finish	Lamp Size Lumens	*No.	*GO-51 Each	Net Ship. Wt. Lb.	Net Ship. Wt. Lb.
20-In. Flat	{ Fire Enam. Alzak A1	1000	3791583G2	\$21.05	20	25
18-In. Dome	{ Fire Enam.		3791583G4	21.05	20	25
20-In. Dome	{ Fire Enam. Alzak A1	2500 to 6000	3791583G6	21.55	21	25
20-In. Deep Dome	{ Fire Enam. Alzak A1		3791583G8	21.75	21	26
20-In. Dome Shading	{ Fire Enam. Alzak A1	1000	3791583G14	23.05	21	27
20-In. Deep Dome Shading	{ Fire Enam. Alzak A1		3791583G72	23.65	17	23
20-In. Deep Dome Shading	{ Fire Enam. Alzak A1	2500 to 6000	3791583G16	23.25	21	26
20-In. Deep Dome Shading	{ Fire Enam. Alzak A1		3791583G87	23.85	17	23

With Alzak Shallow-Bowl Reflectors

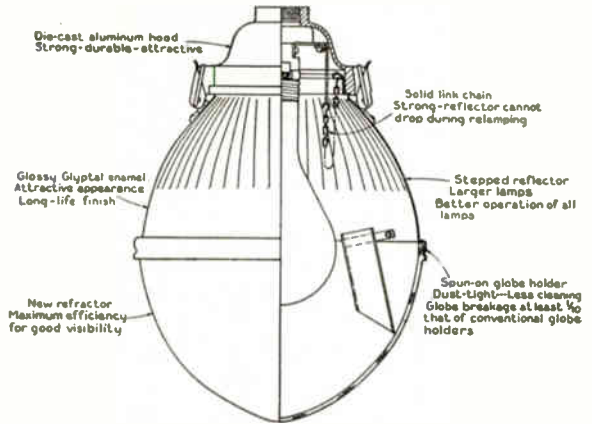
Form No.	Glassware	Lamp Size Lumens	*No.	*GO-51 Each	Net Ship. Wt. Lb.	Net Ship. Wt. Lb.
72S	No. 205 Clear Globe	2500 to 10000	3791603G1	\$35.70	23	35
72D	No. 205 Clear Globe and Deflectors		3791603G2	44.70	23	35
72R	Holophane B-way Refractor		3791603G14	45.95	26	38

*Nos. and prices do not include Mazda lamps.

Form 79 G-E Novalux Suspension Luminaires



Series Type



Form 79 Novalux Suspension Luminaire is General Electric's most modern and highly efficient luminaire for street and highway lighting and is also an excellent luminaire for general road and yard lighting within industrial plants. Light source is shielded from view so that glare is greatly reduced and accurately formed Alzak deflector directs upward light downward on roadway with high efficiency.

For applications requiring a symmetrical distribution of light from the luminaire, the Form 79-S is recommended. For other applications where more light is required on the street side than on the house side, A-symmetrical type of distribution is necessary and may be provided by either Form 79-D or Form 79-R. The latter uses a highly efficient refractor and is most effective in increasing the utilization of light on the road surface as shown in illustration showing Effective Lumens on Road Surface. Form 79-D uses a polished Alzak deflector in order to obtain the A-symmetrical distribution.

One of the most unusual construction features of the Form 79 is the "spun-sealed" globe holder. The globe is held to the reflector by simply spinning the sheet aluminum reflector over beads around outer surface of globe. This insures a permanent dust-tight fit between the reflector and globe, eliminating gasketing troubles, and also results in a great reduction of glassware, the average replacement being only 15% as great as with ordinary detachable glassware.

The new stepped reflector relieves a serious lamp stem heating problem. When smooth reflectors are used with lamps larger than 300 watts or 6000 lumens, they frequently fail prematurely because of the concentration of radiant energy and absorption of heat in the lamp stem. Form 79 reflector has 48 vertical steps which direct this radiant energy slightly to one side of the lamp stem and eliminate this troublesome localized heating problem.

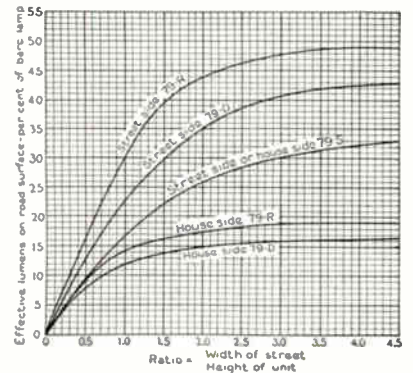
Reflector and hood may be obtained either with natural aluminum finish or with glossy Glyptal enamel finish. Hoods may be obtained with gland bushings for 2-conductor

cable externally wired, or with a slip-fitter mounting for straight pipe brackets. Form 79 may also be obtained with an adapter for standard radial-wave reflectors.

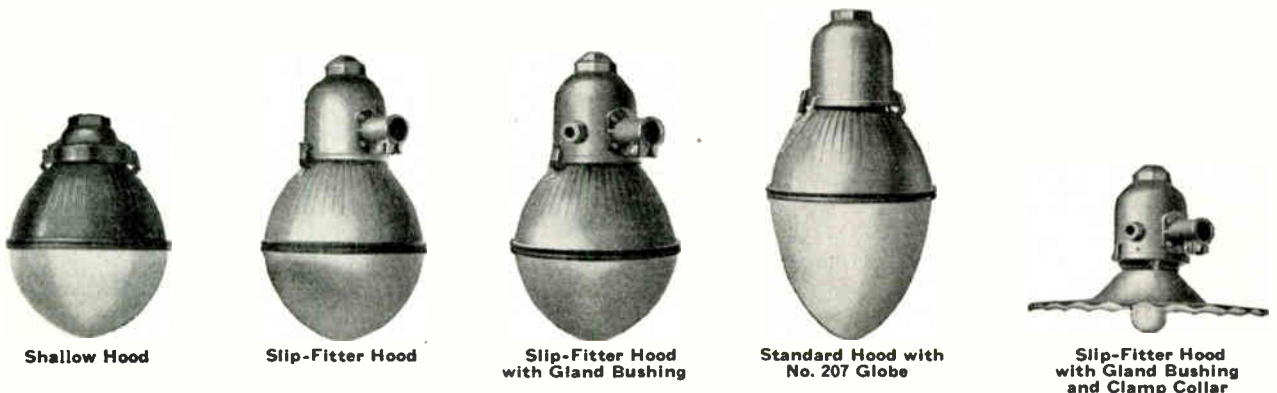
If a large globe is desired for more ornamental appearance, it can be furnished at no extra cost. All globes for the Form 79 have a rippled outer surface which gives the luminaire more life and a better appearance both during the day and at night. All globes are now made of pressed glass rather than blown glass. These are heavier, exactly uniform, and have a smooth, resisting rim which results in longer globe life.

When a Form 79 globe has been broken, the reflector is returned and exchanged for a newly reconditioned reflector with globe attached. This method of handling not only protects the globe but provides the luminaire with the equivalent of a new reflector which in many cases has been improved over the reflector originally furnished. Experience has shown that when globes become broken the reflector may also be damaged. In many cases it is possible to exchange this for a reconditioned one when otherwise it would have been necessary to discard it.

Two types of hinged globe holders are also available for the Form 79. The roller-latch type may be relamped from the ground with a lamp remover, while the C-clamp type is serviced from the pole. Both types use cast globe holders to insure tightness and long life.



Effective Lumens on Road Surface



Shallow Hood

Slip-Fitter Hood

Slip-Fitter Hood with Gland Bushing

Standard Hood with No. 207 Globe

Slip-Fitter Hood with Gland Bushing and Clamp Collar

**Form 79 Novalux Suspension Luminaires
With Spun-Sealed Globes**

For Operation on Multiple or Series Circuits up to 5000 Volts

Standard finish is dark green. Luminaires with natural aluminum finish available at same price.

Ornaments for any Form 79 luminaires can be furnished, add \$10.50 list.

Luminaires with detachable globe holders are available with slip-fitter hood, external wiring (gland bushing), and high-voltage receptacle. For roller-latch-type globe holder, add \$2.00 list.

No. 207 globe is available on either Form 79S or Form 79D luminaires at no increase in price. Specify No. 207 globe with number.

Light alabaster rippled globes available but not recommended. Order by specifying L.A.R. globe with no., add \$1.00 each list.

Form 79 with 2-inch pipe tap available at no extra charge.

All globes are furnished clear rippled.

Nos. and prices do not include Mazda lamps.

***Multiple Circuit Luminaires**

Spun-Sealed Globe Holder

Description	Symmetrical Distribution Form 79S		Asymmetrical Distribution Form 79D		C-Sym-Etric Distribution Form 79R	
	No.	GO-51 Each	No.	GO-51 Each	No.	GO-51 Each
For Internal Wiring, 1¼-Inch Pipe Tap Hood.....	A4G22	\$26.05	A4G23	\$35.05	A4G24	\$36.30
For Internal Wiring, Slip-Fitter Hood.....	A4G16	28.55	A4G17	37.55	A4G18	38.80
†For External Wiring, 1¼ Inch Pipe Tap Hood.....	A4G19	28.05	A4G20	37.05	A4G21	38.30
†For External Wiring, Slip-Fitter Hood.....	A4G13	30.55	A4G14	39.55	A4G15	40.80
For Internal Wiring, 1¼-Inch Pipe Tap Hood, No. 207 Globe..	A4G69	26.05	A4G70	35.05	.....	.....

C-Clamp Hinged Globe Holder

For Internal Wiring, 1¼-Inch Pipe Top Hood.....	A4G51	\$26.05	A4G52	\$35.05	A4G53	\$36.30
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Ball-Type Globe Holder

For Internal Wiring, 1¼-Inch Pipe Tap Hood.....	A4G66	\$26.05	A4G67	\$35.05	A4G68	\$36.30
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Roller Snap-Latch Hinged Globe Holder

For Internal Wiring, 1¼-Inch Pipe Tap Hood.....	A4G57	\$28.05	A4G58	\$37.05	A4G59	\$38.30
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Series Circuit Luminaires

Spun-Sealed Globe Holder

For Internal Wiring, 1¼-Inch Pipe Tap Hood.....	A4G10	\$27.75	A4G11	\$36.75	A4G12	\$38.00
†For Internal Wiring, 1¼-Inch Pipe Tap Hood, High Voltage...	A4G34	29.25	A4G35	38.25	A4G36	39.50
For Internal Wiring, Slip-Fitter Hood.....	A4G4	30.25	A4G5	39.25	A4G6	40.50
†For Internal Wiring, Slip-Fitter Hood, High Voltage.....	A4G28	31.75	A4G29	40.75	A4G30	42.00
†For External Wiring, 1¼-Inch Pipe Tap Hood.....	A4G7	29.75	A4G8	38.75	A4G9	40.00
††For External Wiring, 1¼-Inch Pipe Tap Hood, High Voltage..	A4G31	31.25	A4G32	40.25	A4G33	41.50
†For External Wiring, Slip-Fitter Hood.....	A4G1	32.25	A4G2	41.25	A4G3	42.50
††For External Wiring, Slip-Fitter Hood, High Voltage.....	A4G25	33.75	A4G26	42.75	A4G27	44.00
For Internal Wiring, 1¼-Inch Pipe Tap Hood, No. 207 Globe..	A4G71	27.75	A4G72	36.75	.....	.....

C-Clamp Hinged Globe Holder

For Internal Wiring, 1¼-Inch Pipe Tap Hood.....	A4G54	\$27.75	A4G55	\$36.75	A4G56	\$38.00
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Ball-Type Globe Holder

For Internal Wiring, 1¼-Inch Pipe Tap Hood.....	A4G63	\$27.75	A4G64	\$36.75	A4G65	\$38.00
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Roller Snap-Latch Hinged Globe Holder

For Internal Wiring, 1¼-Inch Pipe Tap Hood.....	A4G60	\$29.75	A4G61	\$38.75	A4G62	\$40.00
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Replacement Spun-Sealed Reflectors

New Reflector and Globe No. 205.....	5556810G1	\$18.55	5556810G5	\$27.55	5556810G6	\$28.80
**Reconditioned Reflector and Globe No. 205.....	96X11	7.25	96X12	7.25	96X13	16.00

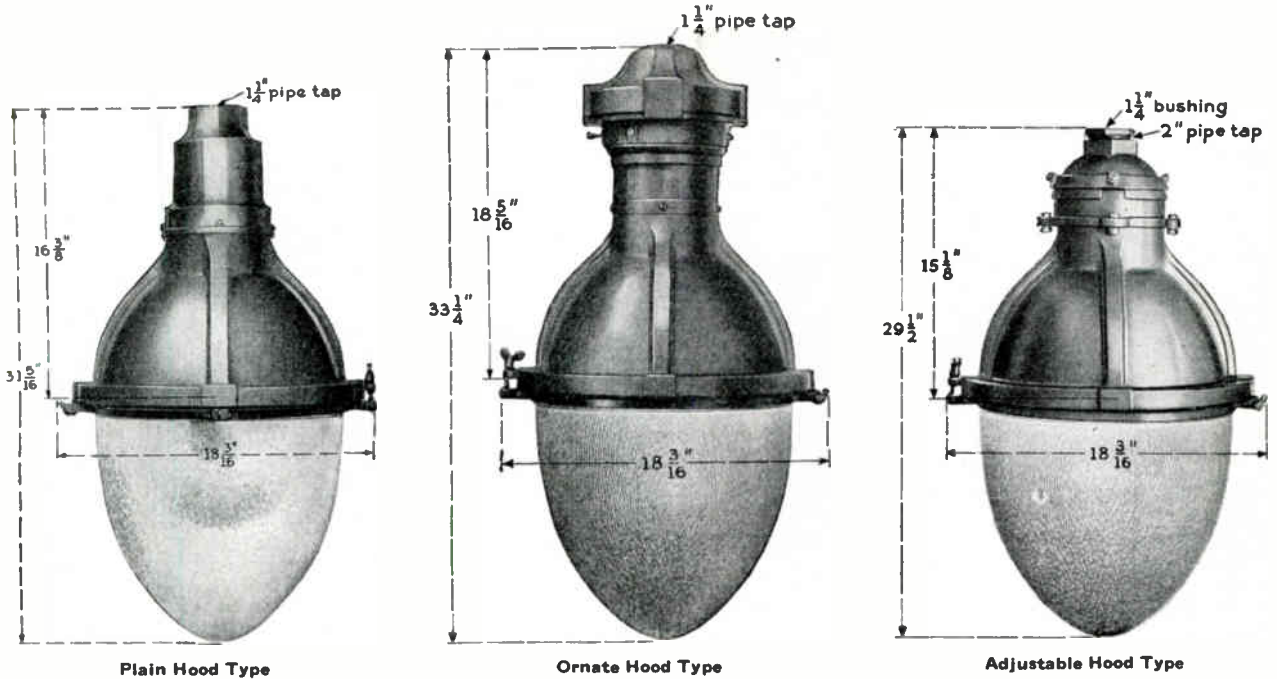
*Equipped with Mogul multiple sockets. Series type recommended for Type IL transformer operation.

†Gland type bushing for externally wired two-conductor or two single-conductor cable. Specify size of wire and outside diameter when ordering.

††High-voltage series-type furnished complete with No. 5556568G2 wet-process porcelain receptacle. Rated 25 kv. flashover when properly wired.

**Reconditioned reflector and new globe or refractor can be purchased at the price shown, after receipt transportation prepaid, in the nearest G-E warehouse of a reflector, or reflector and deflectors, in usable condition, on which the globe or refractor has been broken. Usable condition will be interpreted as any reflector which is not smashed out of shape and which does not have a hole through it.

Forms 81-S and 81-D G-E Novalux Suspension Luminaires



Form 81-S luminaire embodies the well-known efficient light characteristics of the Form 79-S in an ornate design applicable to lighting better streets.

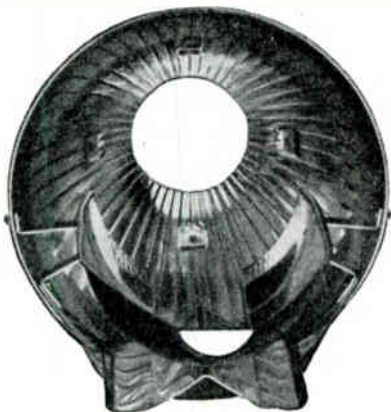
Form 81-D incorporates the Form 81-S reflector with the addition of accurately designed die-formed deflectors to redirect a large portion of the house side light onto the

roadway. An examination of the curve of utilization efficiency will show the high utilization obtained from the Form 81-D. It is recommended for all applications except at isolated intersections or special applications requiring a symmetrical distribution.

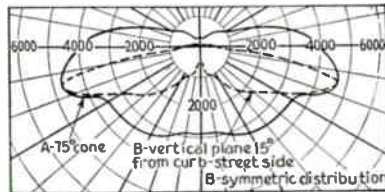
Form 81-S has symmetrical type of distribution; Form 81-D, asymmetrical type of distribution.

For addition of flexible suspension, add \$5.00 list. Order No. 4865747G1.

For autotransformer type order similar multiple ornate-hood type except with autotransformer. Add \$4.00 list to multiple price for insulator plus part price of transformer. The 15,000-lumen autotransformer luminaire has an extended casing $2\frac{1}{2}$ inches longer than standard.



Internal View of Form 81-D Reflector and Deflector



Form 81-D Distribution Curve in Max. Vertical Plane and 75° Cone with 15,000-Lumen Lamp

Ornate-Hood Type with No. 193 Clear Rippled Globe

Form No.	Multiple Watts	LAMP SIZE		Series Lumens	*No.	*GO-51 Each	APPROX. Wt. Lb. Net Ship.
		IL Transformer Lumens	†Type				
81-S	.....	.....	.....	4000 to 15,000	A3G1	\$70.25	26 38
81-S	300 to 500	4000 to 15,000	.....	.....	A3G2	68.55	24 36
81-S	750 to 1500	.....	.....	.....	A3G8	68.55	24 36
81-D	.....	.....	.....	4000 to 15,000	A3G13	79.25	27 39
81-D	300 to 500	4000 to 15,000	.....	.....	A3G14	77.55	25 37

Rigid Suspension Type with No. 193 Clear Rippled Globe

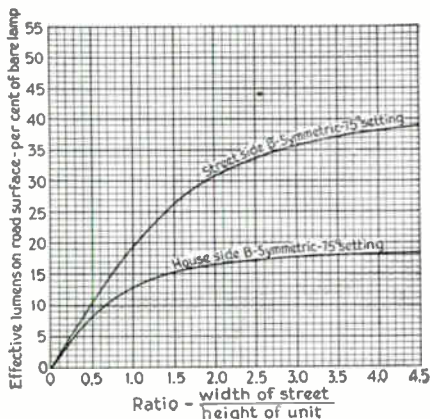
81-S	.....	.....	.....	4000 to 15,000	A3G51	\$58.75	13 21
81-S	300 to 500	4000 to 15,000	.....	.....	A3G52	57.05	11 19
81-S	750 to 1500	.....	.....	.....	A3G58	57.05	11 19
81-D	.....	.....	.....	4000 to 15,000	A3G67	67.75	14 22
81-D	300 to 500	4000 to 15,000	.....	.....	A3G68	66.05	12 20

Adjustable-Hood Type with No. 193 Clear Rippled Globe

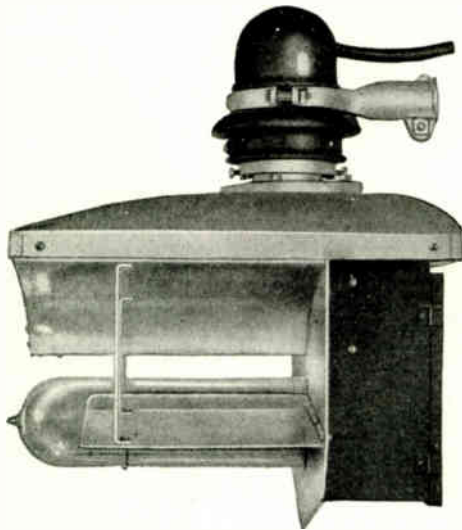
81-S	.....	.....	.....	4000 to 15,000	A3G81	\$63.75	17 25
81-S	300 to 500	4000 to 15,000	.....	.....	A3G82	62.05	15 25
81-S	750 to 1500	.....	.....	.....	A3G86	62.05	15 25
81-D	.....	.....	.....	4000 to 15,000	A3G87	72.75	18 26
81-D	300 to 500	4000 to 15,000	.....	.....	A3G88	71.05	16 26

*Nos. and prices do not include Mazda lamps.

†Equipped with Mogul multiple sockets. Series type recommended for Type II, transformer operation.



Type M-2 G-E Novalux Sodium Luminaires



Straight Series Luminaire with Form 72 Insulator for Externally Wired Bracket

This luminaire is used for lighting the highways, urban and rural traffic arteries, bridges, intersections, traffic circles, grade crossings, underpasses and industrial yards. It operates from either standard a.c. multiple or constant-current series circuit.

The reflectors are polished Alzak finished aluminum with a dichromate finish and methacrylate lacquer seal to give them longer life and maintain initial efficiency.

Auxiliary equipment for operating the luminaire is self-contained and includes a complete radio-interference suppressor. Lamp and vacuum flask are held securely but can be removed easily. Flask breakage is negligible because the lamp can be replaced without moving the flask.

Description	No.	APPROX. OPERATING DATA FOR 60-CYCLE UNIT			
		Volts	Amp.	Watts	P-f
Series IL—Transformer Type	A80G11	35.1	6.6	220	...
Straight Series, for Internally Wired Bracket.....	A80G12	31.4	6.6	195	...
Straight Series, for Externally Wired Bracket (Form 72 Insulator).....	A80G13	31.4	6.6	195	...
Multiple, Normal P-f.....	A80G14	115	5.2	255	.43
Multiple, Normal P-f and Balanced Suspension.....	A80G16	115	5.2	255	.43
Multiple, High P-f.....	A80G15	115	2.6	260	.87

Catalog numbers do not include lamps or vacuum flasks.

Use Type NA-9 10,000-lumen lamp and No. 71G flask.

Series IL luminaires include transformer. Specify either pole base or aerial type.

Multiple and transformer series luminaires for externally wired brackets will require cable inlet No. 4830380P1. Furnished at extra charge.

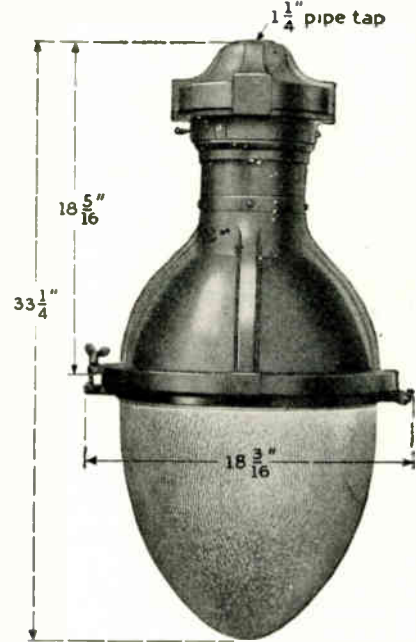
For locations involving severe traffic vibration, order similar to standard except with spring suspension hanger. Hanger is similar to No. 37X716. Furnished at extra charge.

Straight series luminaires are for 6.6-ampere circuits only, conforming to lamp current rating.

G-E Novalux Sodium Luminaires

Forms 81-S and 81-D

With No. 193 Clear Rippled Globe



Ornamental suspension sodium luminaires are used where amber sodium lights promote safety and where an enclosing globe is more important than is maximum utilization of light as obtained by the Form M-2. The housing, globe holder, and plain hood are made of die-cast aluminum, dark green enameled finish. The ornate hood type is similar except that the larger hood is made of cast iron. All auxiliary equipment for the operation of the lamp is mounted as a compact unit in the hood.

The Form 81-S has a symmetrical distribution of light; Form 81-D uses deflectors to obtain an a-symmetrical distribution. By using an extended casing on the ornate hood type, a multiple transformer may be self-contained within the luminaire hood. For other multiple and IL luminaires, a separate transformer is required; either aerial type or pole base type should be specified.

Plain Hood Type

Form No.	Circuit	No.	Rating
81-S	IL	A3G71	6.6 A.
81-S	Multiple	A3G72	115 V.
81-D	IL	A3G73	6.6 A.
81-D	Multiple	A3G74	115 V.

Ornate Hood Type

81-S	Series	A3G11	6.6 A.
81-S	IL	A3G20	6.6 A.
81-S	Multiple	A3G22	115 V.
81-S	*Multiple	A3G18	115 V.
81-D	Series	A3G12	6.6 A.
81-D	IL	A3G21	6.6 A.
81-D	Multiple	A3G23	115 V.
81-D	*Multiple	A3G19	115 V.

*Multiple luminaire with internal transformer. Use Type NA-9 10,000-lumen lamp and No. 70G flask. 50-cycle units available at same price.

G-E Novalux Mercury-Incandescent Luminaires

For Street Lighting



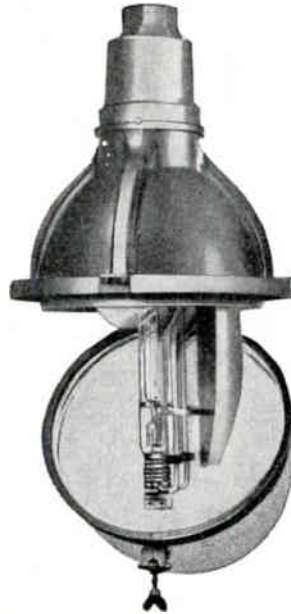
Form 12 Luminaire with No. 124 Globe, No. 1124 Canopy, External Ornamental Ribs



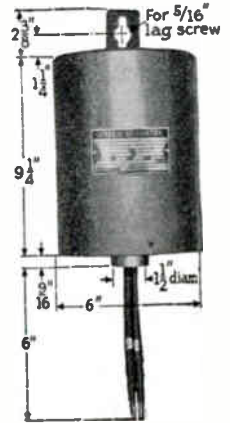
Arrangement of Lamps in Form 12 Luminaire



Form 79 Mercury Luminaire



Arrangement of Lamps in Mercury Incandescent Form 81-D Plain-Hood Type Luminaire



Type ILH High-Power-Factor Ballast Unit, Aerial Type

For large luminaires the Type H-1 400-watt lamp is recommended. It may be used alone or with incandescent lamps. The more incandescent light used, the more nearly natural the combined color becomes. Luminaires which are equipped with an incandescent lamp wattage ranging from one-half to equal the mercury lamp wattage are considered to have good color correction. Lamps are arranged so that the light is thoroughly blended and the output is a homogeneous color, rather than two dissimilar colors. The entire globe is filled with a uniformity of light and the lamps themselves are not visible.

Incandescent lamps dissipate heat which aids in starting the mercury lamp in cold weather. Incandescent lamps light immediately following a power outage and provide light for safety while the mercury lamp is cooling off and relighting.

For lighting primary business streets, several hundred Form 12 luminaires have recently been used. This luminaire is well suited for mercury-incandescent lighting, although other upright ornamental luminaires may be so arranged.

The new pendent mercury-incandescent luminaire can also be used on primary business streets, and it has a much higher efficiency of utilization than the upright type of luminaire. Form 81-D is equipped with deflectors which make possible an asymmetrical distribution of mercury light. This results in more economical mercury-incandescent lighting for distinctive traffic thoroughfares.

Form 79-R mercury luminaire incorporates several new departures in mercury lighting. In the past it has been difficult to take full advantage of the high efficiency of light generation which mercury lamps offer, because of the difficulties in distributing the light with high efficiency. The new Type H-4 100-watt lamp is used with a refractor and a stepped reflector which results in an exceptionally high utilization of light. The small light source of the H-4

lamp is ideally suited for use with refractors, but when the old smooth type of reflector is used, highest efficiency is not possible. This is because light is reflected into the mercury arc and absorbed. The new stepped reflector directs the light slightly to one side of the light source, without absorption. Utilization is higher than with an incandescent lamp. This luminaire is excellent for low-level illumination of secondary streets where ordinary 2500-lumen lamps are now used.

Current in a mercury lamp tends to increase as voltage decreases. A suitable ballast is required with such lamps to prevent them from "running away." In the past this ballast has been supplied by means of specially designed reactors or transformers. They have not proved entirely satisfactory on larger lamps because fluctuations of more than 10% in line voltage extinguish the lamp. Such outages lasted for about 15 minutes before the lamp cooled sufficiently to restart. Unless corrected, the power-factor of such ballast was quite low.

A new high-power-factor ballast removes all the objections which previous ballasting methods had, and in addition has many new operating advantages. Momentary dips of 30% in primary voltage do not extinguish the arc. It has a power-factor of .91. Normal power-factor transformers or reactors had a power-factor of .67. Starting current when using this ballast is less than operating current. Ordinary high-power-factor reactors take twice as much, and normal-power-factor types three times as much starting current as this new ballast. High inrush current frequently blows fuses unnecessarily, causing delays and costly maintenance which cannot occur with the new Type ILH high-power-factor ballast. The Type ILH ballast is smaller, lighter in weight, has one-third less electrical losses, and operates over a wide range of voltages without taps.



Type H-4, 100 Watts 3500 Lumens



Type H-5, 250 Watts 10,000 Lumens



Type H-2, 250 Watts 7500 Lumens



Type H-1, 400 Watts 16,000 Lumens

G-E Pole Type RO Novalux Constant-Current Transformers

For 6.6-Ampere Series Lighting Loads
2400 Volts (with 2150-Volt Tap)—60 Cycles



The Type RO is a constant current transformer which operates automatically. It can be mounted on poles in remote districts or where subdivided downtown lighting circuits are desired. It can be controlled by Novalux controllers and time switch, or photoelectric relay.

Built in sizes ranging from 1 to 30 kw., to operate at any commercial primary voltage and frequency or secondary current, but the standard transformer is for 60 cycles, 2400 volts on the primary and 6.6 amperes on the secondary. The 2400-volt transformer will operate satisfactorily on from 2300 to 2500 volts and a tap is provided on the primary for operation at 2150 volts without reduction of output.

These features are combined with the same current regulation through as wide a range as offered by the best station-type-constant-current transformer. This feature alone practically guarantees the normal life of the Mazda lamps operating on a circuit controlled by such a transformer. The efficiency is almost the same as for the station-type transformer and the primary power-factor is 75% at maximum load.

The high internal reactance of the transformer serves to protect the lamps at starting and acts instantaneously to check surges on the line which would otherwise tend to shorten the life of the lamps.

The moving secondary coil with its high repulsion gives almost perfect regulation from full load to dead short circuit. This feature not only protects the lamps from changes in current, because of changes in secondary load, but also protects the lamps from fluctuations in primary voltage.

Prices include oil.

Lightning arresters must be used on transformers on both primary and secondary for protection.

Cat. No.	GO-51 Each	No. Gal. Oil	Normal Kw. Rating	Primary	Trans.	Normal	Second-	*APPROX.	
				Amp. at Any Load	Kva Input at Any Load	Secondary Load Volts	ary Open Circuit Volts	Wt. Lb. Less Oil and Hanger Hooks	Net
3225403	\$630	33	3	1.86	4.47	454	660	375	300
3225404	680	33	5	3.05	7.32	757	1080	425	345
3201455	720	40	7.5	4.52	10.84	1137	1600	505	420
3201456	800	40	10	5.90	14.26	1515	2090	555	470
3201457	920	65	15	8.72	20.90	2272	3090	775	630
3201458	1060	65	20	11.60	27.80	3030	4115	850	715
3201459	1230	85	25	14.40	34.60	3787	5110	1100	965
3201460	1360	90	30	17.30	41.50	4545	6130	1350	1200

*Add 7 pounds per gallon of oil.

For special voltages other than 2300, information upon application. For special frequency (25, 30, or 40 cycles), add 30% to list.

For 50 cycles, use 60-cycle prices.

For special frequency and special voltage, information upon application. For special secondary current only (from 5.5 to 20 amperes) use 6.6-ampere prices.

Similar transformers available with built-in power-factor correction are available—Type ROC. Information on request.

Hanger Hooks

For Transformers . . . kw.	1, 2, 3, 5	7.5, 10	15, 20	25, 30
Weight per Pair . . . lb.	30	40	50	60

G-E Subway Type RO Novalux Constant-Current Transformers

For A.C. 6.6-Ampere Series Lighting Circuits
Single-Circuit Secondaries



A constant-current transformer designed to operate automatically and be mounted in subways or manholes. It can be controlled by Novalux controllers or by any of the present methods of remote control.

Since poles carrying circuits overhead are being removed from many of the city streets, it was found desirable to use some type of transformer which could be mounted underground and thereby connected directly to the underground feeder circuits and to the underground street lighting circuits. This requirement resulted in the development of a subway Type RO transformer.

This transformer is almost identical with the pole type, except that it is enclosed in a specially designed cast iron waterproof tank. It is necessary on the 25 and 30-kw. size subway transformer to construct it in a double-deck type, because of the necessity for the transformers to be narrow enough to be lowered and installed in a manhole, the cover of which is only 32 inches in diameter, maximum. The four leads are each brought out at a separate terminal. Single deck 25 and 30-kw. transformers are also available.

Subway transformers are equipped with oil indicating plugs installed in the tanks to indicate the oil level without requiring the removal of the cover. The tanks should be filled with the top oil plug open until the oil runs out and then the plug should be closed. To test for oil level at any time the lower indicating plug should be opened. In case the oil does not flow out, this plug should be closed again and the top plug opened, additional oil being poured in until it flows therefrom. The plug should then be closed again.

If the primary circuit leads into the subway from overhead, pole-type cutouts can be used. If, however, the primary circuit is entirely underground, the D and W subway fuse cutouts must be used.

Prices include oil and hanger hooks.

No.	GO-51 Each	No. Gal. Oil	Normal Kw. Rating	Primary	Trans.	Normal	Second-	*APPROX.	
				Amp. at Any Load	Kva Input at Any Load	Secondary Load Volts	ary Open Circuit Volts	Wt. Lb. Less Oil and Hanger Hooks	Net
3225483	\$940	20	3	1.86	4.47	454	660	375	300
3225484	980	50	5	3.05	7.32	757	1080	425	345
3201465	1010	50	7.5	4.52	10.84	1137	1600	505	420
3201466	1070	50	10	5.90	14.26	1515	2090	555	470
3201467	1250	65	15	8.72	20.90	2272	3090	775	630
3201468	1500	65	20	11.60	27.80	3030	4115	850	715
(A) 3201469	1710	95	25	14.40	34.60	3787	5110	1100	965
(A) 3201470	1830	90	30	17.30	41.50	4545	6130	1350	1200
(B) 3201471	1710	95	25	14.40	34.60	3787	5110	1100	965
(B) 3201472	1830	95	30	17.30	41.50	4545	6130	1350	1200

*Add 7 pounds per gallon of oil.

(A) Single deck. (B) Double Deck.

Primary 2400 volts with tap for 2150 volts.

For special voltages other than 2300, information upon application.

For special frequency only (25, 30 or 40 cycles), add 30% to list.

For 50 cycles, use 60-cycle prices.

For special frequency and special voltage, information upon application. For special secondary current only (5.5 to 20 amperes) use 6.6-ampere prices.

Fuses and cutouts not included in number or price.

Lightning arresters must be used on all transformers for protection, if supply and load circuits are not entirely underground.

G-E Automatic Station Type RF Novalux Constant-Current Transformers

For Operating A.C. 6.6-Ampere Series Lighting Loads

‡2400 Volts (No. Taps)—60 Cycles



Type RF with Band-Iron Casing

Designed for use in an unattended substation. Can be used for any indoor installation.

Built in practically any capacity and for any commercial voltage, frequency and secondary current, but it is recommended that, on account of the high secondary voltage, capacities not exceeding 20 kw. be operated with single-circuit secondary. Sizes from 40 kw. are furnished with multi-circuit secondary, and can be operated either single circuit or multicircuit.

Can be started up automatically with coil together and with only one lamp on circuit, regardless of capacity of transformer. Current surge not sufficient to destroy lamp.

Transformers are not provided with any taps, either for voltage or for partial load operation. Because constant voltage is maintained in the stations, no primary voltage tap is necessary. Because of high inherent reactance of transformers, if a partial load tap is furnished, operating characteristic will be impaired.

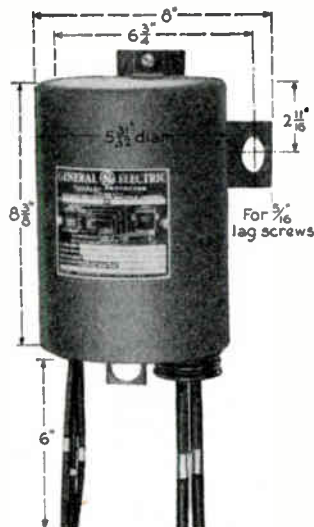
Equipped with protective low-loss band-iron casing. Balancing mechanism supported on ball bearings.

No.	Each	Normal Kw. Rating	Primary Amp. And Load	Trans. Kva Input	Secondary Load Volts	Secondary Open Circuit Voltage	APPROX. (Wt. Lb.) Net	Ship.
3201490	\$960.00	5	2.96	7.10	758	1050	400	600
3201491	1120.00	10	5.86	14.06	1515	2080	575	750
3201492	1260.00	15	8.75	21.00	2275	3100	750	950
3201493	1340.00	20	11.67	28.00	3030	4135	875	1100
3201494	1560.00	25	14.60	35.00	3790	5175	1050	1300
3201495	1720.00	30	17.30	41.50	4550	6140	1300	1650
*3201496	2180.00	40	23.33	56.00	6060	8275	1500	1850
*3201497	2480.00	50	29.20	70.30	7580	10350	1850	2200
*3201498	2700.00	60	34.50	82.80	9100	12250	2150	2550
*3201499	3080.00	70	40.30	96.70	10600	14300	2500	3000

*Built with multi-circuit secondary. Can be operated either single or multi-circuit.

†All of these transformers will operate from 2300 to 2500 volts. No primary voltage tap or partial load tap provided. No addition to list price for 80% load tap.

G-E Novalux Protectors



Pole Type for Multiple-Control Circuit

Open circuits in series street lighting systems are unavoidable especially on aerial circuits, and it is desirable from the standpoint of safety first, that when an open circuit does occur, the primary of the main transformer be de-energized. This Novalux protector has been developed to operate in conjunction with a CR-7841 Novalux controller, or similar control switch, and its function is to open up the switch in the controller as soon as an open circuit takes place.

The mechanism of the Novalux protector consists of two small transformers, a thermal switch, relay, set of disconnecting contacts, and a timing resistor. One of the two small transformers is energized by the control circuit and the other by the load circuit to be protected. Under normal operating conditions, the disconnecting contacts are closed on the multiple control type and on the series control type they are open.

When an open circuit occurs in the load circuit, the relay becomes de-energized, closes and completes a circuit so that the thermal switch will operate and open the disconnecting contacts on the multiple type (close on the series type) to de-energize the controller operating coil. This allows the controller contacts to open and de-energize the primary of the constant current transformer.

After the open circuit in the load circuit has been repaired, the protector can be reset (reconnecting the transformer to the main system) by means of a reset lever conveniently located in the bottom of the casing.

This protector operates entirely in air and is housed in an attractive drawn steel case. It is isothermic in function.

*No.	†GO-51 Each	Type of Control Circuit	‡CONTROL CIRCUIT	‡PROTECTED CIRCUIT	APPROX. Wt. Lb. Net Ship.
3208154	\$145.00	Multiple	120 V.	60 6.6 60	14 24
3208155	145.00	Multiple	120 V.	60 7.5 60	14 24
3208156	145.00	Series	*6.6 Amp.	60 6.6 60	54 68
3208157	145.00	Series	*6.6 Amp.	60 7.5 60	54 68
3208158	145.00	Series	*7.5 Amp.	60 7.5 60	54 68
3208159	145.00	Series	*7.5 Amp.	60 6.6 60	54 68

*Includes insulating transformer for control circuit.

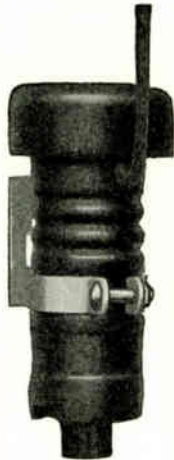
†For 50 cycles use same prices. For other frequencies, prices upon application.

‡Can be furnished for operation on other voltages, currents, or frequency, prices upon application.

G-E Pellet Lightning Arresters

For Types RO and ROC Constant-Current Transformers

Pole and Subway Type—Outdoor Service Only



Recommended for protection of both the primary and secondary sides of constant-current transformers.

Pellet arresters are single-pole, for outdoor use on both the constant potential side and the load side of constant-current transformers. Each design has a minimum and maximum voltage rating and under no circumstances should it be applied to a circuit the voltage of which can exceed the arrester's maximum rating as shown in the table. Where selection of arresters for the protection of the load side of the transformer is to be made, the arresters should never be applied to a transformer of a larger kilowatt rating than shown in the table.

For Protection of Primary Side of Transformers

Where Transformer is Connected to a System, the Neutral of Which Is Not Grounded

*No.	GO-75 Each	Circuit Voltage	No. of Arresters Required at Installation	Std. Pkg.	Approx. Ship. Wt. Lb. Each in Std. Pkg.
9LA10A2	\$14.00	1000-3000	2	12	11
9LA10A4	26.00	3000-6000	2	12	17
9LA10A5	30.00	6000-9000	2	6	26

Where Transformer Is Connected to a System, with a Solidly and Dead Grounded Neutral

9LA10A2	\$14.00	3000-5000	†	12	11
9LA10A4	26.00	5000-9000	†	12	17

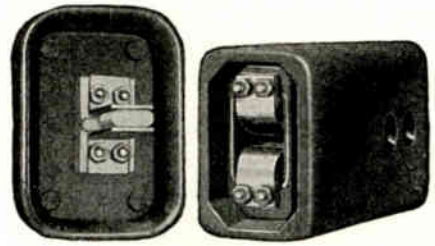
For Protection of Load Side of Transformers

No.	GO-75 Each	KW RATING OF TRANSFORMERS		Std. Pkg.	Approx. Ship. Wt. Lb. Each in Std. Pkg.
		AMP. SECONDARY 6.6 or 7.5	20		
9LA10A202	\$6.00	1, 2, 3	1, 2, 3	24	4
9LA10A2	14.00	5, 7.5, 10	5, 7.5, 10	12	11
			15, 20, 25		
9LA10A4	26.00	20, 25, 30	30, 35, 40	12	18
9LA10A5	30.00	35, 40	.....	6	30
9LA10A6	46.00	50	.....	6	37
9LA10A7	60.00	60, 70	.....	6	40

*Only for installations at altitudes below 6000 feet. For altitudes above 6000 feet, obtain special recommendations.

†Where transformer is connected between an outside wire and neutral, use one pellet arrester on outside wire. Use also on neutral wire a neutral arrester, No. 9LA11A1 (\$5.50 each; shipping weight, 4 pounds, standard package, 12), or No. 146187 (\$3.50 each; shipping weight, 1.3 pounds; standard package, 24) if voltage to ground is not over 300 volts; if, because of unbalancing, voltage is between 300 and 1000 volts, use No. 9LA10A1 (\$12.00 each; shipping weight, 8 pounds; standard package, 12). Use two arresters at an installation made between outside wires.

G-E Form F-100-B Novalux Pothead Cutouts
For Ornamental Street-Lighting Units



Cat. No. 3732073G1

For use with ornamental series street-lighting circuits for mounting in the base of the smaller lighting standards.

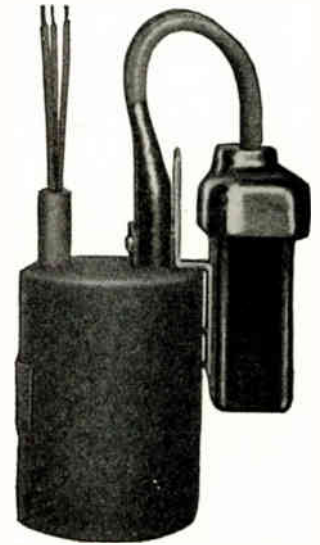
Consists of two sections, the box and plug, both made of special process porcelain. Plug is equipped with flat contact strips, insulated from each other. Provision is made at top part of plug so that insulating compound can be poured in round the leads. Box contains four flat phosphor-bronze springs. Contacts are assembled within an air expulsion chamber.

If it is desired to use cutout for disconnecting several lamps, this chamber may be filled with G-E No. 21 Oil.

At the top of box, a hole is provided through which insulating compound can be poured. Two holes are provided in bottom of contact of cutout for parkway cable.



Cutout with Spade Bracket and Cable Clamp, Cat. No. 3732073G2

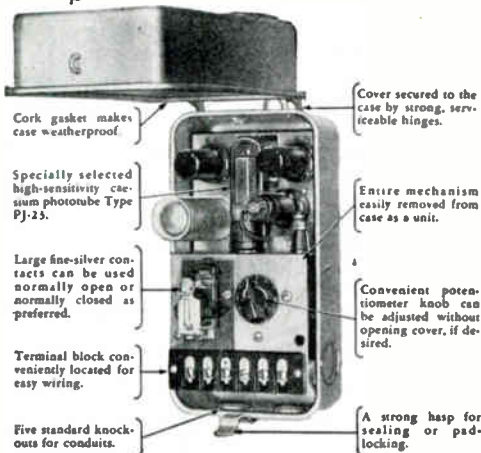
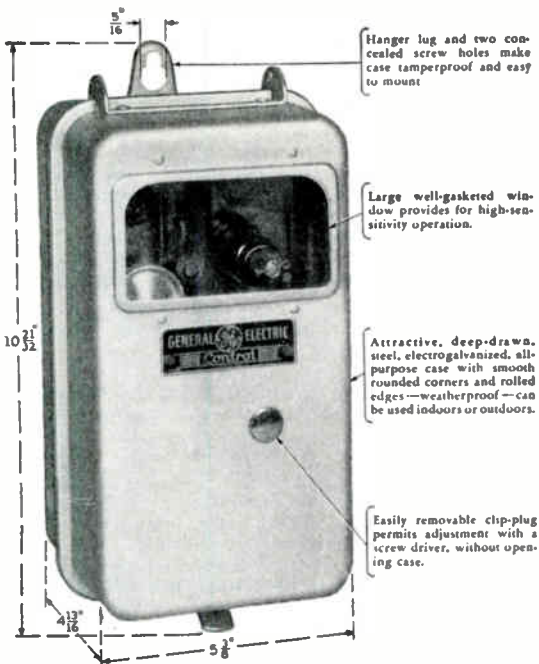


Cutout with Strap for IL Transformer Mounting, Cat. Nos. 3732073G5 or 3732073G6 Mounted on Side

Cat. No.	Description	*Ship. *Net		
		Std. Pkg.	Wt. Lbs.	Wt. Lbs.
3732073G1	Pothead Cutout Only.....	10	125	9
3732073G2	Cutout with Spade Bracket and Cable Clamp for Mounting in Base of Ornamental Pole.....	10	200	13
3732073G7	Cutout with Spade Bracket, Less Cable Clamp, for Mounting in Base of Ornamental Pole.....	10	...	12
3732073G5	Cutout with Bracket for Mounting on Type IL Transformer with 5 1/8-Inch Diameter Can.....	10	140	10
3732073G6	Cutout with Bracket for Mounting on Type IL Transformer with 5 1/8-Inch Diameter Can.....	10	140	10
3732073G4	Cutout with Bracket and Gasket, for Mounting on Ornamental Pole.....	10	140	10

*Without compound.

G-E Type CR7505-H104-G2 Novalux Photoelectric Relays For Controlling Light with Light 120 Volts—60 Cycles, A.C.



For street and highway lighting control. Can be used with relays for operating entire lighting system from central station, or it can be installed to operate economically an isolated section of the lighting system. Well suited for controlling floodlighting, signs, etc.

Single control knob regulates the turn-on and turn-off points of the controller.

Contacts are provided for normally open or normally closed operation. Contacts are electrically independent of the rest of the circuit. A reliable heavy duty type relay is used to open and close contacts.

Rating: 120 volts a.c. For controller or relay coil: Make 25 amp.; break, 25 amp.; carry, 8 amp. For incandescent lamp load: Make, 25 amp.; break, 2.5 amp.; carry, 2.5 amp.

Price includes tubes, specify tubes required.

No.	Control	Phototube Holder
Type.....	†CR7505H104G2	5367699G2
GO-51.....		CR7500-H6
Phototube Used.....	*PJ23	RCA921
Approx. Ship. Weight pounds	10	9

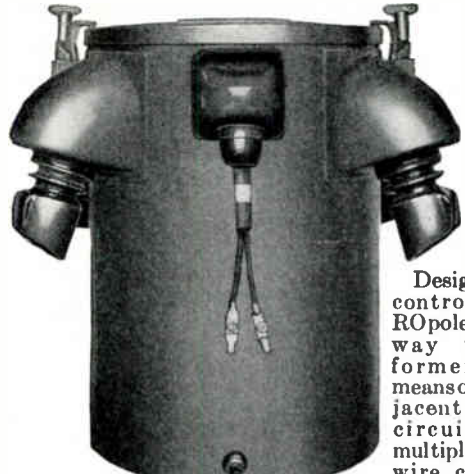
*Also uses three standard metal vacuum radio-type tubes, Nos. GE6J5 and GE6B8. The PJ23 is not used if separate phototube holder is used.

†Both type and no.

For other ratings refer to general office.

Wiring diagram, L-2839891.

G-E Type CR7841 Novalux Remote-Control Apparatus



No. CR 7841—FG Pole Type

Designed to control Type ROpoleorsubway transformers by means of an adjacent series circuit or a multiple pilot-wire control circuit. With either series

operating coil rated from 4 to 20 amperes at any frequency or with shunt operating coil at 120, 240, 480 volts, 50 or 60 cycles or 120, 240 volts, 25 cycles; in three types—normally open, normally closed, latched-in. Also furnished for subway mounting when necessary. Switch is for use on any voltage up to and including 7500 volts, 15 amperes, and the most popular voltages with current ratings are as follows: At 7500 volts switch will break 15 amperes; 6600 volts, 25 amperes, 4500 volts, 35 amperes, 2300 volts, 50 amperes or 220 volts, 100 amperes. Carrying capacity 60 amperes at any voltage above 500. Operates at any frequency.

The wattage of operation coil is such that enough heat is generated to overcome any congealing effect and switch may be used in almost any weather condition which will be encountered in the northern hemisphere, without sluggish operation. The high-potential test on this controller is 25000 volts from power to control from power to ground, or from control to ground.

Pole type switch is mounted in pressed metal casing with sheet steel cover which is not connected to switch mechanism.

Three moving parts—two readily replaceable contact tips and solenoid, together with necessary levers.

Subway design switch is same as pole type in respect to electrical characteristics. Tank is heavy copper-bearing steel. Wet-process bushings have clamp-type terminals.

All-Night Latch Type

Identical with the CR7841-C rated 7500 volts, 15 amperes interrupting capacity except that it is equipped with a special latch with following operation: When control circuit, either series or multiple, is first turned on, controller will engage and lock in. If control circuit fails or is disconnected, controller still remains engaged. If control circuit is again energized, controller still remains engaged but will be unlatched. When control circuit is again de-energized, controller will drop out. This is designated as the all-night latch type, CR7841-C32 (with series operating coil) and CR7841-C33 (with shunt operating coil).

The hand lever may be used to close the controller manually, and the controller may be disconnected by operating the control coil with the hand lever.



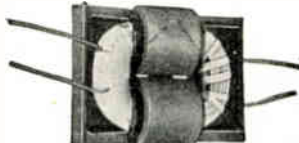
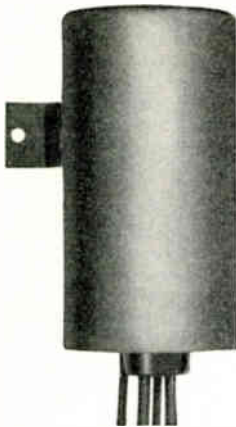
No. CR 7841-C Subway Type

G-E Type SL Novalux Series Transformers
Subway and Aerial Types

For 60-Cycle, 6.6-Ampere Constant-Current Circuits,
6.6 Secondaries



Pole Type, Oil-Filled 4 to 10 Kva



Core and Coils for 4 Kva

Insulating transformer, the primary winding of which is energized from a long series circuit and the secondary of which is used for supplying current to a small number of lamps connected in series and located where the high potential of the ordinary current series circuit would be objectionable. For 6.6 amperes primary and secondary.

Certain classes of lighting require a lower potential than is found on long series lighting circuits, and yet as they function similarly, it is desirable to control them simultaneously with the street lights.

Affords an ideal method for this control as the low-voltage series circuit is turned on and off with the closing or opening of the main constant current transformer circuit. Fixtures with series sockets and film cut-outs must be used on these transformers.

The 0.25 to 3-kw. sizes are compound filled and are air-cooled. The 4, 5, 7.5, and 10-kw. sizes are oil-filled.

Suspension hooks furnished with all capacities over 4 kw. For cross-arm suspension, specify hanger brackets.

Protective devices included in prices.

Kva Output	Aerial Type				Subway Type				
	No. Gal. Oil	No.	GO-51 Each	APPROX. Wt. Lb. Net Ship.	No.	GO-51 Each	APPROX. Wt. Lb. Net Ship.		
.25	...	72X312	\$55.00	27	50	72X322	\$55.00	40	64
.50	...	72X313	60.00	38	62	72X323	60.00	22	53
1.00	...	73X716	90.00	62	80	73X723	90.00	70	80
2.00	...	73X717	110.00	100	130	73X724	110.00	110	135
3.00	...	73X718	135.00	130	170	73X725	135.00	140	185
4.00	*9.5	73X719	170.00	225	†270	73X726	170.00	182	240
5.00	7.5	72X318	200.00	170	†265	72X328	350.00	215	†310
7.50	7.5	72X319	250.00	210	†305	72X329	400.00	255	†350
10.00	9.0	72X320	300.00	250	†352	72X330	450.00	295	†382

*Aerial type only.

†Includes oil.

‡Protective device is assembled in cap of transformer.

For 7.5, 15, and 20-ampere primary and secondary, use 6.6-ampere prices.

For double rating: 6.6/7.5-ampere primary only and 15/20-ampere secondary only, add 25%.

Write for other special ratings and frequencies.

G-E Type 1L Novalux Series Transformers

For Use on 60-Cycle, 6.6-Ampere Constant-Current Circuits

Allow the use of high efficiency series lamps where high potential is impracticable and unsafe. No film cutout is required; each lamp is independent of the others in circuit. In case of an accident to one or more, remainder of lamps on circuit burn without interruption.

For use with pendent units, transformers can be mounted on the cross arms of poles.

When lamp wattage varies between 8% above and 20% below normal, secondary current will not vary more than 1.0% with normal primary current and frequency.

Single Light

For operating one 6.6, 15, or 20-ampere series lamps from 6.6-ampere constant-current circuit.

Vault or Manhole Type with Primary and Secondary Detachable Couplings—Form B-55



Pole-Base Type

Pole Base Type with Primary Coupling and Secondary Wiping Sleeve—Form B-5

Vault		Pole Base		LAMP RATING		Amp.	Effective Voltage	Ship. Wt. Lb.
No.	Each	No.	Each	†Lumens				
3200600	\$43.50	3200599	\$40.00	800/1000		6.6	46	20
4X583	45.50	4X577	42.00	1000/2500		6.6	102	23
4X582	51.50	4X576	48.00	2500/4000		6.6/15	164	34
4X581	52.50	4X575	49.00	4000/6000		15/20	110	34
4X580	53.50	4X574	50.00	6000/10000		20	117	35
4X579	72.50	4X573	69.00	10000/15000		20	184	62
4X578	86.50	4X572	83.00	15000/25000		20	208	66

Pole Base Type with Wiping Sleeves—Form B-15

Aerial Type with Porcelain Bushings—Form A-2

Wiping Sleeve		Ship. Wt. Lb.	Aerial		Ship. Wt. Lb.	LAMP RATING		Effective Voltage	Ship. Wt. Lb.
No.	Each		No.	Each		†Lumens	Amp.		
18X834	\$29.00	16	3200598	\$29.00	16	800/1000	6.6	46	102
4X571	31.00	19	4X565	31.00	19	1000/2500	6.6	102	102
4X570	37.00	27	4X564	37.00	27	2500/4000	6.6/15	164	164
4X569	38.00	29	4X563	38.00	29	4000/6000	15/20	110	110
4X568	39.00	30	4X562	39.00	30	6000/10000	20	117	117
4X567	58.00	56	4X561	58.00	55	10000/15000	20	184	184
4X566	72.00	60	4X560	72.00	59	15000/25000	20	208	208

Two Light—In Series

For operating two 6.6, 15, or 20-ampere Mazda series lamps (in series) from 6.6-ampere constant-current circuit.

Transformers operate two lamps (in series) on the secondary. To avoid interruption of service fixtures with series sockets and film cutouts must be used. If both lamps on secondary burn out transformers operate with secondary short circuited.

*Pole Type Base with Primary Couplings and Secondary Wiping Sleeves—Form B-6

Cat. No.	Each	LAMP RATING		Amp.	Effective Voltage	Ship. Wt. Lb.
		†Lumens				
\$286550	\$57.00	1000+1000/2500+2500		6.6	189	33
\$286549	60.00	2500+2500/4000+4000		6.6/15	312	54
\$286548	79.00	4000+4000/6000+6000		15/20	184	56
\$286547	88.00	6000+6000/10000+10000		20	195	64
\$286546	114.00	10000+10000/15000+15000		20	308	112

Pole Base Type with Wiping Sleeves—Form B-4

\$286545	\$46.00	1000+1000/2500+2500		6.6	189	28
\$286544	59.00	2500+2500/4000+4000		6.6/15	312	48
\$286543	68.00	4000+4000/6000+6000		15/20	184	50
\$286542	77.00	6000+6000/10000+10000		20	195	57
\$286541	103.00	10000+10000/15000+15000		20	308	107

Aerial Type with Porcelain Bushings—Form A-3

\$286540	\$46.00	1000+1000/2500+2500		6.6	189	28
\$286539	59.00	2500+2500/4000+4000		6.6/15	312	47
\$286538	68.00	4000+4000/6000+6000		15/20	184	49
\$286537	77.00	6000+6000/10000+10000		20	195	57
\$286536	103.00	10000+10000/15000+15000		20	308	107

Special transformers can be furnished for any commercial current, frequency, or lumen lamps. *Can be furnished in vault type.

†1000/2500-lumen transformers are 1:1 ratio and secondary leads supply 6.6 amperes for both 1000 and 2500-lumen lamps. 2500/4000-lumen transformers have secondary leads supplying 6.6 amperes for 2500-lumen lamps and 15 amperes for 4000-lumen lamps. 4000/6000-lumen sizes also have leads which furnish 15 amperes for 4000-lumen lamps and 20 amperes for 6000-lumen lamps. 6000/10000, 10000/15000 and 15000/25000-lumen sizes have one set of secondary leads only supplying 20 amperes since the current required on all the leads is the same.

‡Maximum voltage obtained by means of a voltmeter.

§Series sockets with film cutouts must be used with these transformers.

G-E Novalux Cutouts

For Type SL Transformers and Loop Sectionalizing Application

Disconnecting switch for Type SL transformers rated up to 10 kw., 6.6 to 20 amperes primary; 7.5 kw., 5 amperes primary.

For loops not exceeding 1000 volts (load voltage) 4 to 20 amperes.

Surge voltage by-pass when new Thyrite by-pass is included.

Open circuit shunt, short circuiting transformer or loop in case of sustained open circuit (as from broken line or burnt-out transformer).

Use on any series constant-current circuit up to 10000 volts (operating voltage) to ground, up to 20 amperes normal current.

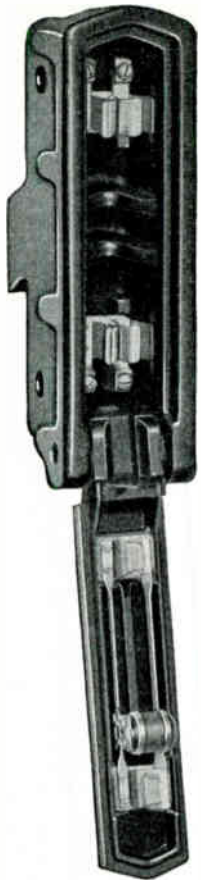
Thyrite by-pass must be used in all cases. Where connected load consists of Type SL transformer do not use SL protective device.

Standard package, 2; shipping weight, 27 pounds.

No. and price do not include Thyrite by-pass.

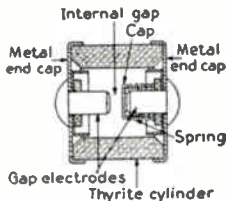
No. 2991604G11, Cutout with Cross-Arm Hanger each \$23.00

No. 2991604G12, Cutout with Channel Hanger each 23.00



Cutout with Thyrite By-Pass

Thyrite By-Pass



Consists of small Thyrite cylinder, two metal end-caps with electrodes forming enclosed spark gap, and one fusible washer pressed on gap electrode.

Thyrite has a negative resistance characteristic, the resistance decreasing as applied voltage is increased.

The Thyrite cylinder is designed so that the rated maximum normal operating voltage produces negligible loss—in the order of 1 watt. A high voltage surge traveling on the line finds in it a low resistance path across the transformer or loop, however, and is therefore by-passed.

Extra heavy surges are over the spark gaps without damage to cutout or connected apparatus. Power current flows only until end of first half cycle.

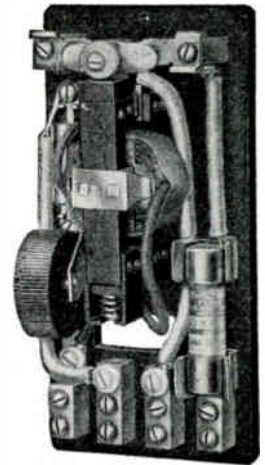
Sustained overvoltage due to open circuit in load greatly increases heating in Thyrite cylinder, melting fusible washer, mechanically completing circuit between end caps, short circuiting load.

No.	Each	Maximum Normal Operating Voltage	Minimum Open Circuit Voltage	Color	Approx. Shp. Wt. Oz.
9F5A8	\$5.50	180	380	Green	2
9F5A9	5.50	300	600	Yellow	2
9F5A10	5.50	500	1000	Gray	2
9F5A11	5.50	750	1500	Blue-Black	2
9F5A12	5.50	1000	2000	Brown	2
9F5A13	5.50	1500	3000	Bright Red	2

G-E Type CR-7843-A 30-Ampere Remote Control Multiple Switches



Multiple Switch



Internal Mechanism Normally Open Type

This remote control switch is a single pole, single throw magnetic switch for operating one or more lamps on one low-voltage multiple circuit. Its application is for remote control by pilot wire or cascade connection for indoor or outdoor mounting, on a pole or in the base of an ornamental standard. The capacity of this multiple switch is 30 amperes normal lamp current at 125 volts or any frequency normally open or normally closed with an inrush capacity up to 15 times normal current. The operating coil consumes about 2 watts at 125 volts a.c., 60 cycles.

Switch is supplied with or without the following optional equipment: 30-ampere load circuit fuse; 2-ampere coil circuit fuse; carbon-block lightning arrester or coil circuit; Thyrite arrester on coil circuit, alternative with carbon-block arrester for surge voltage protection.

Switch is also available with a 6.6-ampere operating coil for operation from series lighting circuits with Type IL transformer.

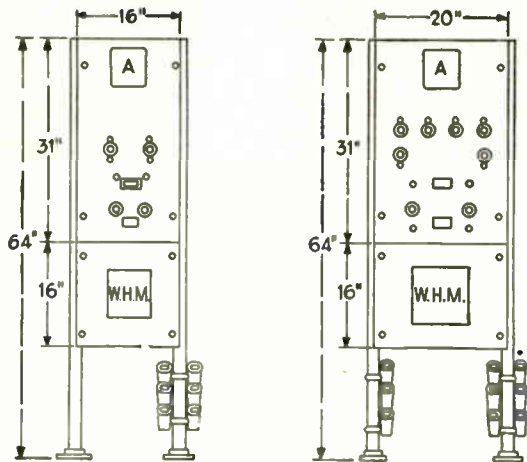
Another variation of this switch is furnished with 10-ampere contacts at a slight reduction in price.

Approximate shipping weight, 10 pounds.

No.	GO-51 Each	Type CR7843-	DE-ENERGIZED POSITION OF CONTACTS		EQUIPMENT			
			Norm. Open	Norm. Closed	2-Amp. Coil Fuse	30-Amp. Fuse	Light-ning Arrester	Thyrite Carbon Light-ning Arrester
4980200G2	\$40.40	A1A	X		X	X	X	—
4980209G2	40.40	A2A		X	X	X	X	—
4980201G2	39.20	A1B	X		X	—	X	—
4980210G2	39.20	A2B		X	X	—	X	—
4980202G2	39.20	A1C	X		—	X	X	—
4980211G2	39.20	A2C		X	—	X	X	—
4980203G2	33.40	A1D	X		X	X	—	—
4980212G2	33.40	A2D		X	X	X	—	—
4980204G2	32.20	A1E	X		—	X	—	—
4980213G2	32.20	A2E		X	—	X	—	—
4980205G2	31.00	A1F	X		—	—	—	—
4980214G2	31.00	A2F		X	—	—	—	—
4980206G2	36.40	A1G	X		X	X	—	X
4980215G2	36.40	A2G		X	X	X	—	X
4980207G2	35.20	A1H	X		X	—	—	X
4980216G2	35.20	A2H		X	X	—	—	X
4980208G2	35.20	A1J	X		—	X	—	X
4980217G2	35.20	A2J		X	—	X	—	X
4387875G2	34.00	A1K	X		—	—	—	X
4387876G2	34.00	A2K		X	—	—	—	X

G-E Plug Switch Panels

For Non-Automatic Station Type RV-2 Novalux
Constant-Current Transformers
6.6 or 7.5 Secondary Amperes, 2300 Volts



For 1 Transformer and 1 Lamp Circuit

For 1 Transformer and 2 Lamp Circuits

The panels and subbase are asbestos-ebony, 1½ inches thick with ¼-inch bevel, and are mounted on a self-supporting framework of 1¼-inch pipe 64 inches high. Blue Vermont marble may be substituted for asbestos-ebony at a slight increase in price.

Instruments and meters have the G-E Company's standard dull-black finish, while the supporting framework is black japanned.

Lightning arresters are recommended for each lamp circuit. They are not included with these panels and must be ordered separately.

Each panel Cat. No. includes one panel with framework, a 5-ampere Type AD ammeter with 10-ampere scale, current transformer, fused primary plug switches, secondary plug switches, necessary plugs, plug racks, card holders and nameplate.

Each watt-hour meter Cat. No. includes one subbase with pipe fittings, 110-volt, 5-ampere Type IS-8 single-phase watt-hour meter, current transformer, and potential transformer with fuses and supports.

Panels for 1 Transformer and 1 or 2 Lamp Circuits

Normal Kw. Rating	Amp. Cap. Primary Fuses (Main Panel)	Current Transformer Cap. Amp. (Watt-hour Meters Subbase)	Panels for 1 Lamp Circuit		*Panels for 2 Lamp Circuits	
			Main Panel Cat. No.	Watt-hour Meter Subbase Cat. No.	Main Panel Cat. No.	Watt-hour Meter Subbase Cat. No.
5	4.0	10	2X518	2X538	2X528	2X548
10	6.0	20	2X519	2X539	2X529	2X549
15	10.0	30	2X520	2X540	2X530	2X550
20	12.0	40	2X521	2X541	2X531	2X551
25	15.0	50	2X522	2X532	2X532	2X552
30	20.0	60	2X523	2X543	2X533	2X553
40	25.0	80	2X524	2X544	2X534	2X554
50	30.0	80	2X525	2X545	2X535	2X555
60	40.0	100	2X526	2X546	2X536	2X556
70	40.0	125	2X527	2X547	2X537	2X557

Panel for 1 Transformer with 1 Lamp Circuit... each

Panel for 1 Transformer with 2 Lamp Circuits... each

Subbases with Watt-hour Meters, for 1 or 2-Circuit Panels..... each

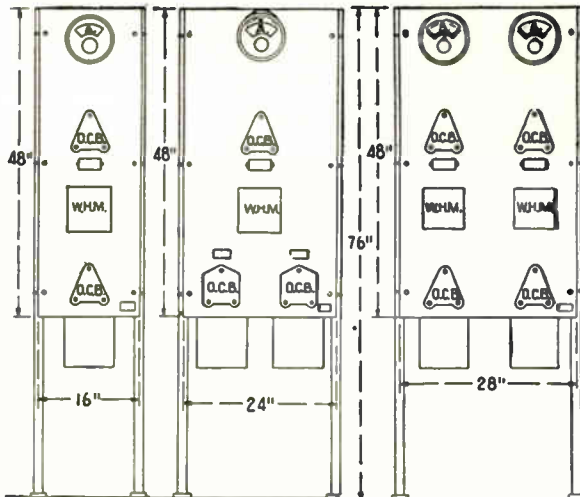
*Two-circuit panels up to and including 30 kw. are for transformers with single-circuit secondaries. Above 30 kw. panels are arranged for multi-circuit secondary transformers.

Pellet Arresters—For Outdoor Service Only

Sgl. Pole Cat. No.	Each	Normal Kw. Rating	Approx. Ship. Wt. Lbs.	Sgl. Pole Cat. No.	Each	Normal Kw. Rating	Ship. Wt. Lbs.
9LA10A2	\$14.00	5-15	11	9LA10A6	\$46.00	50	37
9LA10A4	26.00	20-30	18	9LA10A7	60.00	60 & 70	40
9LA10A5	30.00	35 & 40	37				

G-E FK-41 Oil Circuit Breaker Panels

For Non-Automatic Station Type RV-2 Novalux
Constant Current Transformers
6.6 or 7.5 Secondary Amperes, 2300 Volts



For 1 Transformer and 1 Lamp Circuit

For 1 Transformer and 2 Lamp Circuits

For 2 Transformers with 1 Lamp Circuit per Transformer

Designed for the control of one single-circuit secondary or multi-circuit secondary constant current transformer and either one or two lamp circuits per transformer. Lamp circuits may be either arc or incandescent. Panels are for separate installation near the transformers they are to control and are not suitable for assembly in a switchboard.

Each panel Cat. No. includes panel with framework, 5-amp. Type AD ammeter with 10-amp. scale, current transformer, necessary oil circuit breakers mounted on back of panel, enclosed primary fuses, card holders and name plate.

Each watt-hour meter Cat. No. includes 110-volt, 5-amp. Type IS-4 single-phase watt-hour meter, current transformer and potential transformer with fuses and supports. Watt-hour meter is mounted on front of main panel and instrument transformers and fuses on the back.

Panels for 1 Transformer and 1 or 2 Lamp Circuits

Normal Kw. Rating	Amp. Cap. Primary Fuses (Main Panel)	Current Transformer Cap. Amp. (Watt-hour Meter Equipment)	Panels for 1 Lamp Circuit		*Panels for 2 Lamp Circuits	
			Main Panel Cat. No.	Watt-hour Meter Equipment Cat. No.	Main Panel Cat. No.	Watt-hour Meter Equipment Cat. No.
5	4.0	10	2X438	258606	2X450	258606
10	6.0	20	2X439	258607	2X451	258607
15	10.0	30	2X440	258608	2X452	258608
20	12.0	40	2X441	258609	2X453	258609
25	15.0	50	2X442	258610	2X454	258610
30	20.0	60	2X443	258611	2X455	258611
35	20.0	60	.....	.....	2X456	258612
40	25.0	80	.....	.....	2X457	258613
50	30.0	80	.....	.....	2X458	258614
60	40.0	100	.....	.....	2X459	258615
70	40.0	125	.....	.....	2X460	258616

Panel for 1 Transformer and 1 Lamp Circuit... each

Panel for 1 Transformer and 2 Lamp Circuits... each

Watt-hour Meter Equipment for 1 Transformer with 1 or 2 Lamp Circuits per Transformer..... each

Panels for 2 Transformers with 1 Lamp Circuit per Transformer

5	4.0	10	2X444	258617	.....	.....
10	6.0	20	2X445	258618	.....	.....
15	10.0	30	2X446	258619	.....	.....
20	12.0	40	2X447	258620	.....	.....
25	15.0	50	2X448	258621	.....	.....
30	20.0	60	2X449	258622	.....	.....

Panel for 2 Transformers with 1 Lamp Circuit per Transformer..... each

Watt-hour Meter Equipment for 2 Transformers with 1 Lamp Circuit per Transformer..... each

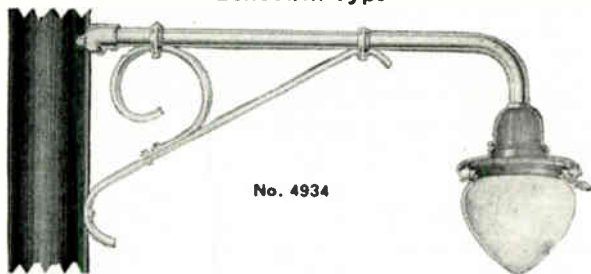
*Two-circuit panels up to and including 30 kw. are for transformers with single-circuit secondaries. Above 30 kw. panels are arranged for multi-circuit secondary transformers.

Hubbard Street Hood Brackets

Hot Galvanized

Luminaires and mounting bolts are not included and must be ordered separately.

Bent Arm Type



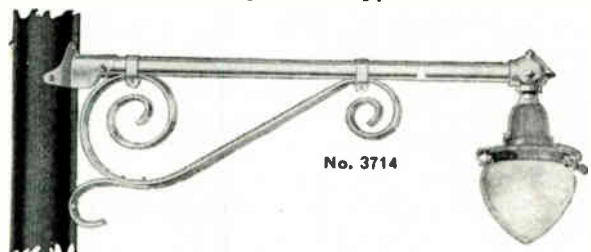
No. 4934

By interchanging scrolls, pole plates, pipes, and clips, practically any form of bent arm type bracket desired may be assembled.

Made of 1 1/4-inch pipe. Pipe thread attachment, 1 1/4 inches. Extension from pole, 48 inches.

Assembly No.	Each	Pole Plate No.	Pipe No.	Scroll No.	Scroll Clip No.	End Fitting No.	Ship. Wt. per 100
3734	\$1090.00	3901	23518	4556	3691	.....	2625
3736	1120.00	3907	23518	4556	3691	.....	2695
4934	1015.00	4757	23568	4558	3691	.....	2275

Straight Arm Type



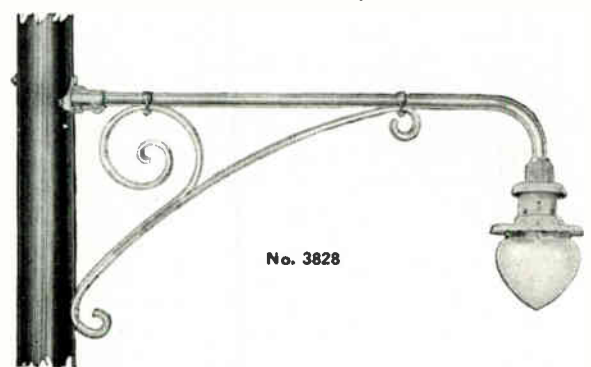
No. 3714

Made up in the same combinations as the bent arm type, except that the straight arm type bracket has a right-angled fitting at the outer end instead of a bend in the pipe.

Made of 1 1/4-inch pipe. Pipe thread attachment, 1 1/4 inches. Extension from pole, 48 inches.

3714	\$1215.00	3901	23505	4556	3691	3386	2780
3716	1245.00	3907	23505	4556	3691	3386	2850
4924	1140.00	4757	23555	4558	3691	3386	2430

Municipal Type



No. 3828

Assembly No.	Each	Extension from Pole In.	Nom. Diam. In.	Pipe Thrd. Attach-ment In.	Pole Plate No.	Pipe No.	Scroll No.	Scroll Clip No.	Ship. Wt. per 100
3804	\$1435.00	48	1 1/4	1 1/4	4752	23618	4581	3696	2970
3808	1975.00	96	1 1/4	1 1/4	4752	23620	4583	3696	4620
3824	2035.00	48	2	2	4755	23625 1/2	4583 1/2	3697	4400
3828	2730.00	96	2	2	4755	23627	4585	3697	7000

Hubbard Street Hood Brackets

Hot Galvanized

No. 3790—Double Bend Type



Standard 1 1/4-inch pipe formed to a double curve supported by an attractive scroll. Attached to pole by certified malleable iron pole plate No. 4759, threaded to receive pipe. Mounting holes are for a 5/8-inch through bolt at top and

1/2-inch lag screws at sides. A porcelain insulator bushing is provided for internal wiring. The scroll support is attached to pole by means of a 1/2-inch lag screw and to pipe by positive clamping arrangement.

Extension, 48 inches. Vertical pole space, 34 inches. No. 3790, Weight 32 Pounds.....each \$11.65

Gooseneck Type



No. 3764

Used at points where a lightweight bracket is desirable. The radius of the curve in the pipe is large enough so that wiring may be pushed through without difficulty.

If combinations are desired other than listed in the table they may be ordered by specifying parts separately.

Made of 3/4-inch pipe. Pipe thread attachment, 3/4 inch.

Assembly No.	3745	3764
Per 100	\$435.00	460.00
Extension from Pole	40	48
Pole Plate No.	3701	3701
Pipe No.	23530	23531
Shipping Weight per 100	780	880

Hubbard Presteel Trolley Mast Arms

Type 28—Chain Operated—Patented

Hot Galvanized



Carriage on arm is operated by a continuous bronze chain which is protected by a 12-gage steel arm housing. All movable parts equipped with brass bushings. Tension on chain is provided for by rod and thumb screw at pole end. Sprocket mechanism, consisting of crankshaft and sprocket in movable frame, operates freely under varying conditions.

A non-ferrous sprocket wheel is constructed with teeth specially formed to follow the chain. Locking device holds mechanism against any movement from undesirable sources.

Chain is pre-stretched to 175 pounds. Chain rides in guides which have been placed at top of carriage.

Front spreader No. 3444 and rear spreader No. 3439 have 1-inch spring threads. Tie rod has eye at one end with 5/16-inch hole for pole mounting and 6 inches of thread at other end to permit leveling the arm. Pole mounting bolts are not included.

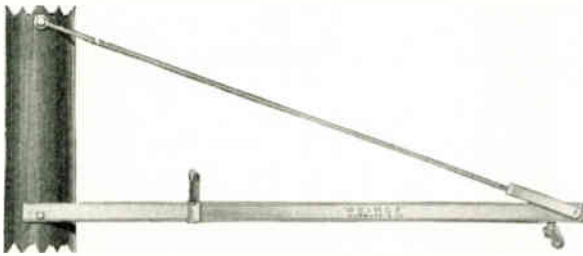
Pipe thread attachment, 3/4 inch.

No.	3606	3608	3610	3612	3614	3616
Per 100	\$2080.	2300.	2590.	2865.	3140.	3510.
Length	6	8	10	12	14	16
Ship. Wt. per 100. lb.	3800	4500	5200	5900	6600	7300

Hubbard Presteel Trolley Mast Arms

Type 29—Rod Operated—Patented

Hot Galvanized



The main difference between Type 29 and Type 28 arms is that the chain mechanism is replaced by a rod. To pull lamp toward pole, rod is lifted out of gravity lock by its handle and drawn out of arm housing. This operation reversed moves lamp forward again, locking it in place. Pole mounting bolts are not included.

No.	3406	3408	3410	3412	3414	3416
Per 100	\$1800.	2060.	2200.	2500.	2900.	3320.
Length	6	8	10	12	14	16
Ship. Wt. per 100	3800	4500	5400	6200	7200	7900

Hubbard Truss Type Mast Arms

Hot Galvanized



Type 30

TYPE 30. Furnished with two sleet-proof pulleys. The end pulley is the interlocking type which supports luminaire in position without putting tension on the chain.

TYPE 31. Same as Type 30 except for outer end pulley.

TYPE 32. With 3/4-inch standard pipe stud cast as a part of No. 3265 end cap.

TYPE 33. Same as Type 32 except does not have end cap. Equipped with flexible mounting brass stud with 3/4-inch pipe threads. Fits any average diameter pole.

Approx. Extension Feet	Type 30 Lock Pulley			Type 31 Standard Pulley		
	No.	Per 100	Ship. Wt. Lb. per 100	No.	Per 100	Ship. Wt. Lb. per 100
6	3526	\$1760.00	4180	3506	\$1490.00	3850
8	3528	2025.00	4840	3508	1755.00	4510
10	3530	2325.00	5610	3510	2055.00	5280
12	3532	2665.00	6490	3512	2395.00	6160
14	3534	3040.00	7480	3514	2770.00	7150
16	3536	3445.00	8580	3516	3175.00	8250
18	3538	3855.00	9680	3518	3585.00	9350

Approx. Exten- sion Feet	Pipe Thrd. Attach- ment In.	Type 32 Rigid Mounting			Type 33 Flexible Mounting		
		No.	Per 100	Ship. Wt. Lb. per 100	No.	Per 100	Ship. Wt. Lb. per 100
6	3/4	3566	\$1355.00	3410	3546	\$1305.00	3300
8	3/4	3568	1620.00	4070	3548	1570.00	3960
10	3/4	3570	1920.00	4840	3550	1870.00	4730
12	3/4	3572	2260.00	5720	3552	2210.00	5610
14	3/4	3574	2635.00	6710	3554	2585.00	6600
16	3/4	3576	3040.00	7810	3556	2990.00	7700
18	3/4	3578	3450.00	8910	3557	3400.00	8800

No. 1530, Galvanized Chain, Ship. Wt. 15 Lb. per 100 ft.

Hubbard Pole Plates

Hot Galvanized
One-Piece Presteel Type



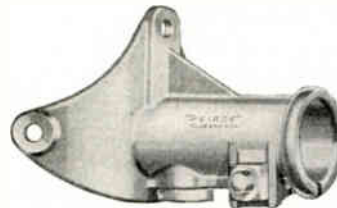
No. 3907

Designed for 1 1/4-inch pipe street hood brackets. Made of 7-gage steel, one-piece construction. The 9/16-inch horizontal pole bearing surface is especially effective in eliminating side sway.

No. 3907 is similar to No. 3901 except that it is equipped with No. 3751 porcelain bushing for internal wiring.

No.	3901	3907
Per 100	\$250.00	280.00
Shipping Weight per 100	480	550

Malleable Iron Clamp Type



Made with a special gripping arrangement for pipe.

Clamp bolt passes through plate at a point which would prevent insertion of standard round pipe. Pipe used with plate must be forged to meet this re-

quirement. This arrangement prevents pipe from turning and locks it in place.

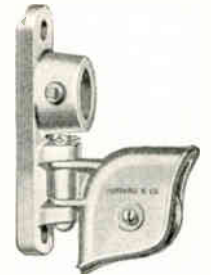
No.	4752	4755
Per 100	\$300.00	360.00
Pipe Size	1 1/4 inches	2
Shipping Weight per 100	585	815

Hubbard Pole Pulleys for Pipe Arms

Hot Galvanized



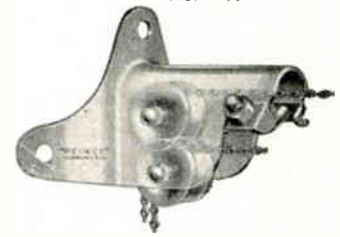
No. 3760



No. 3765



No. 3770



No. 3903 and 3905

For both internal and external chain-operated mast arms. This pulley serves as pole plate and pulley combined.

No.	Per 100	For Chain	Nom. Diam. Pipe In.	Vertical Pole Space In.	Extension from Pole In.	Diam. Wheel In.	Ship. Wt. Lb. per 100
*3760	\$520.00	Internal	1 1/4	7 1/4	9 1/4	2 1/4	1320
3765	360.00	External	1 1/4	.....	.....	1 3/4	835
3770	370.00	Internal	1 1/4	7 1/4	7 1/4	2 1/4	750
3903	310.00	Internal	1 1/4	6 3/8	6 3/16	1 1/2	575
3905	310.00	External	1 1/4	6 3/8	6 3/16	1 1/2	575

*Hinged to permit leveling the arm. Hinge bolt is 5/8-inch in diameter; furnished with lock washer.

Hubbard Pole Plates

Standard Type
Hot Galvanized



Generally used on brackets of 4-foot lengths. Formed of pressed steel with a clamping arrangement which eliminates the necessity of threading on pipes.

No.	3701	3703
Per 100	\$150.00	175.00
Pipe Size	3/4 inches	1 1/4 inches
Shipping Weight per 100	225 pounds	365 pounds

Hubbard Insulated Lamp Hangers

Hot Galvanized

With Suspension Type Insulators



No. 1504



No. 1505



No. 1514



No. 1524

No. 1504. A standard 6000-volt metal cap insulator with safety hook arrangement for locking arc lamp in place.

No. 1505. Similar to No. 1504 except that clevis with 3/4-inch opening replaces safety hook.

No. 1514. Furnished with hook attachment for the lamp. For making attachments to a 3/4-inch stud.

No. 1524. Similar to No. 1514 except that lamp attachment is a 3/4-inch stud.

No.	Per 100	Hanger Attachment Inches	Lamp Attachment Inches	Shipping Wt. Lb. per 100
1504	\$675.00	1 3/16 Hole	Safety Hook—1/2" Opening	360
1505	675.00	1 3/16 Hole	Clevis—3/4" Opening	380
1514	675.00	3/4 Thrd.	Hook—1/2" Opening	360
1524	675.00	3/4 Thrd.	3/4"—Pipe Thread	325

With Spreaders



No. 1534

Nos. 1515 and 1516. Suspension insulators with channel spreaders.

Nos. 1534 and 1544. Combination spreaders and suspension insulators with hook attachment for the luminaire.

No.	Per 100	Hanger Attachment Inches	Lamp Attachment Inches	Shipping Wt. Lb. per 100
1515	\$790.00	1 3/16 Hole	Clevis 3/4" Opening	480
1516	790.00	3/4 Thrd.	Clevis—3/4" Opening	530
1534	800.00	1 3/16 Hole	Hook—1/2" Opening	575
1544	800.00	3/4 Thrd.	Hook—1/2" Opening	585

With Pin Type Insulators



No. 1591

Consists of a 6600-volt pin type insulator fitted with a cap for the mast arm attachment and a fitting for the lamp attachment.



No. 1592

No.	Per 100	Hanger Attachment Inches	Lamp Attachment Inches	Shipping Wt. Lb. per 100
1591	\$350.00	3/4 Thrd.	3/4" Pipe Thread	355
1592	350.00	3/4 Thrd.	Hook—1/2" Opening	370

Hubbard Lamp Lead Brackets

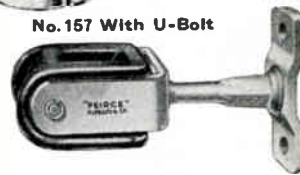
Hot Galvanized



No. 1660 With Lag Screw



No. 157 With U-Bolt



No. 174 With Plate

This bracket is constructed in such a way that it opens up for the insertion of lamp leads. Porcelain halves of insulator are held in place when open by lugs loosely fitted to allow for contraction and expansion.

Brackets with solid insulators are similarly constructed except that they require cable to be threaded through wire hole.

Nos. 157 and 175 are also furnished with 5/8x3/4 and 1/2x2 1/2-inch machine bolt studs for use on Hubbard Adjustable Pole Bands and for mounting on mast arms.

With Insulator Shown on No. 157

Wire Hole Adjustment, 5/16x1 1/8 to 1x1 1/8 inches

No.	With Insulators per 100	Type of Attachment	Extension from Base Inches	Shipping Wt. Lb. per 100
157	\$235.50	U-Bolt for 1 1/4-Inch Pipe	5	280
158	247.60	U-Bolt for 2-Inch Pipe	5	285
163	243.00	1/2 x 3-Inch Lag Screw	5	275
163A	243.00	5/8-Inch Diam. x 1 1/16-Inch Stud	5	275
163B	243.00	1/2-Inch Diam. x 2 1/2-Inch Stud	5	285
164	256.00	Plate	5	330

With Insulator Shown on No. 174

Wire Hole, 1 1/8x1 1/8 inches

No.	With Insulators per 100	Type of Attachment	Extension from Base Inches	Shipping Wt. Lb. per 100
133	\$176.80	U-Bolt for 1 1/4-Inch Pipe	5	300
134	188.60	U-Bolt for 2-Inch Pipe	5	305
173	157.70	1/2 x 3-Inch Lag Screw	5	290
173A	157.70	5/8-Inch Diam. x 3/4-Inch Stud	5	255
173B	157.70	1/2-Inch Diam. x 2 1/2-Inch Stud	5	260
174	153.20	Plate	5	265

Wood Pole Type

Diameter Wire Hole, 1 Inch

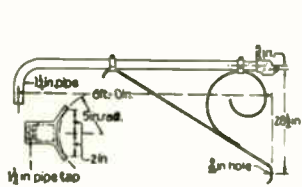
Used on pole or crossarm for running cables to mast arm.

No.	1640	1650	1660
Per 100			\$194.50
Extension	3 1/2 inches	3 1/2 inches	5 1/2 inches
Attachment Screw	Galv.	*	Lag
Ship. Wt. per 100	220 pounds	220 pounds	265 pounds

*No. 22x2-inch brass screw.

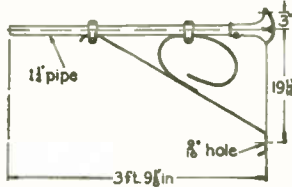
G-E Novalux Brackets—For Novalux Suspension Luminaires

Right-Angle Bend Brackets
Double Scroll
Galvanized Finish



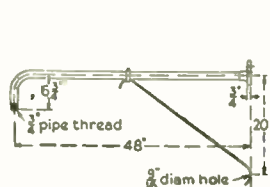
No. 1229475G49	1229475G4
Each \$12.80	10.10
Lgth. ft. 6	4
Ship. Wt. lb. 28	23

Straight Pipe Brackets
Double Scroll—Clamp Type
Pole Plate—Galvanized Finish



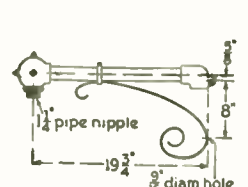
No. A2G2	A2G13
Each \$9.80	12.50
Length. ft. 4	6
Ship. Wt. lb. 22	27

Right-Angle Bend Brackets
Single Brace
Galvanized Finish



No. 1229475G90
Each \$6.45
Length. ft. 4
Ship. Wt. lb. 11

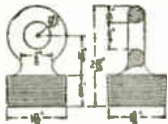
Right-Angle Joint Brackets
Single Brace
Galvanized Finish



No. 1229475G92
Each \$8.00
Length. in. 20
Ship. Wt. lb. 16

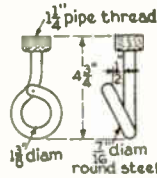
G-E Novalux Hangers—For Novalux Suspension Luminaires

1 1/4-Inch Suspension Eyes



No. 2369563
Each \$1.00
Approx. Net Wt. lb. 3/4
Approx. Ship. Wt. lb. 1

Suspension Eyes



No. 2340
Each \$1.00
Approx. Net Wt. lb. 1/2
Approx. Ship. Wt. lb. 1/2

Cable Inlets



No. 4830380P1
Each \$2.50
Approx. Net Wt. lb.
Approx. Ship. Wt. lb.

Split Insulator Wire Holders
Lag Screw Mounting



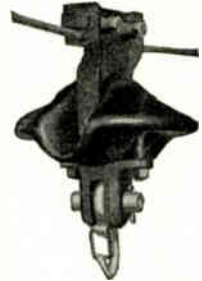
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Approx. Ship. Wt. lb.

Clamp Suspensions
With Stud and Insulator



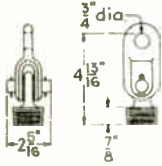
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Each \$7.25
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Approx. Ship. Wt. lb. 11

Clamp Suspensions
With Hook and Insulator



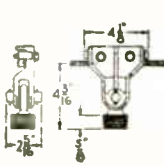
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Each \$7.25
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Approx. Ship. Wt. lb. 11

Eye Suspensions
With Stud



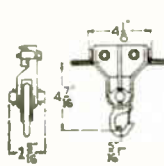
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Each \$2.00
Approx. Wt.
Net. lb. 1 1/2
Ship. lb. 3

Clamp Suspensions
With Stud



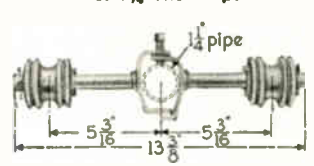
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Ship. lb. 4

Clamp Suspensions
With Hook



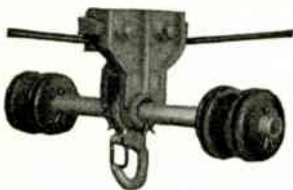
No. 3717173G15
Each \$2.50
Approx. Wt.
Net. lb. 2 1/2
Ship. lb. 4

Spreader Arms
For 1 1/4-Inch Pipe



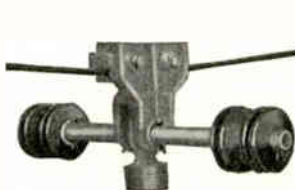
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Approx. Wt.
Net. lb. 2
Ship. lb. 3

Clamp Suspensions
With Hook and Cross Arm



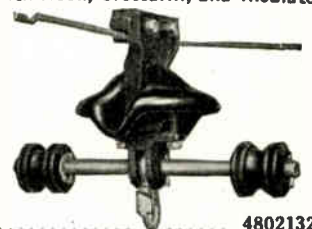
No. 3717173G4
Each \$5.00
Approx. Net Wt. lb. 4
Approx. Ship. Wt. lb. 5

Clamp Suspensions
With Stud and Cross Arm



No. 3717173G3
Each \$5.00
Approx. Net Wt. lb. 4
Approx. Ship. Wt. lb. 5

Clamp Suspension
With Hook, Crossarm, and Insulator







No. 4802132G3
Each \$9.75
Approx. Net Wt. lb. 8
Approx. Ship. Wt. lb. 13

G-E Film Cutouts



Assembled and Exploded View of Lithographed Tin Can Containing Enclosed Cutouts Showing Method of Shipment and Typical Recommendations According to Lamp and Transformer Ratings

Dimensions	Color of Washer	Probable Limits of Breakdown Volts	No.	Class GO-51 per 100	Std. Pkg. Qty.	Ship. Wt. Lb. Std. Pkg.
	Brown	50 to 90	4815602G2	\$6.50	50	2
	Black	100 to 200	4815602G1	6.50	50	2
	Red	250 to 350	4815602G3	6.50	50	2
	Brown	50 to 90	4815920G2	6.50	50	1 1/2
	Black	100 to 200	4815920G1	6.50	50	1 1/2
	Red	250 to 350	4815920G3	6.50	50	1 1/2
	Brown	50 to 90	4815603G2	6.50	100	1 1/2
	Black	100 to 200	4815603G1	6.50	100	1 1/2
	(Magazine Type)	100 to 250	15X729	*.30	500	1/2

*Each

G-E Sockets and Receptacles

Mogul Screw Bases

No. 45X841 Skeleton Type



No. 45X850 Skeleton Type One Side Support



No.	45X841	45X850
Each	\$1.20	1.20
Standard Package Quantity	100	100
Approx. Ship. Wt. Std. Pkg. lb.	35	35

Medium Screw Bases

No. 49X958 Porcelain Type



No. 78X144 With Cast Binding Posts



No. GE427 Porcelain Type With Mounting Yoke



No.	49X958	78X144	GE427
Each	\$1.00	1.40	1.40
Standard Package Quantity	100	100	100
Approx. Ship. Wt. Std. Pkg. lb.	35	34	50

No. 78X381 Medium Bi-Post Bases



No. 48X300 Admedium Screw Bases Skeleton Type



No.	78X381	No.	48X300
Each	\$3.20	Each	\$1.00

Mogul Screw Base Series Sockets



No. 4815866G1 Porcelain

No.	4815866G1	4815866G2
Each ...	\$1.40	1.40
Std. Pkg.		
Qty. ...	100	50
Approx. Ship. Wt. Std. Pkg. lb.	80	18



No. 4815866G2 Black Textolite

Series Receptacles



No. 4815233G1 Horizontal Binding Posts



No. 4815794G5 Vertical Binding Posts and Mounting Straps



No. 5556568G2 Wet-Process Porcelain (25KV Flashover)

No.	4815233G1	4815794G5	5556568G2
Each	\$1.50	1.70	3.00
Std. Pkg. Qty.	18	18	50
Approx. Ship. Wt. Std. Pkg. lb.	22	22	70

No. GE070 Adapters

Mogul to Medium Screw Base

No.	GE070
Each	\$.60
Standard Package Quantity	100
Approx. Ship. Wt. Std. Pkg. lb.	25

No. 39X332 Mogul Extensions

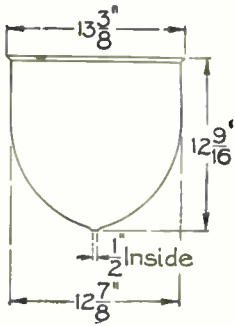
No.	39X332
Each	\$2.10
Standard Package Quantity	50
Approx. Ship. Wt. Std. Pkg. lb.	46



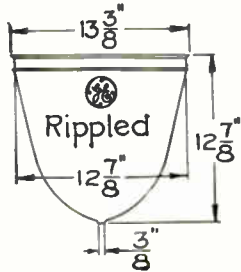
G-E Street Lighting Glassware

Outer Globes

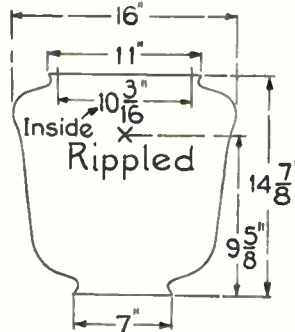
Dimensions



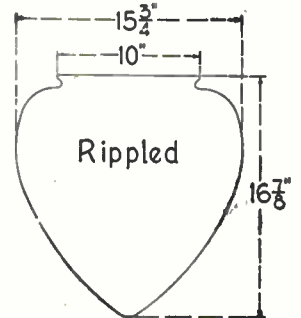
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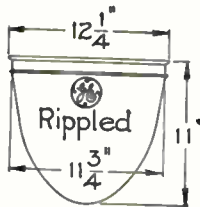
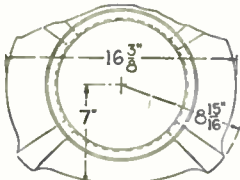
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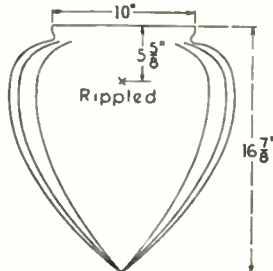
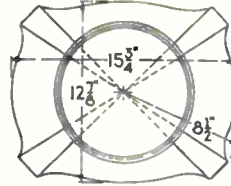
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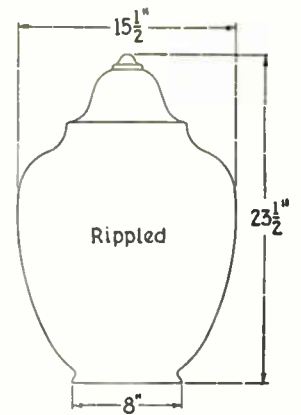
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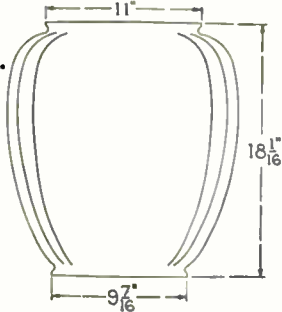
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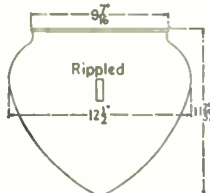
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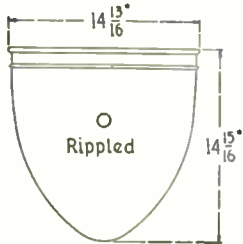
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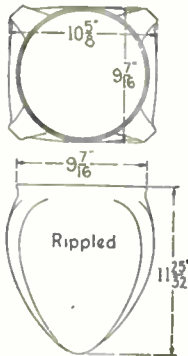
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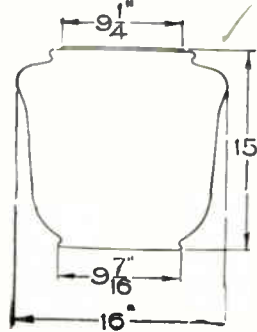
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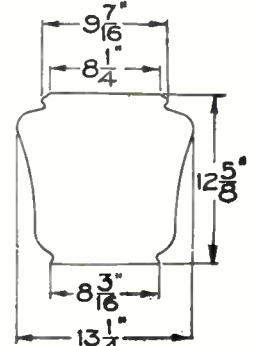
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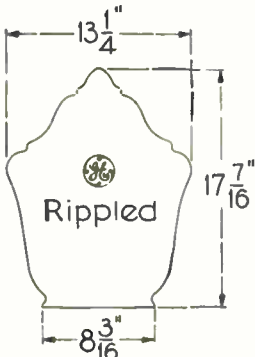
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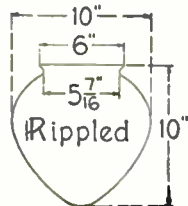
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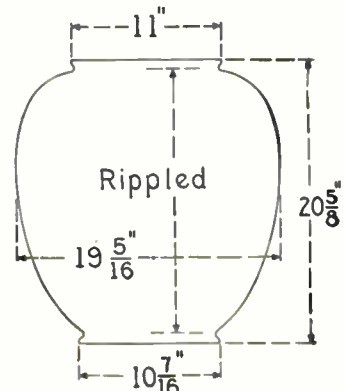
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No. 154



No. 141

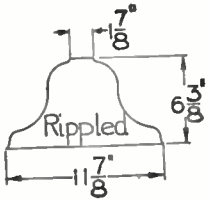


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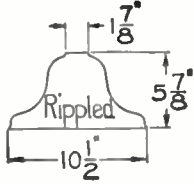
G-E Street Lighting Glassware

Outer Globes with Companion Canopies

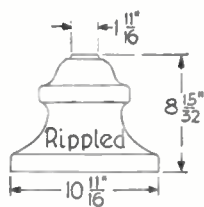
Dimensions



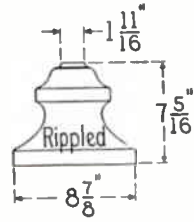
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Patent Applied for



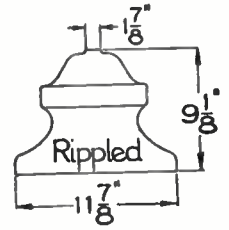
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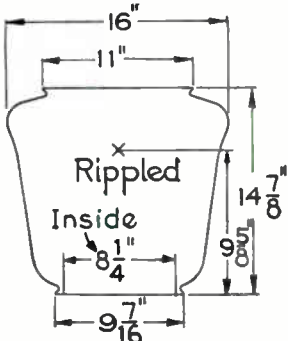
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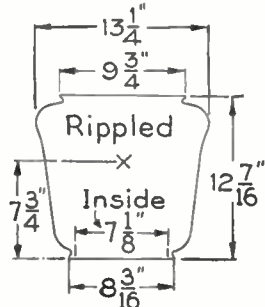
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Patent Applied for



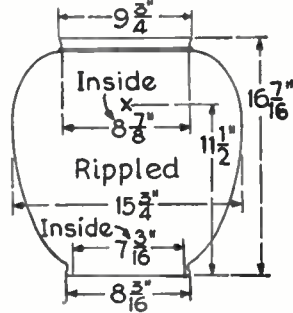
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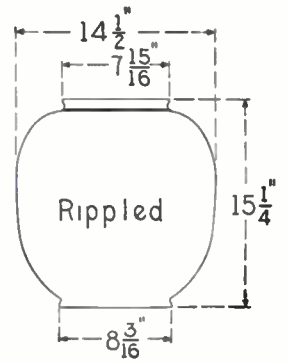
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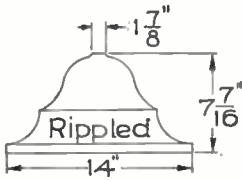
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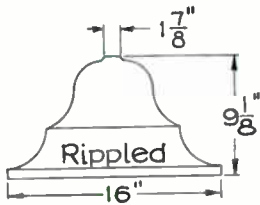
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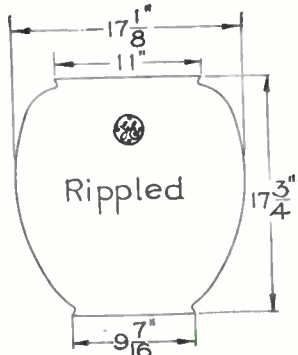
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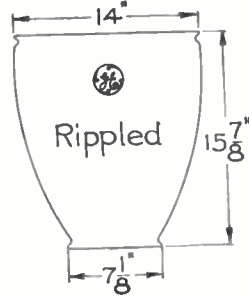
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Design Patent 55165



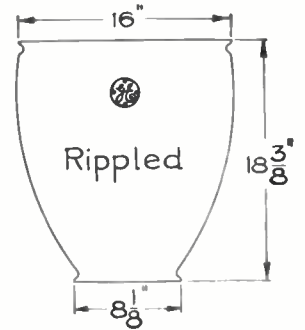
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Design Patent 55165



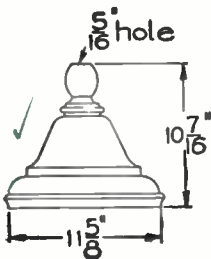
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Design Patent 50192



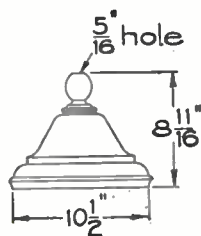
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Design Patent 57462



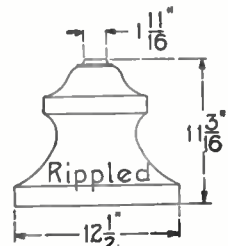
No. 124



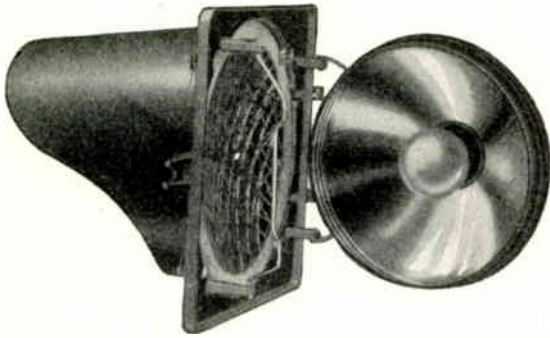
No. 1037
Design Patent 55303



No. 1039
Design Patent 55303



No. 1126

G-E Novalux Traffic Signals**Optical Units**

General Electric traffic signals all use the same interchangeable high efficiency optical unit. This standardized assembly will easily and correctly fit any traffic signal General Electric has ever built either of the fixed or the adjustable type.

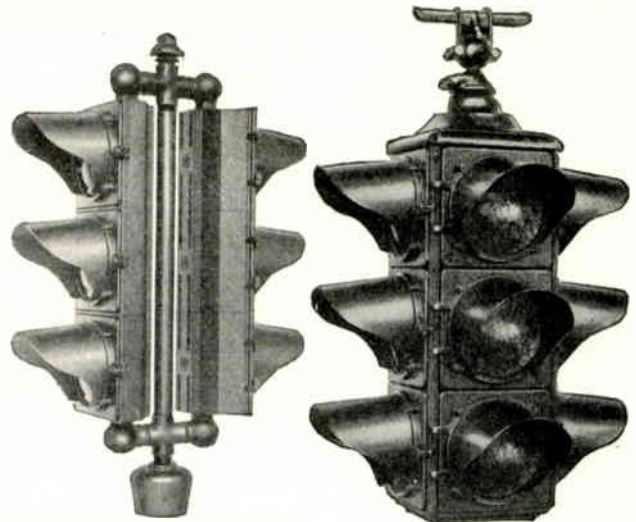
All of the parts of the optical unit are assembled on the door frame.

The reflector is of high quality silvered glass protected with a coating of electrolytically deposited copper. The design is phantom-proof, thus eliminating the illusion that the signal is lighted which sometimes occurs when the sun is shining directly into a traffic signal.

Eight-inch lens is made by the Holophane Company according to General Electric specifications. The convex outer surface is smooth to prevent accumulation of dirt or snow, while prisms, designed to distribute the light outward and downward into the field of vision, are on the concave inner surface sealed from dust and dirt.

Channel shaped extruded rubber lens gasket keeps the entire assembly permanently dust-tight.

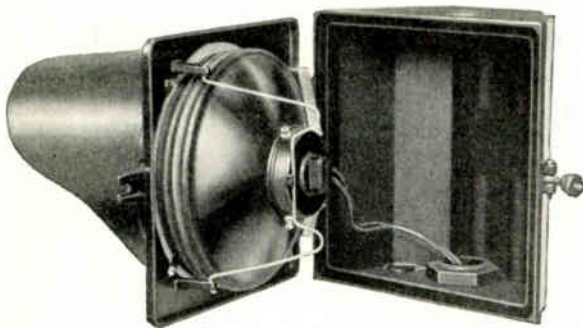
Fixed focus lamp socket insures the signal always being in correct focus. All traffic signal lamps today have the same accurate light center position eliminating the need for adjustable sockets.

G-E Novalux Traffic Signals**Adjustable Type****Fixed Type****Adjustable Type**

Die-cast aluminum housing is used to mount the optical unit and provide a weatherproof assembly. It is light, strong, and smooth in appearance. The signal section thus formed is readily adaptable to building up signals of a truly sectional design. Without the need of tie rods, the sections are joined together, by specially designed clamping plates and pipe bracket assemblies to give any desired combination of post top, span wire, mast arm, or vertical bracket signal.

Fixed Type

For mounting all signal faces in a single unit such as is used above the center of an intersection, a skeleton framework is used to assemble the optical units. Standard mountings are available for installing the signal from a span wire, mast arm, post top, pedestal or vertical bracket.

G-E Type D Novalux Traffic Controllers

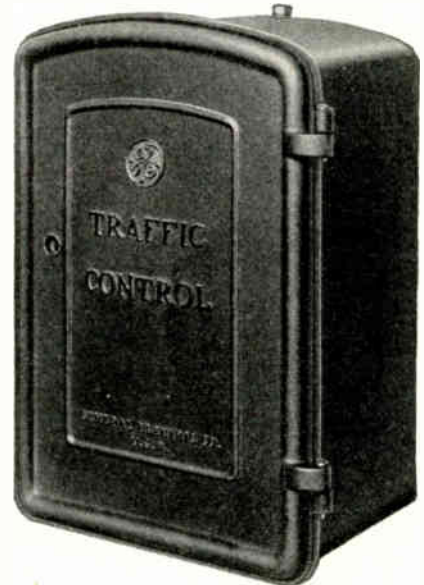
Has the following features:

- Aluminum visor shields lens.
- Spring wire bail holds reflector firmly against gasket.
- Scientifically designed reflector eliminates internal sun phantom.
- Die cast aluminum housing and door for long life.
- Single latch screw provides adequate gasket pressure and easy accessibility.
- Dark green baked enamel finish resists atmospheric conditions.

New wicking type door gasket keeps unit weatherproof.
Fixed focus socket insures renewal lamps being correctly focused.

Combined socket and reflector holder assures optical system is always in proper adjustment.

Channel shaped lens gasket keeps dust and moisture from collecting on reflector surface.



Used for isolated intersections or for interconnected systems in downtown areas where traffic problems are more complex. Equipped with weatherproof housing for pole mounting, as shown in above illustration.

Has automatic stop and go timer, with flasher; timing dial for color interval percentages; motor switch for progressive timing adjustment; manual to automatic transfer switch; signal shutdown switch; flashing amber switch; signal wiring terminals; and power supply terminals with fuses.

G-E Novalux Non-Interconnected Traffic Controllers

Basic controller consists essentially of a driving motor, timing dial, drum advance, and contact assembly.

Motor is of synchronous design making it possible to keep adjacent intersections in step for a progressive flow of traffic without the use of interconnecting cable.

Total time cycle can be varied from 30 to 120 seconds by changing only the one gear which is used to drive timing dial. Gears available in 5-second increments for 30 to 90 seconds and in 10-second increments from 90 to 120 seconds.

All color intervals are adjustable in steps of 1% of the total time cycle by changing the position of the timing keys on the calibrated timing dial.

Drum advance is accomplished by closing a pair of contacts with the timing keys. This actuates the solenoid which advances the drum assembly.

Any color sequence desired is quickly arranged by breaking out segments on slotted textolite cams which operate contacts.

Flasher

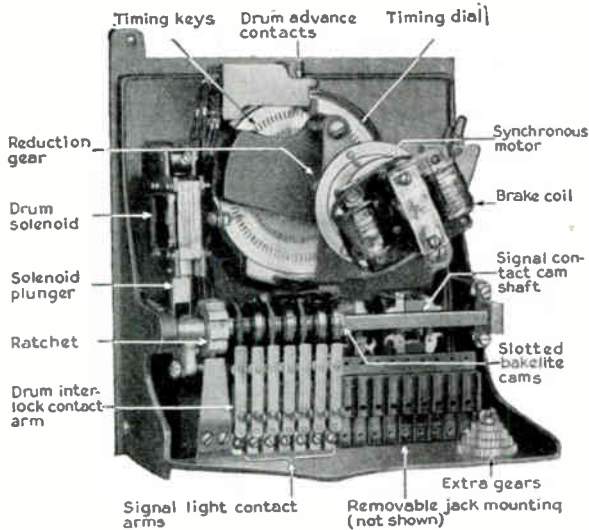


Separate heavy duty flasher contacts rated for 10 amperes continuous service are operated by a cam which is mounted directly on the motor shaft. This flasher provides for a caution signal, used in place of regular stop and go sequence during periods of light traffic.

Caution signal can be either amber-main, amber-cross, or amber-main, red-cross by making a simple change of connections in controller.

A time switch can be furnished in the controller for automatic control of flashing caution signal or signal shutdown.

Interior of 6-Circuit Timer



Constant speed synchronous driving motor. Built-in enclosed speed reduction gears have lifetime oil supply.

Swinging motor bracket facilitates gear changes. Motor brake coil is used in connection with automatic reset. This economical motor driving coil uses only 6 watts input. Additional cycle timing gears easily installed in a few seconds with simple tools. Gears are available for total cycle lengths from 30 to 120 seconds.

Ample room for additional signal contacts. Signal circuit contacts easily removed or replaced without tools. Made of fine silver, good for full 10-ampere a.c. lamp loads.

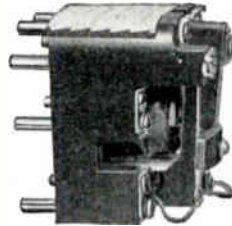
First contact interlocks drum with timing dial. Simple positive control of contacts opening and closing and any desired sequence provided by slotted Textolite drum cams.

Simple ratchet mechanism accurately regulates drum motion. Quick make and break contact action is given by this powerful drum advance solenoid. Timing dial contacts and automatic reset contacts assembled on Textolite block. Rotating timing dial for adjusting time percentage of each color interval. Cycle timing gear determines dial speed.

Lubrication required at only seven points, twice a year.

G-E Novalux Interconnected Traffic Controllers

By the addition of simple attachments, relays, etc., to the standard Type D controller, it may be used for operating an interconnected system. It is thus possible to control the entire network of controllers from a central point. By using one basic controller throughout, in both non-interconnected and interconnected locations, maintenance men need learn the operation of only one type of control and renewal parts are kept to an absolute minimum. All of the features considered essential to modern traffic control are provided.

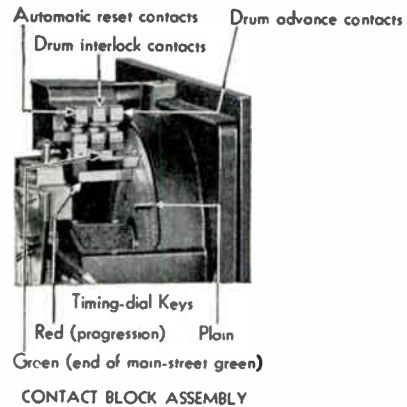


Flash and Shutdown Relay

REMOTE CONTROL OF FLASH, either amber-main, amber-cross, or amber-main red-cross can be provided by means of one or more relays in each intersection controller, depending on the number of circuits to be flashed. Each relay is double pole capable of transferring two circuits to flashing.

REMOTE CONTROL OF ALL-RED SIGNALS, either steady or flashing, for emergency or fire apparatus indication is accomplished by relays in the same manner as remote control of flash. Each relay will transfer two red circuits. Remote shutdown of signal requires one relay.

AUTOMATIC SINGLE RESET requires a simple addition to each controller consisting of an extra set of contacts, reset key, and a brake coil for the motor. This device automatically lines up all controllers so as to give a predetermined plan. Each controller is automatically checked each cycle. If one controller should get out of step for any reason, it is stopped for a part of the following cycle until it is again in step. This feature eliminates the necessity of setting controllers for progressive flow with a stop watch.



TRIPLE RESET is an expansion of the single reset providing three optional plans of progressive flow in the timer instead of only one. The particular progression desired at a given time is selected from a central point, either manually or by time switches. For example, the system can progressively give the green light to automobiles approaching the business district during the morning rush hour, give an average condition with no preference in either direction during most of the day, and then progressively give the green light during the evening rush hour to traffic going from business to residential area.

REMOTE CYCLE CHANGE is an attachment used to uniformly slow down the entire system. By increasing the cycle length it is possible to handle a larger volume of traffic and still keep cars moving in the progressive flow.

INTERCONNECTING CABLE must have one common conductor plus an additional conductor for each remotely controlled feature, except triple reset for which three additional conductors are necessary.

A SEPARATE MASTER is required when using remote cycle change. If remote cycle change is not used, one of the intersection controllers can be used to operate as both a combined master and intersection controller for all of the remotely controlled features.

G-E Novalux Traffic Controllers

Prices

No.	Each	Type of Controller
2TC22E37	\$186.00	Non-Interconnected
2TC22E213	207.00	Future-Interconnected
2TC22E221	225.00	Interconnected with Single Reset
2TC22R11	245.00	Interconnected with Single Reset and Remote Cycle Change
2TC22G40	235.00	Combined Master and Intersection with Single Reset
*2TC22G43	224.00	Remote Cycle Change Master

*Remote Cycle Change Master will not operate signals directly but is used for the purpose of supervising interconnected intersection controllers of the remote cycle-change type.

The following information applies to all other controllers:

Controllers listed above have six signal circuits and six intervals. Similar controllers available with as many as 15 signal circuits and 16 intervals. Standard equipment includes five gears, flasher, manual shutdown switch, manual motor switch, and manual-to-automatic transfer switch.

Non-interconnected and future interconnected have manual flash switch, others have remote flash relays.

Interconnected controllers have remote shutdown relay; future interconnected has jacks only for shutdown relay; both types have single automatic reset.

Ordering Directions

Specify model number and color sequence desired (for example, green-amber-non-overlap).

Specify whether pole plates or clamps are required. Give diameter.

G-E Novalux Traffic Control Accessories

For installation on any controller whether interconnected or non-interconnected.

Radio Interference Suppressors



Can be placed across the flasher contacts to reduce radio noise.

Manual Switches and Cord



Manual switch and cord may be used by a traffic officer or other person with authority, to control the length of each color period. It consists of a simple grip switch enclosed in vulcanized soft rubber with sufficient cord to enable the officer to move about freely and take positions where he can see traffic to best advantage. The sequence of colors is the same as that obtained with automatic timing, the changes being made by simply squeezing the handle. This is very useful for school zones, etc.

Any color sequence desired requiring not over 15 circuits and 16 intervals can be set up on the Type D. This provides ample circuits for walk lights, arrows, and special circuits.

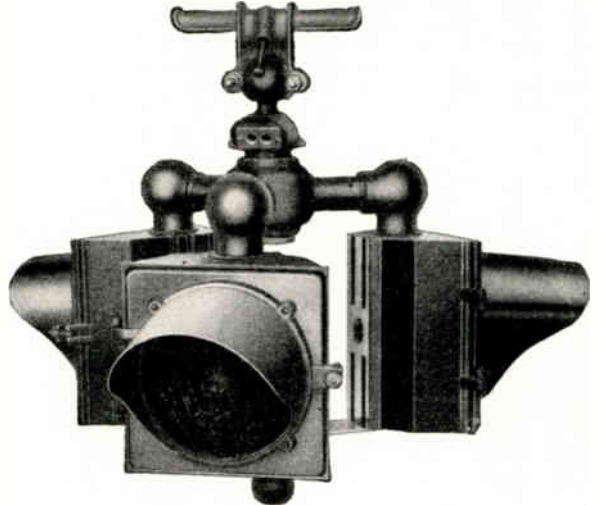
Type D controller is extremely flexible, making it easily adaptable to special control problems.

Further information is available upon application.

G-E Novalux Traffic Beacons

Novalux Beacons are used as a visual warning of danger points to motorists and pedestrians. Brilliant flashes of light from these beacons capture the attention, warning the motorist that caution is necessary. They use the same high efficiency optical unit as the Novalux traffic signals.

Adjustable Type Beacons



Adjustable Beacon uses one or more of the standard signal section units. These are held by bracket assemblies that can be arranged for turning the separate units in whatever directions are required. Can be supplied for mounting from a span wire, mast arm or post top.

Fixed Type Beacons



Fixed Type Beacon uses a rigid frame mounting giving a warning indication in two, three, or four directions as may be desired.

Can be supplied for mounting from a span wire, mast arm or post top.

Red or amber lenses may be used.

Weatherproof Flasher Mechanisms

Complete in enclosing case.

Can be mounted on the pole from which the beacon is suspended. This arrangement gives best accessibility for servicing of the flasher. A synchronous motor drive is used to operate the same heavy duty flashing contacts used in Type D controller.

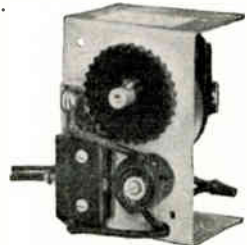
Fuse protection and a key operated switch which can be turned without opening the housing are included.



Special Flasher Mechanisms

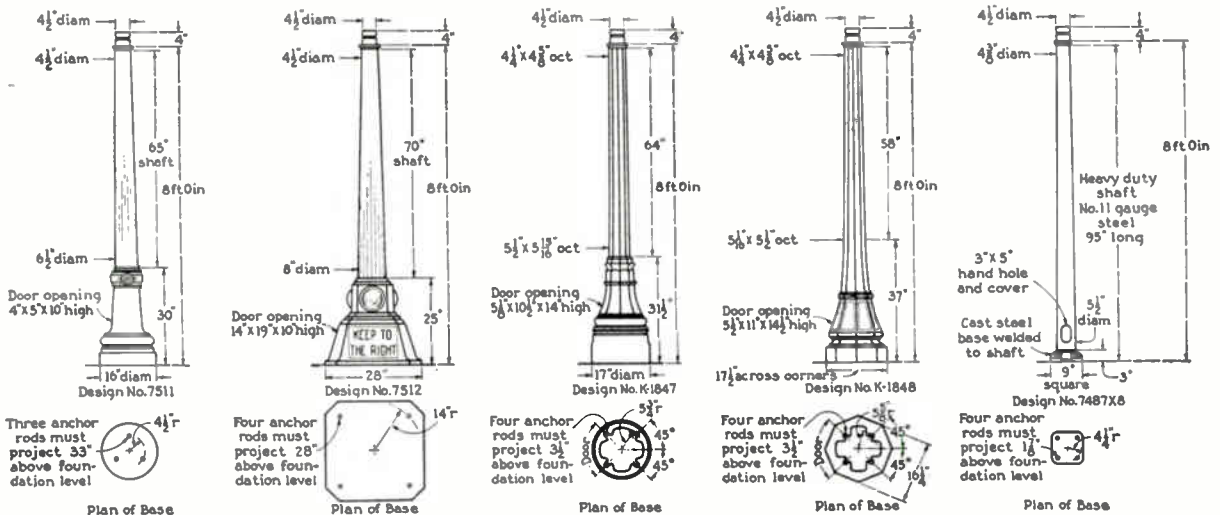
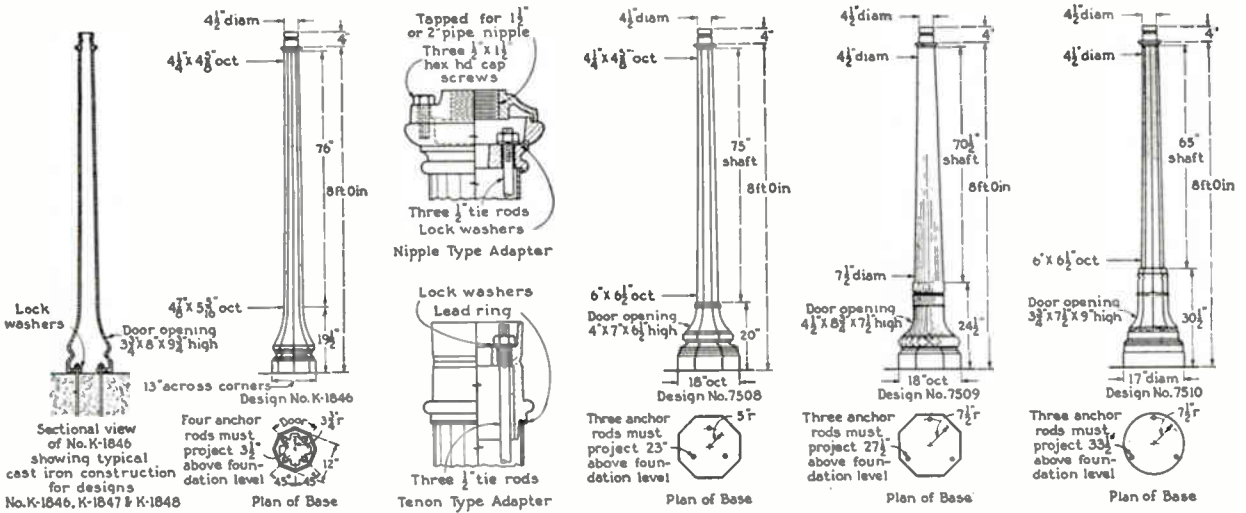
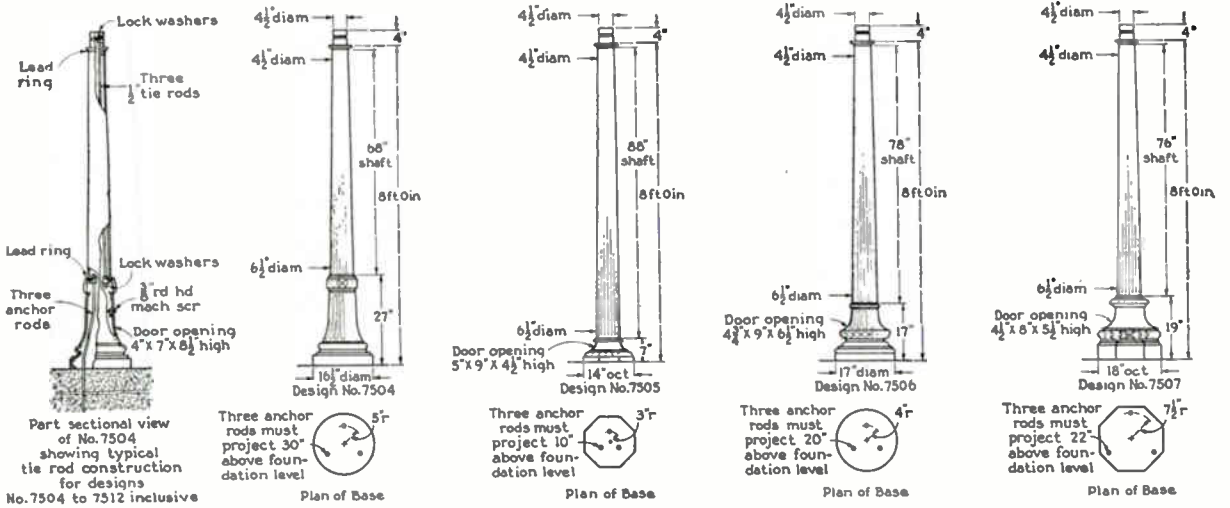
Will fit in the fixed type beacon only. May be used to make an installation complete in one unit.

Radio interference suppressors are included in both flashers.



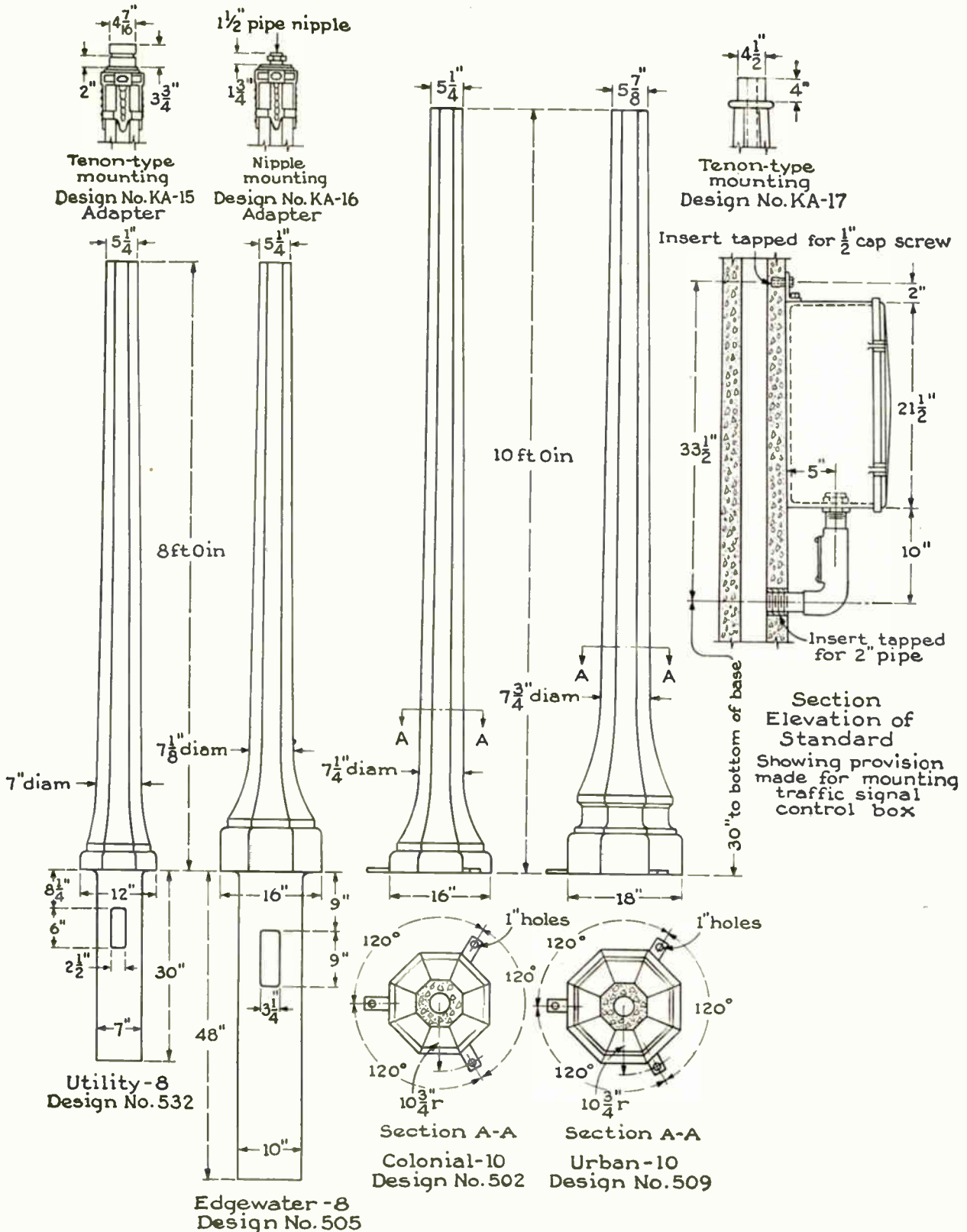
G-E Novalux Traffic Signal Poles

Traffic Signal Poles are available in a variety of designs constructed of steel, cast iron, or concrete. One may be chosen which matches or harmonizes with local lighting standards. These poles can be furnished with 4½-inch diameter tenon top to accommodate a slip fitter type of signal or with a pipe nipple mounting.

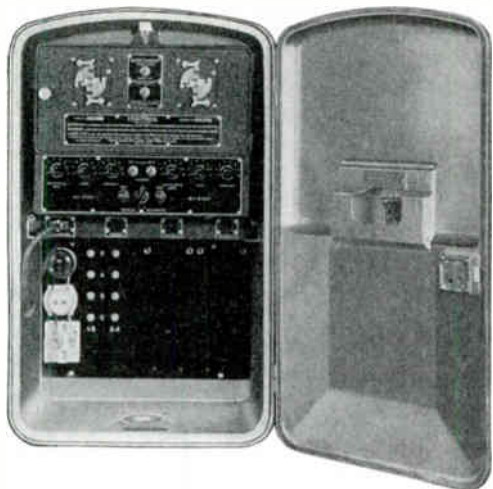


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Horni Vehitrol Control Systems



Open View Fully Actuated Vehitrol

Regulation and control of vehicle and pedestrian movement by means of themselves, vehicle actuated control, is accomplished by Vehitrol in conjunction with the Horni magnetic detectors and detector relays. Vehitrol form of control will efficiently handle intersections of every type and under all conditions of traffic flow.

Using Vehitrol, the "go" signal rests on the intersection from which the last call originated. Movement of traffic is self-controlled by means of detection units installed in the highways. A vehicle passing the detection point will actuate the control mechanism to assure that vehicle of a "go" period as soon as consistent with the demand from opposing streets. Each signal cycle will vary in overall length, and will have varying individual sections of the cycle in accordance with the traffic demand. This is subject to the limitation that a predetermined adjustable minimum period and maximum period (in the presence of opposing actuations) are set for each direction.

Push buttons can be installed to create similar response by the controller to pedestrian actuation as to vehicular actuation.

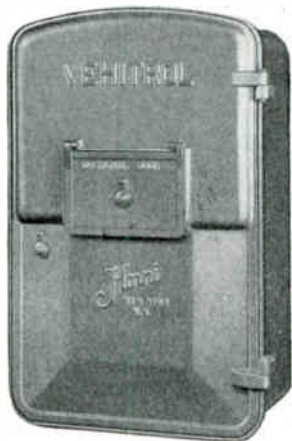
The standard Vehitrol is for two-movement fully actuated operation. A Vehitrol can also be furnished:

1. For any number of movements.
2. Equipped for manual operation, when required.
3. With a separate period to control pedestrian traffic.
4. To provide progressive vehicular travel without the use of interconnecting wires.
5. With a Horni motor flasher mechanism for use during "off" signal hours.
6. To take care of left turns.

Vehitrol can be connected to and will operate existing signals or any make of signal light. It can be used as a prefixed controller or semi-actuated controller at will.

Standard assembly is mounted in an aluminum alloy cast housing arranged for terminal housing, pedestal, wall or pole mounting. Space is provided for detector relays.

Prices and bulletin furnished upon application.



Horni Vehi-Cycle Control Systems



Vehi-Cycle form of control will be found desirable and efficient at any intersection where cross traffic occurs intermittently. It is also applied to pedestrian crossings adjacent to industrial plants, schools, institutions, etc., or vehicle exits or entrances to industrial yards, bridges, etc.

Using Vehi-Cycle, signal lights are normally out in all directions. Movement of cross traffic is controlled by detection units placed in the cross road.

A vehicle passing through the detection point will immediately cause the signal light circuits to become energized and indicate their signals in a predetermined sequence. After this sequence, the signal circuit will become dormant until such time as another actuation is registered. The sequences will continue just as long as cross traffic registers through the detection point.

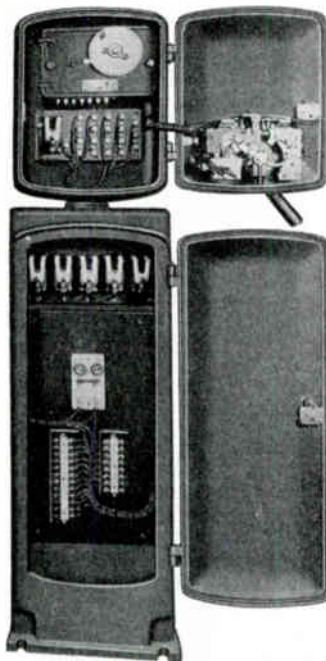
Vehi-Cycle may be equipped with a manual control switch permitting manual control of the signals.

Control units can be arranged to give required color sequences.

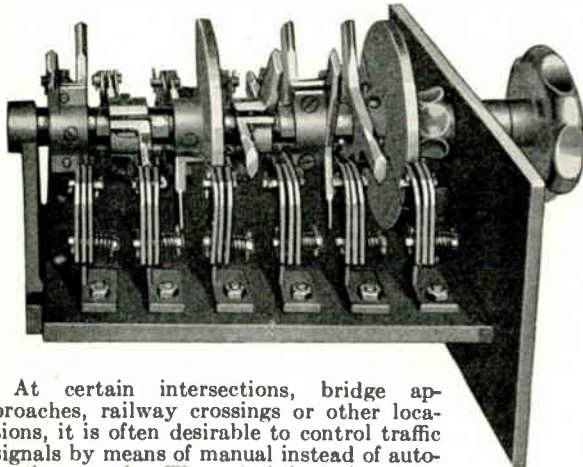
The complete Vehi-Cycle control is mounted in a cast aluminum alloy weatherproof housing. The door is equipped with a spring bolt lock. Key is provided. Bottom of housing arranged for wiring entrance.

Housing can be furnished arranged for terminal housing, pedestal, post or wall mounting.

Prices and bulletin furnished upon application.



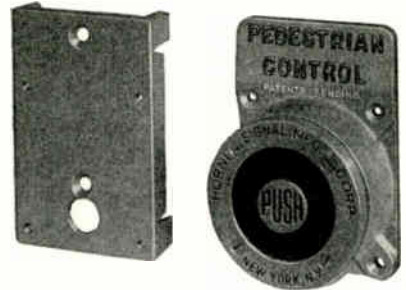
Horni Manual Control Switches



At certain intersections, bridge approaches, railway crossings or other locations, it is often desirable to control traffic signals by means of manual instead of automatic controls. The switch is designed for ease of operation and long service under the most severe conditions. The heavy rotary blades make an even, firm, wiping contact between pairs of self-aligning fingers which float on a spring pressure assembly. The blades are firmly held in each indexed circuit position by means of a spring ball detent.

Can be arranged for color sequences as required.
Prices furnished upon application.

Horni Weatherproof Push Buttons



Designed for pedestrian notification for right-of-way in a traffic signal controller. Recommended for use under the most severe climatic conditions. It is not affected by salt water.

The housing is of aluminum alloy cast in two pieces and arranged for flat surface or pole mounting. An adjustable bronze adapter is provided.

Dimensions, $3\frac{1}{4} \times 4\frac{3}{4}$ inches.

Standard aluminum finish. Special finish extra.

Can be furnished without lettering and equipped with instruction plate holder, or without the indication plate.

Weight, 2 pounds.

Prices furnished upon application.

Horni Vehicle Detection Equipment



Type MDW Detector Relay

Magnetic vehicle detection equipment consists basically of two devices; the detector unit and the detector relay. This equipment forms part of a complete Vehitrol and Vehi-Cycle traffic control installation. In addition to their application in the detection and control of traffic movement over public thoroughfares, the magnetic detector and detector relay combination has a wide range of use in the detection and safe movements of vehicular traffic through industrial, institutional, and private driveways. This combination will detect traffic and provide means whereby a secondary circuit may be used to operate devices for controlling warning signals, opening and closing doors, etc.

Detector-detector relay combinations of exceptionally high sensitivity may be used for signalling the encroachment of vehicles or other ferrous bodies upon property boundaries, etc.



The vehicle detector units are installed just beneath the highway. Their effectiveness is not interfered with by proximity of roadway reinforcements, parked cars, etc. Operation is not interfered with by ice or snow. Ageing of the units does not affect their sensitivity. Units may be installed without disturbing the highway surface by boring a hole or installing a duct beneath the road-bed from the edge of the road and placing the unit in position, or if desired they may be installed by placing units directly in the road-bed.

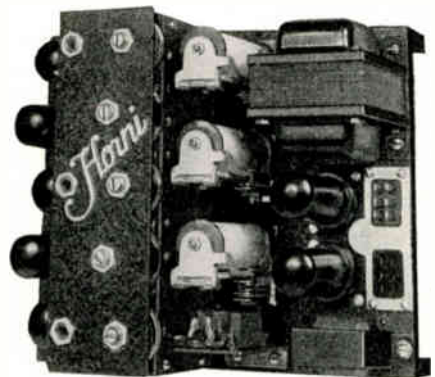
Units are enclosed in a substantial brass shell, properly sealed in place and do not require maintenance after installation. Sealed-in leads are provided.

One unit is required for non-directional detection. Two units installed approximately three feet apart, parallel to each other, are required for directional detection.

Type MDW Detector Relays

This directional detector relay contains an extremely sensitive moving coil relay of highest grade instrument construction for primary response to impulses from the magnetic detector. The moving coil relay in turn controls a secondary relay which closes a pair of contacts upon each actuation. Power consumption is negligible. Single and duplex relays for use with non-directional detectors are available in the same size case and will mount interchangeably with the MDW directional relay.

Type VD-1 Electronic Detector Relays



A vacuum tube type relay designed for low power consumption. It is adjustable over a wide range of sensitivity. Other types are available for use with non-directional detectors. In addition to the relays described above, a Horni battery-powered detector relay can be supplied for special applications where alternating current is not readily available.

Quotations will be furnished on modified units for special applications.

Prices and bulletin furnished upon application.

Horni Sectional Traffic Signals

Adjustable and Non-Adjustable

The Horni Traffic Signal units are of artistic design. Careful consideration has been given to efficiency and durability. All units are weather and dustproof. Particular care has been given the optical system to produce an unsurpassed strength of signal indication.

The optical system is a compact gasketed unit, which, when in position, is the door. The complete optical unit is interchangeable between the adjustable and non-adjustable sections. The construction provides convenient and easy means for opening the complete unit for inspection and lamp replacement.

The lamp receptacle is adjustable and includes a grip to prevent lamp loosening due to vibration. When shipped, the receptacle is correctly positioned for the standard 60-watt traffic signal lamp.

The 8 $\frac{3}{8}$ -inch prismatic diffusing lenses are selected for purity of color, high transmission and efficient distribution of light slightly downward and to the sides.

The adjustable unit consists of a die-cast aluminum alloy housing into which is fitted a complete optical unit and terminal block. The housing is a complete case of exceptional strength and light weight. One complete unit is required for each indication. This unit may be used as a one-color one-way signal. Two or more units can readily be assembled for a multi-indication signal. By means of combination bracket supports, such signals can be grouped for multi-directional indication. The units are secured to each other by means of lock nuts which permit the individual sections being adjusted to any direction. The top and bottom of each unit is so arranged that fittings for the various mountings are conveniently received. This type of unit will fit any traffic situation and can easily be adjusted to meet changing conditions.

The non-adjustable unit consists of an aluminum alloy cast cubical skeleton frame in which is mounted the required optical units. The top and bottom castings are secured to

the skeleton by means of large machine screws. Top and bottom castings are provided to suit the mounting arrangement.

One unit can be used for one, two, three or four-way indication. Two or more units can readily be assembled for a multi-indication signal. The units are secured to each other by means of four bolts. This type of signal is used where two streets cross at a 90° angle, and main arteries where conditions of visibility permit. It is especially suitable in less congested areas where special treatment is not required.

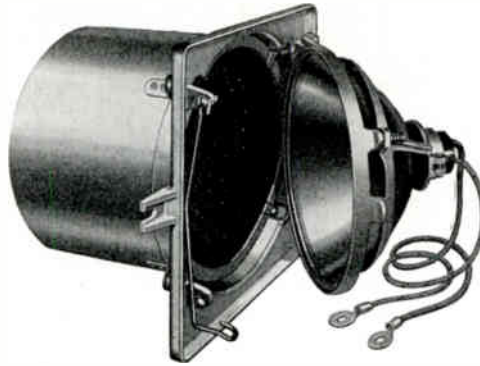
The detachable visor is made of heavy rolled aluminum, 7 inches long. It is designed with a slight downward tilt to overcome sun glare and to limit indication to the stream of traffic it controls. Visors can be furnished for extraordinary conditions.

Non-adjustable signals using one or two-way indication can be equipped with a motor-driven lamp-changing mechanism. This arrangement has four reflector units mounted on a common four-way optical assembly independent of the door and lenses. When a lamp fails, the motor automatically turns the complete assembly and places another reflector and lamp in the proper position. Automatic replacement will be made three times in a one-way light and once in a two-way light.

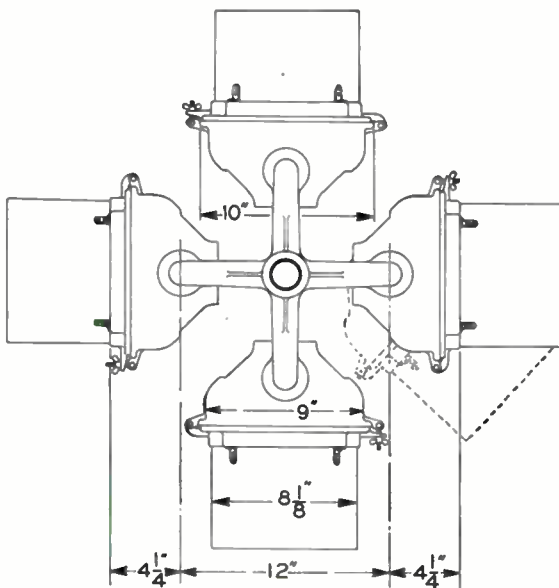
The signals can be furnished arranged for span wire suspension, mast arm suspension, post, vertical or horizontal bracket and pedestal mounting.

Each signal unit or multi-unit arrangement is wired ready for installation. Terminals are marked to facilitate field work.

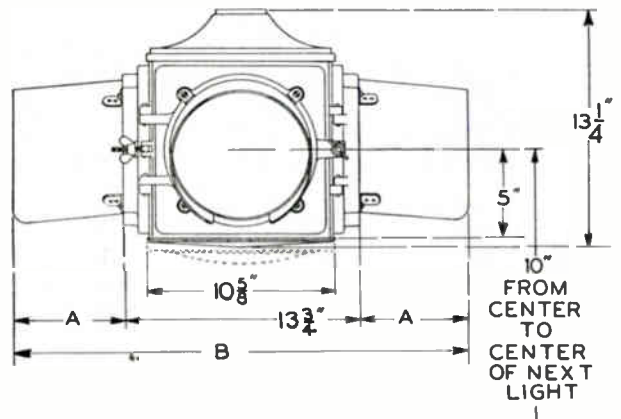
All units are finished with two coats of baked enamel, thus affording additional protection from weather. Standard finish is aluminum or green, as ordered. Special finish to order.



Complete Optical Unit



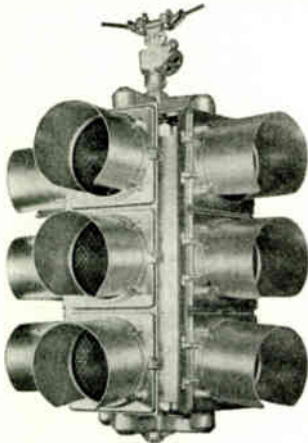
Top View—Four-Way Adjustable Unit



Non-Adjustable Unit

Horni Sectional Adjustable Traffic Signals

With 8³/₈-Inch Red, Amber and Green Unlettered Lenses, without Lamps



No. SA-43

Span Wire Suspension with Entrance Fitting and Hanger				
No.	1-Way	2-Way	3-Way	4-Way
Each	SA-13	SA-23	SA-33	SA-43
Each	\$53.20	114.00	169.00	224.00
Weight	32	63	91	122

Mast Arm Suspension with Entrance Fitting and Hanger				
No.	1-Way	2-Way	3-Way	4-Way
Each	MA-13	MA-23	MA-33	MA-43
Each	\$57.80	118.60	173.60	228.60
Weight	30	61	89	120

Vertical Bracket without Pole Clamps				
No.	1-Way	2-Way	3-Way	4-Way
Each	VA-13	VA-23	VA-33	VA-43
Each	\$54.00	116.00	171.00	226.00
Weight	34	65	95	136

Post with 4 ¹ / ₂ -Inch Slip Fitter Underground Feed				
No.	1-Way	2-Way	3-Way	4-Way
Each	PAT-13-UG	PAT-23-UG	PAT-33-UG	PAT-43-UG
Each	\$54.20	115.00	170.00	225.00
Weight	37	68	96	127

Post with 4 ¹ / ₂ -Inch Slip Fitter Overhead Feed				
No.	1-Way	2-Way	3-Way	4-Way
Each	PAT-13-OH	PAT-23-OH	PAT-33-OH	PAT-43-OH
Each	\$57.60	119.60	174.60	229.60
Weight	38	69	97	128

Post with 1 ¹ / ₂ -Inch Nipple Underground Feed				
No.	1-Way	2-Way	3-Way	4-Way
Each	PAU-13-UG	PAU-23-UG	PAU-33-UG	PAU-43-UG
Each	\$49.80	110.60	165.60	220.60
Weight	26	57	85	116

Post with 1 ¹ / ₂ -Inch Nipple Overhead Feed				
No.	1-Way	2-Way	3-Way	4-Way
Each	PAU-13-OH	PAU-23-OH	PAU-33-OH	PAU-43-OH
Each	\$53.20	115.20	170.20	225.20
Weight	27	58	86	117

Horizontal Bracket without Pole Clamps without Backboard				
No.	1-Way			
Each	HA-13			
Each	\$61.60			
Weight	55			

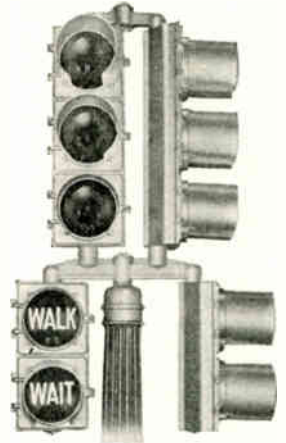
Pedestal with Sub-Base and Base Light Underground Feed				
No.	2-Way	3-Way	4-Way	
Each	BAR-23-UG	BAR-33-UG	BAR-43-UG	
Each	\$230.00	285.00	340.00	
Weight	291	319	347	

Pedestal with Sub-Base and Base Light Overhead Feed				
No.	2-Way	3-Way	4-Way	
Each	BAR-23-OH	BAR-33-OH	BAR-43-OH	
Each	\$234.60	289.60	344.60	
Weight	292	320	348	

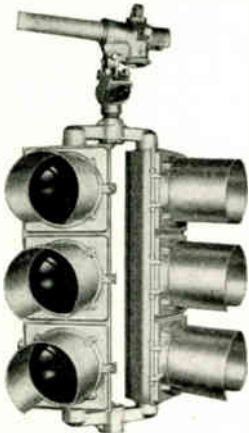
Three-Light, Less Mounting Fittings				1-Way
No.				AA-13
Each				\$28.00
Weight				24

Code numbers refer to 3-section units only. For other than 3 sections in a signal, substitute sections required for last numeral "3" in each instance. Change list price as follows: For 1-way add or deduct \$16.00; for 2-way add or deduct \$32.00; for 3-way add or deduct \$48.00; for 4-way add or deduct \$64.00. Prices on 5 and 6-way upon application.

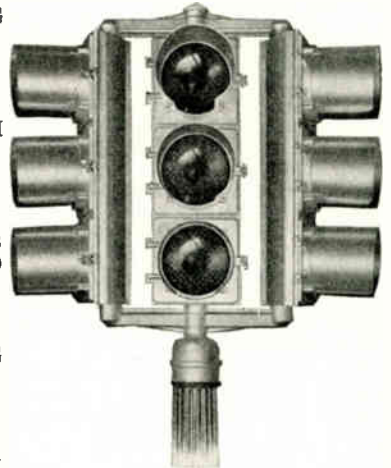
For each arrow or lettered lens add \$1.00. Square foundation form for pedestal \$51.00 extra; round foundation, \$40.00 extra.



No. PAT-23-UG With Pedestrian Signals



No. MA-23



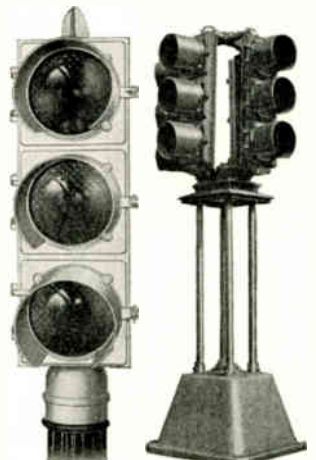
No. PAT-33-UG Three In Line



No. VA-13



No. HA-13



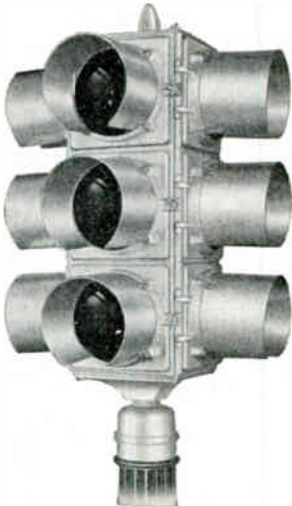
No. TAU-13-UG No. BAR-43-UG

Horní Sectional Non-Adjustable Traffic Signals

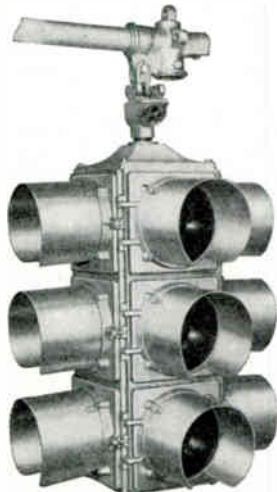
With 8 3/4-Inch Red, Amber and Green Unlettered Lenses, without Lamps



No. SF-43



No. PFT-43-UG



No. MF-43

Span Wire Suspension with Entrance Fitting and Hanger without Base Light

	2-Way	3-Way	4-Way
No.	SF-23	SF-33	SF-43
Each.	\$114.00	135.00	156.00
Weight..... pounds	55	60	65

Span Wire Suspension with Entrance Fitting and Hanger with Base Light

	2-Way	3-Way	4-Way
No.	SFR-23	SFR-33	SFR-43
Each.	\$126.00	147.00	168.00
Weight..... pounds	60	65	70

Mast Arm Suspension with Entrance Fitting and Hanger without Base Light

	2-Way	3-Way	4-Way
No.	MF-23	MF-33	MF-43
Each.	\$118.60	139.60	160.60
Weight..... pounds	53	58	63

Mast Arm Suspension with Entrance Fitting and Hanger with Base Light

	2-Way	3-Way	4-Way
No.	MFR-23	MFR-33	MFR-43
Each.	\$130.60	151.60	172.60
Weight..... pounds	58	63	68

Vertical Bracket without Pole Clamps

	2-Way	3-Way	4-Way
No.	VF-23	VF-33	VF-43
Each.	\$116.00	137.00	158.00
Weight..... pounds	62	67	72

Post with 4 1/2-Inch Slip Fitter Underground Feed

	2-Way	3-Way	4-Way
No.	PFT-23-UG	PFT-33-UG	PFT-43-UG
Each.	\$117.20	138.20	159.20
Weight..... pounds	68	76	84

Post with 4 1/2-Inch Slip Fitter Overhead Feed

	2-Way	3-Way	4-Way
No.	PFT-23-OH	PFT-33-OH	PFT-43-OH
Each.	\$120.60	141.60	162.60
Weight..... pounds	69	77	85

Post with 1 1/2-Inch Nipple Underground Feed

	2-Way	3-Way	4-Way
No.	PFU-23-UG	PFU-33-UG	PFU-43-UG
Each.	\$111.80	132.80	153.80
Weight..... pounds	51	59	67

Post with 1 1/2-Inch Nipple Overhead Feed

	2-Way	3-Way	4-Way
No.	PFU-23-OH	PFU-33-OH	PFU-43-OH
Each.	\$115.20	136.20	157.20
Weight..... pounds	52	60	68

Pedestal with Base Light Underground Feed

	2-Way	3-Way	4-Way
No.	BFR-23-UG	BFR-33-UG	BFR-43-UG
Each.	\$227.20	248.20	269.20
Weight..... pounds	307	312	317

Pedestal with Base Light Overhead Feed

	2-Way	3-Way	4-Way
No.	BFR-23-OH	BFR-33-OH	BFR-43-OH
Each.	\$230.60	251.60	272.60
Weight..... pounds	308	313	318

Code numbers refer to 3-section units only. For other than 3 sections in a signal, substitute sections required for last numeral "3" in each instance. Change list price as follows: For 2-way add or deduct \$32.00; for 3-way add or deduct \$39.00; for 4-way add or deduct \$46.00.

For each arrow or lettered lens add \$1.00. Square foundation form for pedestal \$51.00 extra; round foundation, \$40.00 extra. Horní standard insignia plates \$5.00 per face extra.

Horn Insignia Signals

With 8 1/4-Inch Amber Unlettered Lenses, without Lamps



No. MA-41



No. MFR-41



No. BFR-41-UG

Standard traffic signal units are recommended for use wherever a single optical unit is required for direction of traffic. They may be used for steady or flashing lights. Any flashing or steady combination can be furnished. A-44 Flasher, \$25.00 extra. A-46 Filter, \$8.00 extra.

The adjustable unit is particularly advantageous at irregular intersections, as the individual units may be directed and set as required.

The non-adjustable units are used at all except irregular intersections. Standard finish is black.

Prices do not include appended insignia plates, flasher or foundation form.

For each lettered or arrow lens, add \$1.00. Red or green unlettered lenses can be furnished when ordered without additional cost.

Square foundation form for pedestal \$51.00 extra; round foundation, \$40.00 extra.

Horn standard insignia plates \$5.00 per face extra.

Adjustable

No.	Span Wire with Entrance Fitting and Hanger			
	1-Way	2-Way	3-Way	4-Way
Each	SA-11	SA-21	SA-31	SA-41
Weight...pounds	\$21.20	45.40	66.10	86.80
	17	32	45	56
No.	Mast Arm with Entrance Fitting and Hanger			
	1-Way	2-Way	3-Way	4-Way
Each	MA-11	MA-21	MA-31	MA-41
Weight...pounds	\$25.80	50.00	70.70	91.40
	14	29	40	53
No.	Vertical Bracket without Pole Clamps			
	1-Way	2-Way	3-Way	4-Way
Each	VA-11	VA-21	VA-31	VA-41
Weight...pounds	\$20.20	52.00	75.00	98.00
	19	34	47	58
No.	Post Mounting with 4 1/2-Inch Slip Fitter Underground Feed			
	1-Way	2-Way	3-Way	4-Way
Each	PAT-11-UG	PAT-21-UG	PAT-31-UG	PAT-41-UG
Weight...pounds	\$22.20	51.00	74.00	97.00
	20	35	46	59
No.	Post Mounting with 4 1/2-Inch Slip Fitter Overhead Feed			
	1-Way	2-Way	3-Way	4-Way
Each	PAT-11-OH	PAT-21-OH	PAT-31-OH	PAT-41-OH
Weight...pounds	\$25.60	55.60	78.60	101.60
	22	37	48	61
No.	Post Mounting with 1 1/2-Inch Nipple Underground Feed			
	1-Way	2-Way	3-Way	4-Way
Each	PAU-11-UG	PAU-21-UG	PAU-31-UG	PAU-41-UG
Weight...pounds	\$17.80	46.60	69.60	92.60
	11	26	37	50
No.	Post Mounting with 1 1/2-Inch Nipple Overhead Feed			
	1-Way	2-Way	3-Way	4-Way
Each	PAU-11-OH	PAU-21-OH	PAU-31-OH	PAU-41-OH
Weight...pounds	\$21.20	51.20	74.20	97.20
	13	28	39	52
No.	Pedestal with Base Light Underground Feed			
	1-Way	2-Way	3-Way	4-Way
Each	BAR-11-UG	BAR-21-UG	BAR-31-UG	BAR-41-UG
Weight...pounds	\$136.00	166.00	189.00	212.00
	248	263	274	287
No.	Pedestal with Base Light Overhead Feed			
	1-Way	2-Way	3-Way	4-Way
Each	BAR-11-OH	BAR-21-OH	BAR-31-OH	BAR-41-OH
Weight...pounds	\$140.60	170.60	193.60	216.60
	250	265	276	289
Single Light, less Mounting Fittings				
No.	AA-11			
Each	\$16.00			
Weight...pounds	8			

Prices for 5-way and 6-way furnished upon application.

Non-Adjustable

No.	Span Wire with Entrance Fitting and Hanger without Base Light			
	1-Way	2-Way	3-Way	4-Way
Each	SF-11	SF-21	SF-31	SF-41
Weight...pounds	\$43.00	50.00	57.00	64.00
	27	30	33	36
No.	Span Wire with Entrance Fitting and Hanger with Base Light			
	1-Way	2-Way	3-Way	4-Way
Each	SFR-11	SFR-21	SFR-31	SFR-41
Weight...pounds	\$55.00	62.00	69.00	76.00
	31	34	37	40
No.	Mast Arm with Fitting and Hanger without Base Light			
	1-Way	2-Way	3-Way	4-Way
Each	MF-11	MF-21	MF-31	MF-41
Weight...pounds	\$47.60	54.60	61.60	68.60
	24	27	30	33
No.	Mast Arm with Entrance Fitting and Hanger with Base Light			
	1-Way	2-Way	3-Way	4-Way
Each	MFR-11	MFR-21	MFR-31	MFR-41
Weight...pounds	\$59.60	66.60	73.60	80.60
	27	31	34	37
No.	Post Mounting with 4 1/2-Inch Slip Fitter Underground Feed			
	1-Way	2-Way	3-Way	4-Way
Each	PFT-11	PFT-21	PFT-31	PFT-41
Weight...pounds	\$46.20	53.20	60.20	67.20
	31	34	37	40
No.	Post Mounting with 4 1/2-Inch Slip Fitter Overhead Feed			
	1-Way	2-Way	3-Way	4-Way
Each	PFT-11-OH	PFT-21-OH	PFT-31-OH	PFT-41-OH
Weight...pounds	\$49.60	56.60	63.60	70.60
	33	36	39	42
No.	Post Mounting with 1 1/2-Inch Nipple Underground Feed			
	1-Way	2-Way	3-Way	4-Way
Each	PPU-11-UG	PPU-21-UG	PPU-31-UG	PPU-41-UG
Weight...pounds	\$40.80	47.80	54.80	61.80
	21	24	27	30
No.	Post Mounting with 1 1/2-Inch Nipple Overhead Feed			
	1-Way	2-Way	3-Way	4-Way
Each	PPU-11-OH	PPU-21-OH	PPU-31-OH	PPU-41-OH
Weight...pounds	\$44.20	51.20	58.20	65.20
	23	26	29	32
No.	Pedestal with Base Light Underground Feed			
	1-Way	2-Way	3-Way	4-Way
Each	BFR-11-UG	BFR-21-UG	BFR-31-UG	BFR-41-UG
Weight...pounds	\$156.20	163.20	170.20	177.20
	276	279	282	285
No.	Pedestal with Base Light Overhead Feed			
	1-Way	2-Way	3-Way	4-Way
Each	BFR-11-OH	BFR-21-OH	BFR-31-OH	BFR-41-OH
Weight...pounds	\$159.60	166.60	173.60	180.60
	286	289	292	295

Horni Non-Adjustable Direction Signals

With 5½-Inch Unlettered Optical Lenses



No. BFM-41

No. BFM-41
Without Hoods



No. SFM-41

No. B-1039 Horni Pedestal Beacons

Designed for use on safety islands or where it is advantageous to mount a beacon in the center of an intersection on a substantial concrete foundation forming a pivot around which vehicular traffic must turn.

Arranged for underground feed.

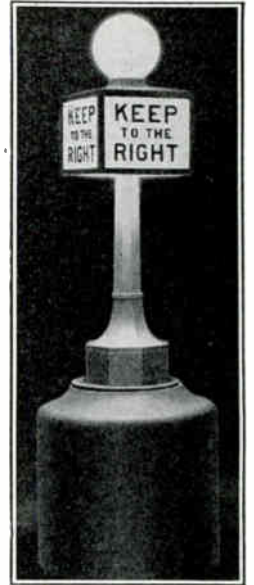
The globe and glass insignia plates are mounted on an ornamental metal post. The globe is illuminated by a single lamp, with separate illumination for the insignia plates.

Standard finish is aluminum.

Price does not include flasher, foundation form or lamps. Round foundation form \$40.00 extra.

Weight, 75 pounds.

No. B-1039.....each \$160.00



No. GFM-41

A single lamp is used to illuminate the signal and appended insignia plate.

Standard finish is black.

When ordering, specify type of circuit, direction of indication and whether red, green or amber lenses are required.

Code numbers refer to 1-way indications only. For additional indication, substitute number required for first numeral "1" of code number and add \$5.00 for each addition. Prices for multiple circuit: add \$10.00 for street series.

Horni standard insignia plates can be furnished at \$5.00 per face extra.

Span Wire with Entrance and Hanger

No.	1-Way	SFM-11
Each		\$35.00
Weight.....		15 pounds

Mast Arm with Entrance and Hanger

No.	1-Way	MFM-11
Each		\$39.60
Weight.....		13 pounds

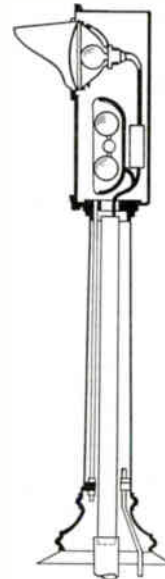
Gooseneck without Arm

No.	1-Way	GFM-11
Each		\$30.00
Weight.....		19 pounds

Pedestal without Foundation Underground Feed

No.	1-Way	BFM-11
Each		\$55.00
Weight.....		58 pounds

Horni Danger Light Standards



For use at locations adjacent to vehicles subways, or underpass that is liable to flood, or other hazards that may cause a temporary detour. Also used at school and industrial crossings. The signal may be normally out or normally flashing with insignia plate normally out. A remote float switch or other control can be furnished to automatically or manually start or stop the complete signaling indication.

Designed for mounting on a concrete foundation.

The housing and door are aluminum alloy cast 19 inches wide and 24 inches high. The sheet steel shaft is 32½ inches high and 5 inches in diameter. The base is 7¼ inches high and 12 inches in diameter at the bottom. The base is provided with hand-hole.

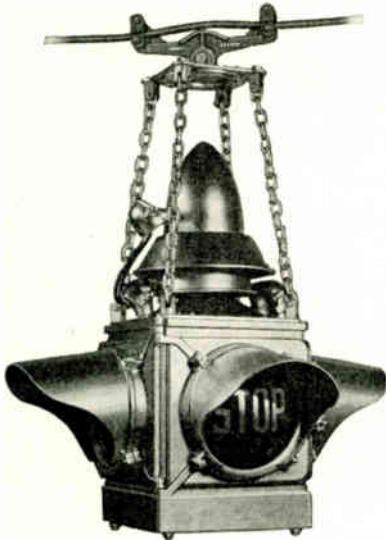
Standard finish is green.

An 8¾-inch unlettered amber lens is provided. Red or green unlettered lens can be furnished without additional charge.

Insignia plate is red glass with field opaqued. Other lettering with or without arrow can be furnished.

Flashing mechanism, control and lamp are not included.
Each..... \$200.00

Horni Siren-Lights



A combined visual and audible warning signal for use in front of fire apparatus stations. The combination may be controlled by means of a manually operated switch or may be manually or automatically started and automatically stopped by means of a Horni automatic switch.

Can be furnished with a built-in flasher control by means of which the light indication is adjustable from 24 to 72 flashes per minutes, and the siren sounding from 12 to 36 times per minute.

Standard finish is black.

Price does not include flasher, switch or lamps.

Span Wire without Base Light

	4-Way
No.	FS-41
Each	\$134.00
Weight.....	pounds 65

Span Wire with Base Light

	4-Way
No.	FSR-41
Each	\$146.00
Weight.....	pounds 70

Mast Arm without Base Light

	4-Way
No.	FM-41
Each	\$138.60
Weight.....	pounds 62

Mast Arm with Base Light

	4-Way
No.	FMR-41
Each	\$150.60
Weight.....	pounds 67

Post Mounting 4 1/2-Inch Slip Fitter Underground Feed

	4-Way
No.	FPF-41-UG
Each	\$125.40
Weight.....	pounds 70

Post Mounting 4 1/2-Inch Slip Fitter Overhead Feed

	4-Way
No.	FPF-41-OH
Each	\$126.00
Weight.....	pounds 72

Code numbers refer to 4-way indications only. For 1-way, 2-way or 3-way indication, change the numeral "4" accordingly. Deduct \$7.00 from the list price for each direction of indication not required.

Lettered lenses can be furnished at an advance of \$1.00 per lens. Amber or green lenses can be furnished without additional cost.

Horni standard insignia plates can be furnished at \$5.00 per face extra.

Horni Lenses

Horni traffic signals, warning and directional lights using similar housings, include 3 3/8-inch unlettered prismatic diffusing lenses as standard equipment.

Cross hatch diffusing lenses are provided when lettering is required unless otherwise specified. Clear lenses are provided for appended sign illumination and floodlight purposes.

The 5 3/8-inch lenses are of the optical type.

If lettering is required, specify whether lettering or field shall be opaqued.

Black enamel used for opaquing is baked, thus assuring permanency.

No.	Each	Color	Diameter Inches	Inscription	Field
TC-1R	\$2.00	Red	3 3/8	.....	.....
TC-2G	2.00	Green	3 3/8	.....	.....
TC-3A	2.00	Amber	3 3/8	.....	.....
TC-4B	2.00	Blue	3 3/8	.....	.....
TC-5P	2.00	Purple	3 3/8	.....	.....
TC-6C	2.00	Clear	3 3/8	.....	.....
TC-7CTL	3.00	Clear	3 3/8	Turn Left	Black
TC-8CWK	3.00	Clear	3 3/8	Walk	Black
TC-9CWT	3.00	Clear	3 3/8	Wait	Black
TC-10AP	3.00	Amber	3 3/8	Ped'n	Black
TC-11AC	3.00	Amber	3 3/8	Caution	Black
TC-12GRA	3.00	Green	3 3/8	Right Arrow	Black
TC-13GLA	3.00	Green	3 3/8	Left Arrow	Black
TC-14GTA	3.00	Green	3 3/8	Through Arrow	Black
TC-15GG	3.00	Green	3 3/8	Go	Black
TC-16RS	3.00	Red	3 3/8	Stop	Black

5 3/8-Inch Optical Lens Standard Colors Unletteredeach \$2.00

Horni Police Call Stations



Horni police signal boxes can be furnished with a variety of code wheel arrangements and telephone facilities for emergency signaling and routine reports to meet the requirements of any system.

Police recall lights arranged for post or suspension mounting, with Fresnel or prismatic lenses, can be furnished to order.

Equipment for police headquarters and stations can be furnished in accordance with requirements.

Prices furnished upon application.

Horni Rigid Traffic Signal Brackets



Type No. 2125



Type No. 2123-S



Type No. 2123



Type No. 2122



Type No. 2121



Type No. 2125-A

Hollow aluminum alloy cast of exceptional strength and light weight specially designed for rigid grouping of traffic signals for span wire, mast arm, post and bracket mounting.

End outlets threaded for 1½-inch fittings and equipped with nipples for securing signal section to bracket. Top center threaded and equipped with 1½-inch coupling and set screw.

No. 2125 bracket designed for three-in-row signal arrangement or where a wider spread is desired between two signal groups.

No. 2125-A bracket is designed to include provision for additional signal sections where pedestrian lights or special designations are required.

No. 2123-S and 2125-S have 4½-inch slip fitter.

Standard finish, aluminum or green.

No.	2125	2123-S	2125-S	2123	2122	2121	2125-A
Each.....	\$10.50	12.00	15.50	7.00	10.50	14.00	17.50
*Dimen... in	10	5	10	5	6	6	10

*All dimensions from center of bracket to center of outlet at end of arm.

Horni Type O Ornamental Pole Clamps



Round two-piece malleable iron for mast arm or signal bracket mounting.

Complete with two ½-inch bolts and nuts.

Standard finish is green. Black or aluminum finish can be furnished without extra charge.

I.D. Pole Inches	O.D. Pole Inches	1½-Inch Bracket Each	2-Inch Mast Arm Each
3	3½	\$3.20	\$3.60
4	4½	3.60	4.00
5	5½	4.00	5.00
6	6½	4.40	5.80
7	7½	5.00	7.00
8	8½	5.80	7.80
9	9½	6.80	8.20
10	10¾	9.00	9.00

Horni Type U Pole Clamps



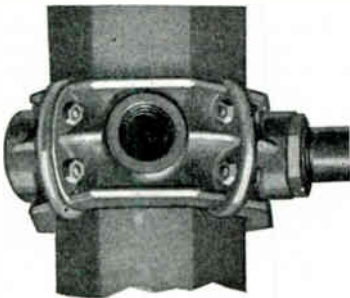
Designed to provide outlet space for wire and cable. Bolt holes permit limited spread of U-bolts.

Malleable iron threaded for 1½-inch pipe complete with ½-inch U-bolt and two nuts.

Standard finish is green. Aluminum or black finish without extra charge.

O. D. Pole.....inches	3½ to 4½	5½ to 6½	7½ to 8½
Each.....	\$3.20	4.40	5.80

Horni Type B Ornamental Pole Clamps



For 4, 5, 6, 7 and 8-inch poles. When ordering, specify whether for round or hexagonal poles.

Cast bronze 4-section designed for one, two, three or four-way signal bracket mounting. Individual sections drilled and threaded for 1½-inch bracket arm.

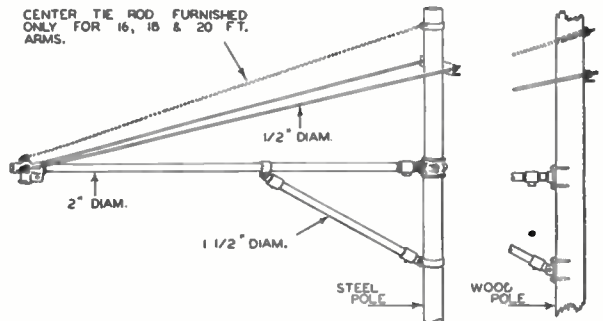
Complete with eight bolts.

Cast bronze threaded plugs can be furnished.

Standard finish is green. Can be furnished with aluminum or black finish.

Prices furnished upon application.

Horni Mast Arms



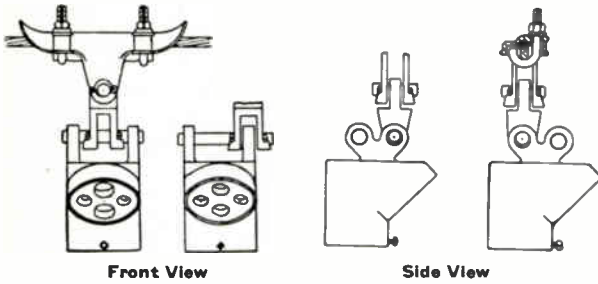
For 3 to 9-inch tubular steel poles and all wood poles.

Mast arms are made from 8 to 20 feet in length. With mast arms up to 15 feet in length, two top guy-rod are furnished. With mast arms from 16 feet in length and up, three guy-rod are furnished.

Length.....feet	8	13	18
Each.....	\$28.00	40.00	52.00
Brace Complete.....each		\$7.50	

For intermediate lengths, add to the list price \$1.00 per foot up to 12 feet and \$2.00 per foot for lengths greater than 13 feet.

Horni Hanger-Entrance Fittings



Cast metal specially designed for span wire and mast arm suspension. Equipped with two-hole, two-knockout, bakelite insulator at entrance. Lower end threaded for 1½-inch coupling and equipped with lock screw. Drilled for ½-inch coupling pin. One pair of pin holes centered and one pair off-center to assure perpendicular suspension.

Standard finish is black. Aluminum or green finish can be furnished without additional charge.

Without hanger, coupling and pin.

Each \$4.60

No. TA-2213 Horni Suspension Couplings



Cast metal specially designed for coupling between hanger-entrance fitting and mast arm or suspension hanger. Provides flexibility and prevents undue strain.

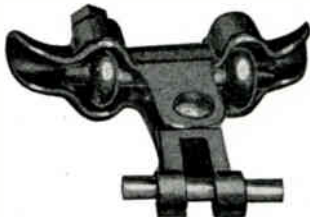
Pin holes, ¾ and ⅝ inch.

Standard finish is black. Aluminum or green finish can be furnished without additional charge.

Without coupling pins.

No. TA-2213.....each \$3.30

No. 2209 Horni Span Wire Hangers



Approximately 6⅞ inches long. Pin hole, ⅝ inch.

Complete with 5⅜-inch clamp bar, two ⅜-inch J-bolts, two lock washers and hexagon nuts.

Standard finish is black. Aluminum or green finish can be furnished without additional charge.

Without coupling and pin.

No. 2209.....each \$4.00

No. FB-2213-4 Horni Entrance Fittings



Unusual design permits removal of entire top for wiring convenience. May be used for wiring entrance on traffic signals and pedestals.

Aluminum alloy cast, threaded at bottom and equipped with 2-inch coupling. Equipped with two-hole, two-knockout, bakelite insulator at entrance.

Standard finish is black.

No. FB-2213-4.....each \$5.40

No. 10667 Horni Junction Boxes



A rugged cast brass junction box specially designed for housing the junction of the magnetic detector leads and the cabling to the traffic signal controller. Recommended for use wherever readily accessible junctions or outlets are required throughout industrial plants and yards.

The junction box is dust and moistureproof. It may be installed in any exposed location for housing plugs from which power may be obtained for portable motor-driven tools or extension lights. For flush mounting in roads or sidewalks.

Can be furnished tapped and threaded for one or two 1-inch entrances. Cover held in position by means of four brass screws. Provided with 1¼-inch opening in bottom.

Weight, 12 pounds.

Prices furnished upon application.

Horni Metal Road Markers

Used as center line markers dividing directions or lanes of traffic, stop street lines and pedestrian lanes. Made in two types.

Nickel alloy cast, designed with center or dome of marker tapering slightly upward from the edges. Vacuum grip prevents creepage, assuring permanent alignment and visibility. Waved bolt welded to inside of dome provides for secure anchorage.

Malleable iron and fitted with six clear crystal reflectors so arranged that three are visible from either direction of travel. Can be furnished with green or red crystals, or in any combination.

Prices furnished upon application.



Dome Marker



Crystal Reflector Marker

Horni Traffic Signs



Single Face
14 Inches



Single Face
24 Inches



Double Face
12x18 Inches



Single Face
24x24 Inches



Single Face
18x18 Inches



Double Face
With Rope Hole
14 Inches



Double Face
Without Rope Hole
14 Inches



Single Face
24 Inches



Single Face
11 Inches

A wide range of standard lettered traffic signs can be furnished in aluminum alloy cast, steel embossed and vitreous enamel.

Special design and lettering can be furnished as required. Standard finish is yellow with black lettering. Can be furnished in any two-color combination.

Prices and bulletin furnished upon application.

Horni Everlasting Street and Direction Signs



Aluminum alloy cast with embossed edge and lettering or designation as required. Lettering or other designation on one side. Post mounted in pairs for two-way observation. Lettering or other indication can be furnished cast on both sides of sign.

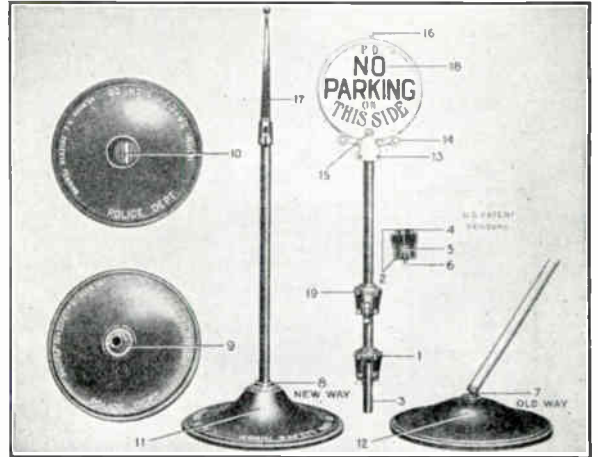
Street sign, 4 3/8 inches wide with 2 3/4-inch letters.

Arrow sign, 30 inches long, 7 1/4 inches wide.

Finished in any two-color combination as ordered.

Prices and bulletin furnished upon application.

Horni Threadless Pedestals



Cast iron in two sizes and three weights complete with wrought iron pipe and wedges. For mounting traffic signs or other use where a sturdy portable support is required.

1. Split, positive grip. No thread. Lock wedge.
2. Wedge grip at four points.
3. Plain end pipe insuring maximum strength.
4. Upper end of wedge raised to increase gripping strength.
5. Head of galvanized bolt, firmly set in wedge.
6. Nut of bolt for drawing.
7. Old way, broken at threads.
8. New way, giving full strength to pipe.
9. Wedges in place, with pipe inserted. Wedges malleable iron.
10. Wedges removed showing tapered wall where wedges are drawn down.
11. Raised part of base so that further protection is provided for pipe stand.
12. Old style flat top base.
13. Positive grip. Sign made of aluminum.
14. Lantern extension supports.
15. Guide hole for fire rope.
16. Ball for easy means for rolling sign.
17. Tapering bead insures greater strength.
18. The uniform raised cast letters make positive readable signs.
19. Raised buttons to give point suspension.

Standard finish is black. Can be furnished with aluminum or green finish without additional cost.

When ordering, specify dimension of sign.

Sign is not included in list price.

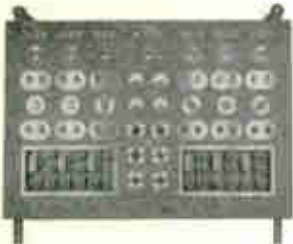
For Sign Dimensions Inches	Each	I.D. Pipe Inches	BASE	
			Diameter Inches	Weight Pounds
*11	\$5.85	3/4	15	24
*14	8.00	1	20	39
12x18	8.00	1	20	39
18x18	8.00	1	20	39
24x24	9.25	1 1/2	20	55

*Round.

Horni Central Station Fire Alarm Equipment



Installation at Cincinnati, Ohio

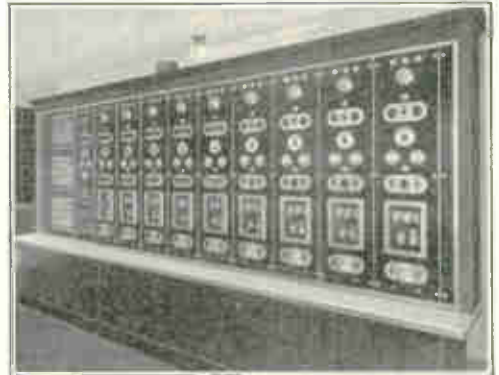


Installation at Greenville, North Carolina

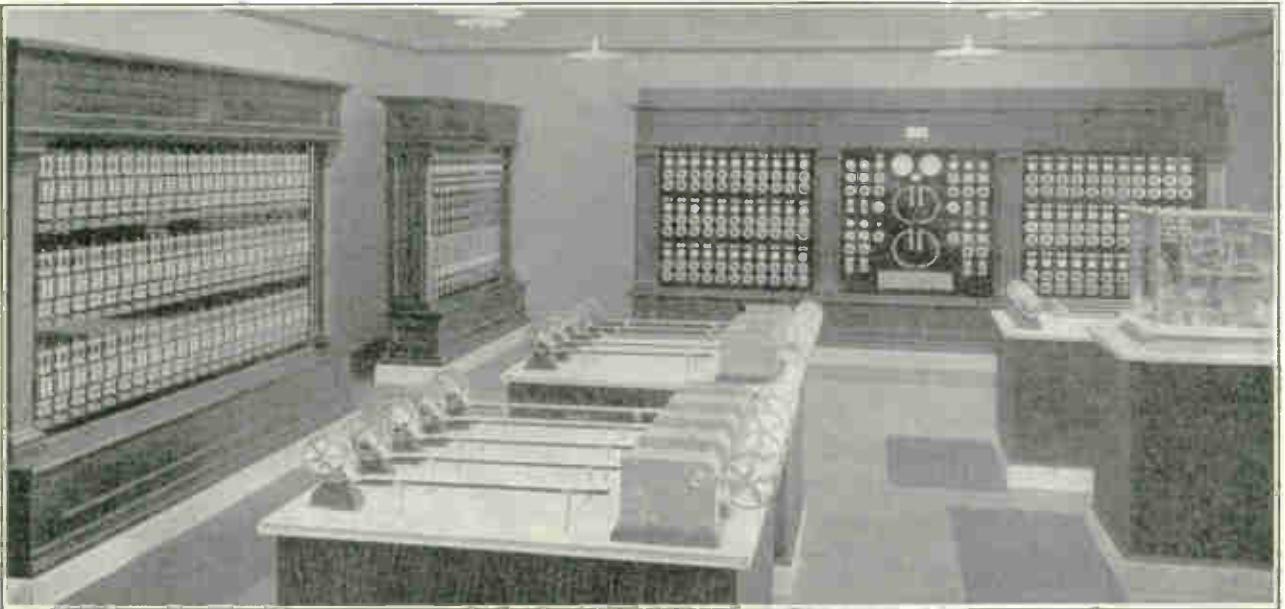
Horni central station fire alarm signaling systems set a high standard in engineering and design which is progressively maintained in all their products. Extreme simplicity, ruggedness and precision instrument manufacture are characteristic and obviate needless testing and maintenance. Flexibility is provided in the design of all instruments and in their incorporation in the system.

Horni systems fully meet the latest requirements economically and provide the highest standard of dependability in signal transmission.

Graybar engineers, specialists in the particular field of signaling, will gladly cooperate with architects, engineers, superintendents, etc., in charge of operation, to lay out systems or make recommendations, whether new installations or extensions to or modification of existing systems.



Installation at Millburn, New Jersey



Installation at Albany, New York

Horni Type C Compositrol Central Station Fire Alarm Units



The transmitter compartment is recessed above shelf and accessible from front through double sliding plate glass doors. This compartment also provides space for forty code wheels. The glass doors may be replaced with a panel for mounting other types of transmitters.

Ample space is provided for the No. BT-3-A Horni fire alarm storage battery cells and special telephone batteries.

The lower section of the rear compartment contains the Horni dry disc battery charger, trouble bell panel, terminal board, protective equipment, and space is provided for the telephone central station anti-sidetone equipment, all of which is readily accessible.

Smaller communities having an organized fire department which do not require Class A systems may use an unattended central station in conjunction with an outside audible alarm.

The Horni Compositrol is a self-contained factory-wired unit and, with the exception of the fire alarm boxes and outside alarms, contains the power supply, control, supervision and recording equipment for the dependable operation of a complete fire alarm system.

The arrangement and assembly of the Compositrol permits the extension of similar units containing facilities for additional circuits to extend the fire alarm box capacity. The extension will include repeating facilities.

The Compositrol unit contains equipment for a single box circuit and is made in two basic types: straight metallic and ground systems.

The straight metallic system has facilities for dividing the circuit in two loops so that the disablement of any loop will not involve the entire system.

The ground system is designed to receive signals under such adverse conditions as an open or grounded circuit.

The equipment is contained in a welded steel cabinet 64 inches high, 44 inches wide and 18 inches deep. A shelf 10 inches wide is located across the front, 30 inches above the floor.

The cabinet consists of three main compartments with full height lift-out rear doors and louvred hinged doors in front. Interior surfaces have two coats of solid color enamel paint over a rustproof primer. Exterior surfaces have a prime coat and a final baked coat of black crystal paint.

Telephone facilities can be provided for communication over the box circuits, and with separate telephone wires connecting alarm boxes or other call boxes those facilities may be extended for police reporting.

The upper section of the rear compartment houses the rear of panel mounted equipment.

The exposed surfaces of apparatus on front of panel, with the exception of the Weston meters, are grained finish satin chromium.

The Compositrol may be used in systems employing any standard fire alarm boxes and with horns operated by electricity, steam or air.

Prices and bulletin furnished upon application.

Horni Local Fire Alarm Systems

Horni local and municipal connected fire alarm systems are designed and built to meet the individual requirements of industrial plants, institutions, hospitals, schools, public buildings, etc.

The systems may be arranged for coded or continuous audible or visual alarms throughout the premises. The power supply may be A.C. or D.C. with or without storage batteries.

These systems are also made for direct connection to the municipal fire alarm system by means of a master fire alarm box connected with the street box circuit. This arrangement permits the single operation of a local system box to instantaneously sound the local warnings and operate a trip in the master box starting the mechanism and notification to the municipal system.

Provision is made for tests and local fire drills. In the municipal connected system, the tests and drills are made without disturbing the master box or municipal department.

Equipment is provided to maintain systems under constant electrical test. Circuit trouble or power failure will be indicated by audible signal.

Control panels are mounted in cabinets for flush or surface wall mounting and may be floor mounted for larger systems.

Our engineering department will promptly advise and cooperate with architects, engineers, superintendents in charge of operation, or anyone contemplating the installation or use of fire alarm apparatus.

Prices and bulletin furnished upon application.

Horni Pena-Tone Air Horns



Designed particularly for use as an outside audible alarm in coded or non-coded fire alarm systems or industrial installations. Clear and distinct blasts make the Pena-Tone desirable for coded alarm and Morse signaling.

The horn is of cast bronze with non-corrosive alloy

diaphragm. Without moving parts; not affected by climatic conditions.

Beginning and end of each blast is sharply defined. Made in four sizes, providing a wide range of audibility. Will operate with full efficiency with a pressure reduction of 30 per cent.

Horns may be mounted singly or in groups set in various directions, for which purpose a special bronze manifold can be furnished.

Compressed air signals require an air compressor with an electric motor controlled by a pressure regulating device. Minimum requirements and conditions to be met in the installation and use of air operated alarms are defined in the National Board of Underwriters' Pamphlet No. 73.

No.	P-5	P-8	P-12	P-17
Diaphragm.....	inches 5	8	12	17
Length.....	inches 19½	25	38	46

Prices furnished upon application.

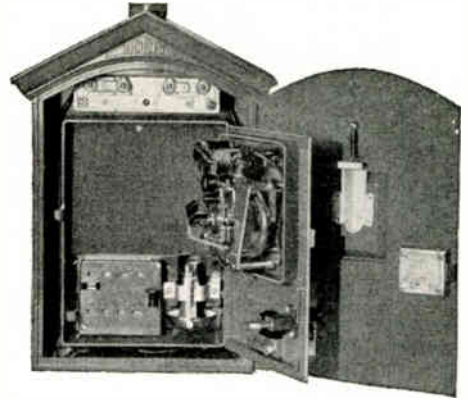
Horni Fire Alarm Boxes Positive Non-Interfering Succession



The box will fit standard mountings and will function in standard fire alarm systems with other fire alarm boxes.

The housing and door are die-cast aluminum alloy. The Raise Cover—Pull Lever type of door is accessible, simple to operate, and easily opened under severe climatic conditions. The cover is fitted with a glass easily broken by persons accustomed to "Break Glass" types of doors. The box may be fitted with the Break Glass—Pull Handle, Open Door—Pull Handle, or Spade Handle—Pull types of doors. This last type includes a local mechanical alarm.

The location of the porcelain terminal block above the inner shell protects the operator of the telegraph key. Provision is made for attaching Neon tube lightning arrester clips.



The inner shell is of aluminum alloy. A two-section door makes it unnecessary to expose the entire interior when using telegraph key or making tests. Interior of the inner shell is exposed by opening both sections of the door. Inner shells are interchangeable.

The movement is mounted on the back of the inner door and is permanently grounded. A molded glass cover is furnished. Adjustable weight is provided for the regulation of the armature. Non-interference coils are designed so that, should either coil open, the signal will still be coded, and without impairing the effectiveness of non-interference. Reset lever is provided for the purpose of facilitating a mechanical test of the movement.

The steel main spring is of sufficient length to provide 10 full alarms of four rounds each, with one winding. The spring may be wound at any time without distorting a signal that may be in process of transmission.

The code wheel can have as many digits as five nines—99999. It is impossible to put the code wheel on the movement in other than the proper position. A thumb nut securely locks the code wheel in place.

The balance weights are situated so that the movement may be timed without taking the movement from the box. The speed of the movement is adjustable from one code

wheel revolution in 3 seconds to one revolution in 60 seconds.

The contacts are of coin silver of one ampere capacity. The signaling contacts are readily adjustable by means of an eccentric screw.

A molded bakelite test panel and test plug are provided. A silent test resistor is incorporated. A telephone jack is provided. Communication may be established without interfering with the transmission of an alarm. A telegraph key and tap bell are provided. The box will transmit telegraph signals and second alarms although the tap bell coil may be open.

The movement is of the standard succession type, which makes an effort to take control of the line every four rounds. If unable to gain control because of a disabled or busy line, the movement will mechanically lock itself out of operation at the end of the 24th round. This leaves, in a fully wound box, at least 16 rounds available for further services.

Special primer and finishing coats of fire alarm red are baked on. Raised instruction lettering is finished in white enamel.

Standard spring bolt locks and two keys are provided. When ordering, specify box number, timing and whether other than "Raise Cover" type of door is required.

Prices and bulletin furnished upon application.

Horni Compositrol Fire Alarm Boxes

Compositrol fire alarm boxes are intended for protection against loss of alarms due to abnormal line conditions.

The mechanism is specially designed to include the Compositrol feature as an integral part. Otherwise the general description, dimensions, door types and timing are similar to the Horni positive non-interfering succession fire alarm box.

The box may be installed in any standard fire alarm circuit with other standard fire alarm boxes, and under normal circuit conditions, it will function as a standard positive non-interfering succession fire alarm box.

Under abnormal circuit conditions, the Compositrol movement automatically sets up a ground connection and will transmit the signals to the central station over either side of a broken circuit or through ground, provided the central station is equipped to receive ground return signals. After transmission of signals under abnormal conditions, the Compositrol movement automatically removes the ground

connection which it has established.

The Compositrol will code under any of the following conditions:

1. Over normal metallic circuit with one non-interference coil open.
2. Over normal metallic circuit and over ground circuit with both non-interference coils open.
3. Circuit open or grounded.
4. Box short circuited.
5. Circuit shorted out.
6. Circuit open and short circuited box.
7. Circuit open and entire circuit shorted out.
8. Circuit open and grounded.
9. Defective non-interference magnets.
10. Low line circuits.

When ordering, specify box number, timing and whether other than "Raise Cover" type of door is required.

Prices and bulletin furnished upon application.

Horni Master Fire Alarm Boxes

Positive Non-Interfering Succession

For use in protecting, by cooperation through municipal fire alarm systems, industrial plants or institutions which have their own fire alarm or other fire protection system. This box may be installed in any standard fire alarm system with any other standard fire alarm boxes.

Signals may originate normally through auxiliary boxes or other signal stations, various thermostatic devices, including sprinkler or heat expansion systems, and other methods of fire detection and signaling.

The mechanism is specially designed to include a trip latch, necessitating a slightly larger inner shell and molded glass cover. Otherwise, the general description, code wheel

and timing arrangements are the same as the Horni positive non-interfering succession fire alarm box. The trip latch cannot be released except by actual electrical impulse.

The master box can be furnished with a plain door or with any one of the manual operating types of doors.

Standard finish is fire alarm red with raised instruction lettering finished in white enamel.

A standard spring bolt lock and two keys are provided.

When ordering, specify whether D. C. or A. C. operated auxiliary system or shunt loop. Also specify box number, timing and whether other than "Raise Cover" type of door is required.

Prices and bulletin furnished upon application.

Horni Oval Fire Alarm Boxes



The oval fire alarm housing is an aluminum alloy casting designed for interior use. It may be arranged for surface or flush mounting.

The Horni Positive Non-Interfering Succession, Compositrol or Master mechanism is mounted on a hinged inner door and is protected by a dust and moistureproof molded glass cover. The Sector movement is mounted on the back of the outer door, and is protected by a similar glass cover.

A standard spring bolt lock and two keys are provided.

The tap bell, telegraph key and test panel are not provided as part of the standard equipment but can be furnished on special order.

A flange can be furnished if required for flush mounting.

Standard finish is fire alarm red with instruction lettering finished in white enamel. Special finish to order.

Prices and bulletin furnished upon application.

Horni Sector Fire Alarm Boxes

Non-Interfering



The Sector fire alarm box is of the normally unwound type in which the operation of the starting lever winds the driving spring to provide four complete rounds of the code wheel. The movement is of the succession type within the limits of the movement winding. The movement cannot be interfered with after the operation of the lever and during the four rounds of the code wheel.

The mechanism is protected with a molded glass dust and moistureproof cover. The code wheel and timing arrangement is the same as in the Horni positive non-interfering succession fire alarm box.

The Lift Cover—Pull Lever type has the movement mounted on the back of the door. The Open Door—Pull Handle type has the movement mounted in a cast inner shell.

A bakelite terminal panel is provided equipped with wire terminals, testing and grounding facilities, telegraph key and telephone jacks.

Standard finish is fire alarm red with raised instruction lettering finished in white enamel.

When ordering, specify type of operating door, box number and timing.

Prices and bulletin furnished upon application.

Horni Local Coded Fire Alarm Boxes

Non-Interfering



Intended for use throughout industrial plants, institutions, hospitals, public buildings and other properties having their own fire alarm systems.

The movement is of the normally unwound type in which the operation of the starting lever winds the driving spring to provide four complete rounds of the code wheel. The movement cannot be interfered with after operation of the lever and during the four rounds of the code wheel. If two or more boxes in a circuit are pulled at approximately the same time, one will take control of the circuit. The other boxes cannot interfere and will not code during those four rounds.

The entire mechanism is assembled on a metal plate mounted on the back of the door. A gasketed glass cover is provided.

The operating lever is protected by a metal cover and glass. A hammer is provided for breaking the glass. Breaking glass will release the cover, properly exposing the operating lever. The cover and door may be opened for inspection by means of a key provided with each box.

The housing is of cast metal and can be furnished for surface or flush mounting. The top and bottom of housing are tapped and threaded for 3/4-inch conduit. One threaded plug is provided. The housing may be installed during alteration or construction of building and the door with mechanism attached later.

Standard finish is fire alarm red with raised instruction lettering in white enamel. Special finish to order.

Prices and bulletin furnished upon application.

Horni Auxiliary Fire Alarm Boxes



Lift Cover Pull Lever

Break Glass Pull Lever

Lift Cover Pull Lever Small Glass

Non-coded manually operated auxiliary fire alarm boxes are generally used to extend municipal fire alarm protection into and throughout industrial plants, institutions, hospitals, schools, public buildings and other properties under the constant supervision of employees and watchmen.

The single operation of the pull-down lever opens or closes a circuit operating a trip in a municipal system connected master fire alarm box. After operation, the lever in the auxiliary box is locked in the down position until released by a separate key.

Spring assembly, terminals and lever are mounted on the back of the gasketed front plate. This permits installation of the conduit and housing during the alteration or construction of the building. Spring contacts can be furnished for circuits controlling local alarms.

The housing is aluminum alloy cast with threaded top and bottom outlets for 1/2-inch conduit. One threaded plug provided.

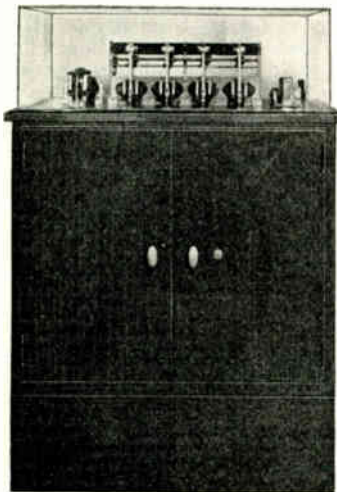
Housing given a baked primer and a baked standard red finish with white lettering.

When ordering, specify type of operating cover and contact spring arrangement. Mercury contacts can be furnished.

Flange can be furnished for flush mounting. Prices and bulletin furnished upon application.

Horni Fire Alarm Repeaters

Non-Interfering



Automatic and semi-automatic repeaters are used in fire alarm systems where there are two or more box circuits.

Automatic repeaters are used in systems where the normal straight metallic box circuits also control the alarm apparatus. When a box is operated, its number is repeated over all box and alarm circuits. Should a second box be operated on another circuit at the same time, the repeater prevents interference to the extent of the non-interference of the boxes. If the boxes are of the non-interfering succession type, the repeater will receive and transmit the

signal from the second box after the first box has completed its signal.

Semi-automatic repeaters are used in systems where all alarm apparatus is independent of the box circuits. In this system, the first signal transmitted from any circuit will take the repeater and transmit the alarm over the alarm circuits, not interfering in any way with receiving alarms from any or all other box circuits. These other signals are recorded on registers and retransmitted manually after the first box has completed its signal.

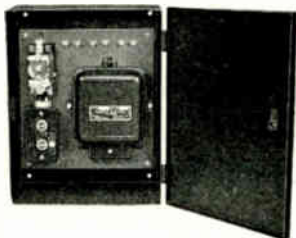
All types of repeaters will give one blow on the alarm apparatus when any circuit opens. If the circuit remains open longer than for a predetermined time, the repeater is automatically reset and again is ready for operation. After the disabled circuit has been repaired, even if a signal has control of the repeater, the circuit automatically will be restored to service without interfering with the signal.

Repeaters can be furnished to operate under certain abnormal line conditions.

Can be arranged for pedestal or panel mounting with plate glass covers.

Prices and bulletin furnished upon application.

Horni Automatic Light Switches



Used in fire apparatus stations for automatically switching the house lights on and, after a predetermined interval, shutting the lights off. The switch will operate on the first impulse in the alarm circuit. The interval the lights remain on is adjustable from 3 seconds to 60 minutes.

A push button switch is provided for manually operating the control when still alarms or telephone alarms are received.

The equipment is mounted in a steel cabinet approximately 10½ inches wide, 6 inches deep, and 15 inches high.

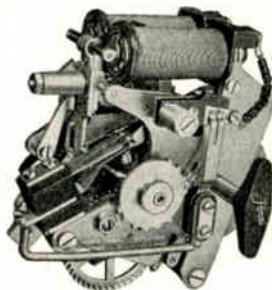
Standard finish is black.

Weight, 20 pounds.

Prices furnished upon application.

Horni Fire Alarm Transmitters

Style A



The manually wound non-interfering succession transmitter is used in the smaller fire alarm systems. It may be used in the fire alarm circuit in series with the street box circuit.

The main spring will provide forty rounds or ten full alarms of four rounds each with one winding.

Adjustable over a speed range of one round of the code wheel in 3 seconds to one code wheel revolution in 60 seconds. Code

wheel permits as many digits as five nines—99999. Transmitter may be mounted in an oak or metal cabinet with glass paneled doors.

Prices furnished upon application.

Style B



With Oak Cabinet

The positive non-interfering accelerated type transmitter is used in Type B and small fire alarm systems. It may be used in the fire alarm circuit in series with the street box circuit.

Pulling the handle down both winds the drive spring and starts the mechanism. Transmitter may be set for one, two, three or four rounds.

Adjustable over a speed range of one code wheel revolution in 3 seconds to one code wheel revolution in 60 seconds.

Code wheel permits as many digits as five nines—99999. Transmitter may be mounted in an oak or metal cabinet with glass paneled doors.

Prices furnished upon application.

Style C



The disc or dial type transmitter is used in the alarm circuit of Type B and small fire alarm systems.

The transmitter is set for the coded alarm by means of self-locking discs. Operation of the lever winds the driving spring and starts the mechanism.

The mechanism is enclosed in a cast metal dustproof cover. Discs, arms and lever are black finish. Mounting rim is grained satin chromium finish.

Capacity of transmitter, four digits. Rounds adjustable from one to four. Speed range adjustable from two blows per second to one blow every 3 seconds.

Transmitter may be mounted in an oak or metal cabinet with glass paneled doors.

Prices furnished upon application.

Style D



The key or push button transmitter is suitable for use in Class A or Class B systems.

The transmitter is set by depressing keys corresponding to the signal number. The mechanism is started by depressing a button. A small pilot light indicates when mechanism is in operation. Operating power, 24 volts D.C.

Any signal up to 10-10-10 may be transmitted. Speed is

adjustable over a range commonly used in municipal fire systems. The number of rounds is adjustable from one to four.

Case is black crystal finish.

Prices furnished upon application.

Horni Dry Disc Battery Chargers

Dry disc battery chargers are used as a source of direct current in fire alarm and police signaling systems or where it is desired to obtain direct current from an alternating current supply for charging batteries and for a secondary source of power.

Types HLM and HMB equipped with switch and milliammeter for direct reading of charging and line current. All types equipped with rheostats on the secondary side of transformer.

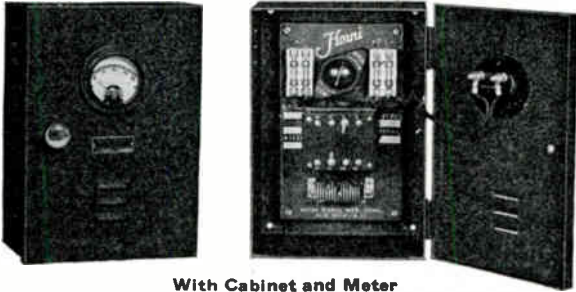
Operated from 110-volt, 60-cycle a.c.

Special rectifiers may be furnished as required.

Can be furnished for panel mounting or in metal cabinets.

Prices furnished upon application.

Type L Low Rate

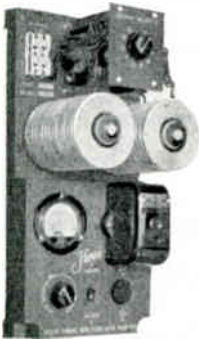


With Cabinet and Meter

Panel dimensions, $5\frac{1}{4} \times 10$ inches. Ma., 150.

Code No.....	L-1230	L-3060	L-6090	L-90120	L-120150
Voltage.....	12-30	30-60	60-90	90-120	120-150

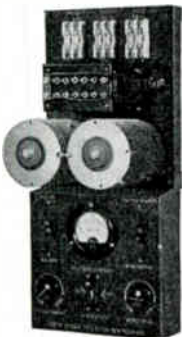
Type HMB High Rate



Panel dimensions, $9 \times 18\frac{3}{4}$ inches. Ma., 500.

Code No.....	HMB-1230	HMB-3060	HMB-6090	HMB-90120	HMB-120150
Voltage.....	12-30	30-60	60-90	90-120	120-150

Type HLM High-Low Rate



Panel dimensions, 9×20 inches. Ma., 150-150.

Code No.....	HLM-1230	HLM-3060	HLM-6090	HLM-90120	HLM-120150
Voltage.....	12-30	30-60	60-90	90-120	120-150

Horni Storage Batteries



Specially designed for use in fire alarm and police signal systems.

Grooved bottom glass jar with hard rubber cover sealed especially deep to prevent creepage of electrolyte. Non-spray vent plug permits adding water without removal.

Ample space is provided for sediment deposit during life of battery. Extra height of acid above plates requires less frequent filling.

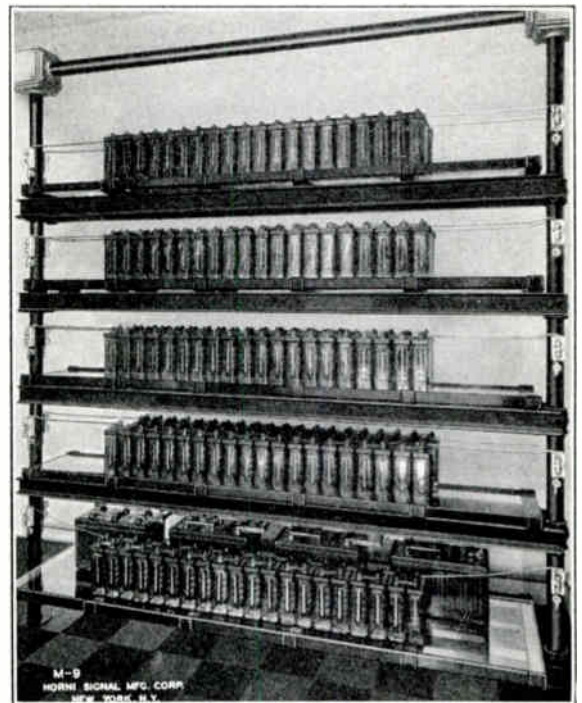
Capacity, 18 ampere-hours at 100 ma. Dimensions of cell, $8\frac{3}{16}$ inches high, $4\frac{1}{16}$ inches long and $2\frac{1}{2}$ inches wide.

Pilot cells with built-in ball indicators are recommended for end cells.

Shipped filled and charged. Weight per cell, approximately 6 pounds.

Prices furnished upon application.

Horni Battery Racks



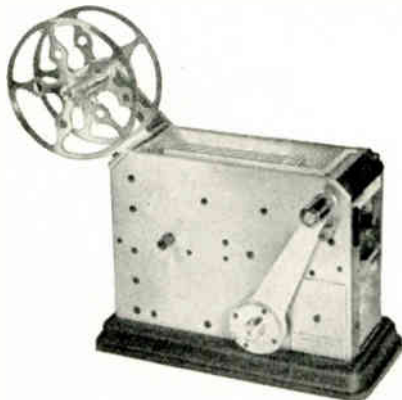
Sectional design and of rugged construction manufactured to specification as regards floor space, height of ceiling and cell capacity.

Shelf cross members are supported by clamps of special design and exceptional strength. Horizontal supports are of heavy channel iron equipped with glass shelves, soft rubber cushions and ebony asbestos strips. Specially designed outlet boxes provide convenient, easy means of wiring.

Finished with special acid-resisting paint.

Prices furnished upon application.

Horni Multiple-Circuit Registers



The puncturing register is primarily a spring-driven impulse recorder specially designed for fire alarm central station or police signal use.

Intended for service on four, five and six circuits operating at a signaling speed of 10 blows per second or slower.

The ratchet-wound drive-spring is of sufficient capacity to propel approximately 125 feet of paper tape with one complete winding.

The paper tape is automatically fed beneath the puncturing blades at a uniform rate of speed. Adjustable automatic stopping mechanism prevents unnecessary travel of tape between signals.

Mechanism is enclosed in a dustproof housing composed of heavy bronze side plates with top and ends of beveled plate glass sections. Side plates are bronze grained satin finish.

The housing is mounted on a black crystal finished hollow cast iron base arranged for standard drilled locations. Base arranged for spring contact and wiring to terminal block.

Dimensions of base, $11\frac{1}{8} \times 5\frac{29}{32}$ inches.

Arranged for $1\frac{5}{16}$ -inch paper tape.

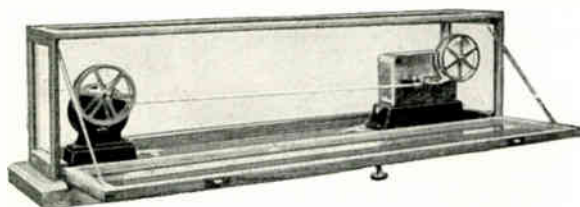
Special finish to order.

Equipped with adjustable time stamp contacts when specified.

Can be furnished to operate under special circuit conditions.

Prices furnished upon application.

Horni Recording Sets



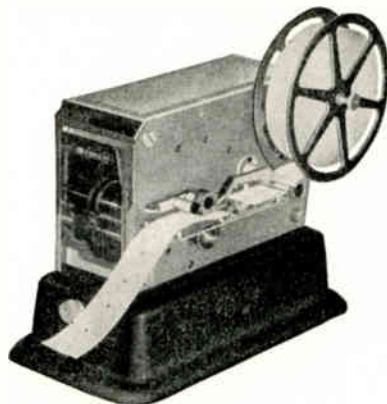
Recording set is for use in fire apparatus stations, small fire alarm central offices, police headquarters, and police stations.

Transfer equipment may be included for connecting the register to any one of several fire alarm circuits. Recording sets may be arranged to include a wide variety of auxiliary equipment such as automatic light controls, audible signals or time stamp.

Glass paneled dust cover can be furnished.

Prices and bulletin furnished upon application.

Horni Single-Circuit Registers



"Superior"

Adaptable for many purposes. Specially designed for municipal fire alarm and police signal service.

Intended for service on a circuit operating at a signaling speed of 10 blows per second or slower.

Paper tape is automatically fed beneath the adjustable puncturing blade at a uniform rate of speed. Adjustable automatic stopping mechanism prevents unnecessary

travel of tape between signals. Key-wound heavy duty drive-spring, when fully wound, has an approximate capacity of 800 blows. Winding key is provided.

Housing with mechanism is mounted on a hollow cast iron baked black crystal finish base which houses coils and terminal block arranged for wiring and spring contact connection.

"Superior" register has a bronze dustproof housing with grained finish. Ends and top of beveled plate glass.

"Marvel" register has a bronze dustproof housing with a durable matte finish.

Dimensions of base, $10\frac{1}{8} \times 5\frac{3}{8}$ inches.

Unless otherwise specified, register will be supplied arranged for $1\frac{5}{16}$ -inch paper tape.

Special finish to order.

Can be furnished with automatic time stamp contacts and also arranged to operate under special circuit conditions or for A.C. operation.

Portable register with cord and plug can be furnished.

Prices furnished upon application.

Horni Monitor Take-Up Reels



Designed to wind up used paper tape as fed from the register and to hold tape under proper tension.

Reel is driven by a machined gear train operated by a key-wound spring and is mounted on a rugged bushed bearing shaft projecting from the side of the housing. Reel and regulating arm are bronze with grain satin finish.

Mechanism entirely enclosed in a cast metal black crystal finished dustproof housing.

Regulating device assures that tape will be steadily taken from the register under uniform tension. If the tape should break, the regulating device will automatically stop the reel.

Previously wound tape may be inspected by drawing the tape backwards. Reel will again wind up tape after inspection. Reel for $1\frac{5}{16}$ -inch tape standard. Reels for other standard paper widths can be supplied.

Mounting holes will fit existing standard drilled location. Dimensions of base, $6 \times 2\frac{5}{16}$ inches.

Take-up reel can be furnished arranged to permit winding of spring without interfering with the normal operation.

Special finish to order.

Prices furnished upon application.

Horni Electro-Mechanical Gongs



The electro-mechanical gong is for use in normally closed alarm circuits serving fire alarm stations, newspaper or public utility offices and wherever audible coded signals are desired.

Designed for mounting without removing the cover. The gong is of special cast metal. A hollowed nut holds the gong in position and provides entrance for the winding key. The winding key is provided.

Built-in mechanism can be furnished to operate a remote audible or visual alarm circuit or mechanical "tell-tale" in base of gong when drive-spring reaches a predetermined unwound condition. Mechanism will restore instantly only when spring is wound to proper tension.

The 6-inch gong is similar to the 10-inch gong except that it does not include a dust cover and cannot be furnished with the "tell-tale" mechanism.

Standard finish polished gong and black crystal base. Special finish to order.

Gongs can be furnished to operate under special circuit conditions.

Prices and bulletin furnished upon application.

Horni Wall Type Tap Bells



Direct acting tap bell designed for use in normally closed circuit and intended to provide an audible alarm from the fire alarm circuit. Intended for fire stations, public utility or newspaper offices and wherever coded signals of moderate volume are required.

Adjustable armatures mounted on aluminum alloy cast frame and enclosed in a black crystal finished aluminum alloy cast dustproof housing. Gong is of pressed steel with polished brass finish.

Dimensions of base, 6½ inches wide and 5¾ inches long.

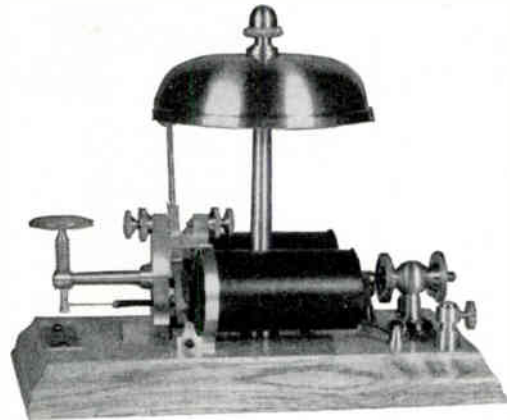
Can be furnished with 6 or 8-inch gong.

Special finish to order.

Gongs can be furnished to operate under special circuit conditions.

Prices and bulletin furnished upon application.

Horni Superior Desk Type Tap Bells



An umbrella type direct acting tap bell intended to provide an audible signal in any fire alarm circuit. Ornamental in design and finish. Suitable for mounting in office or home.

The magnets are made from high grade electrical iron, specially treated to minimize residual magnetism. Coils are protected with brass sleeving finished with black lacquer.

The 4½-inch diameter gong is of cast bell metal supported by a bronze stem. All exposed metal surfaces are grained finish.

The unit is mounted on a polished hardwood base. Slate or ebony asbestos base can be furnished.

Special finish to order.

Prices and bulletin furnished upon application.

Horni Marvel Desk Type Tap Bells



An umbrella type direct acting tap bell for use in fire alarm central stations and fire engine houses.

The coil are mounted within an aluminum alloy cast frame. The frame, finished in baked black crystal, provides anchorage and convenient armature adjustment.

The polished 4-inch cast bell metal gong is supported by a cast stud riveted to the frame.

The unit is mounted on an ebony asbestos base 5 inches wide and 7 inches long. Height overall, 6½ inches.

Hardwood or slate base can be furnished.

Special finish to order.

Prices and bulletin furnished upon application.

Horni Panel Type Telegraph Keys



A telegraph key of precision manufacture, used on fire alarm control panels for signaling over normally closed or normally open circuits.

Arranged for panel mounting with all connections in rear of panel. Equipped with indicating safety lock to prevent accidental operation.

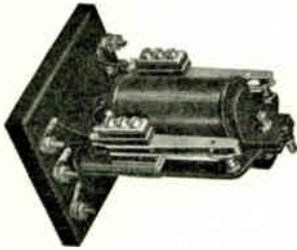
Standard finish is polished

chromium. Special finish to order.

Base can be engraved for circuit identification.

Prices furnished upon application.

Horni D.C. Fire Alarm Auxiliary Relays



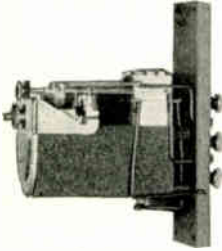
Specially designed for auxiliary circuit operation in fire alarm central station and other types of signal system switchboards.

Coil wound of enameled copper wire on a bakelite spool. Armature and frame black crystallized finish. Phosphor bronze springs with coin silver contacts.

Can be furnished with spring combinations and for operating current as required.

Prices upon application.

Horni D.C. Fire Alarm Line Relays



Designed for central station service in box and alarm circuits or other circuits requiring precision instrument efficiency.

The coil is wound on special soft iron core with cellulose acetate insulation and is mounted in a special soft iron cover. Armature mounted on a movable carrier which permits precision adjustment.

Can be furnished with spring combinations and for operating currents or voltages as required.

Prices furnished upon application.

Horni D.C. Time Delay Relays



Primarily designed for fire alarm central office use to delay operation of a secondary circuit for a predetermined time interval.

The time interval delaying operation of the secondary contacts is adjustable from 1/2 second to 15 seconds.

The timing mechanism is spring-driven, and is automatically wound each time the armature restores to normal.

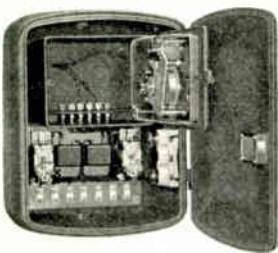
Coil consists of enameled copper wire on a special iron core with cellulose insulation and covered with fabric. The coil is mounted within a special iron black crystallized finish cover.

Dimensions, 4 3/4 inches long, 2 inches wide and 3 1/2 inches high.

Arranged for panel mounting.

Prices furnished upon application.

Horni D.C. Uniform Time Relays



Primarily designed for use in fire alarm systems to open or close a secondary circuit for a predetermined time interval. Time limit adjustable from 1/4 second to 7 seconds.

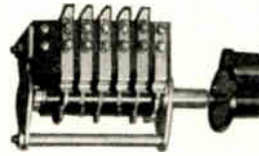
The secondary circuit may be used to operate air horns, bells or visual signals for time intervals between impulses as received from a coded fire alarm box or transmitter.

The spring-driven mechanism will give 320 blows when fully wound. Entire mechanism mounted on a cast metal base and provided with a glass dustproof cover.

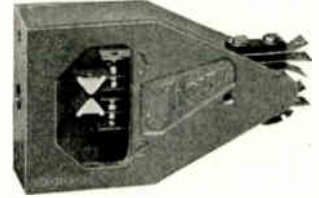
Can be furnished for panel mounting or factory mounted in a cast metal housing, as illustrated.

Prices furnished upon application.

Horni Shur-Control Switches



Rotary Type



Plug Type

For heavy duty use in fire alarm systems or wherever a switch is required to make or break a multiplicity of circuit combinations by a single operation. Designed for continuous operation up to 2000 volts. Will safely carry and break 5 amperes at 110 volts A.C.

The rotary switch is arranged for rear of panel mounting with index plate and insulated pointer knob provided for front of panel. It can be furnished with from 2 to 14 contacts in various sequence combinations as required.

The plug operated switch can be furnished for rear or side panel mounting with push-pull, plunger, restoring or rotary plug. The single operation of a number of individual switches is obtainable either in gang or group mounting. Springs can be arranged for various circuit combinations as required.

Prices and bulletin furnished upon application.

Horni Code Wheels

Horni code or character wheels can be furnished for all standard fire alarm boxes and transmitters. Specially designed for ease and accuracy of placement.

Made of bronze.

In a signaling system employing variable timed movements, the intervals between blows, between digits and between rounds are the same for all boxes.

In a signaling system employing uniform timed movements, the time required for a single round of the code wheel is the same for all boxes in the system.

When ordering, specify the box number and whether variable or uniform movement timing.

Box number plates can be furnished.

Prices furnished upon application.

Horni Shur-Support Brackets



Aluminum alloy casting of great tensile strength and ductility designed for permanent attachment to either wood or metal poles or walls for mounting metal boxes.

The upper and lower bearing surfaces may be adjusted to fit the contour of any pole 5 inches or greater in diameter.

Drilled to mount any standard fire alarm or police signal box. Can be furnished with other drillings as required.

Standard finish, is aluminum. Special finish to order.

Code No.....	223	223-P
Length.....inches	14 5/16	19 7/8
Width.....inches	8	10 1/4

Other sizes can be furnished.

Prices furnished upon application.

Horni Cast Metal Weatherproof Housings



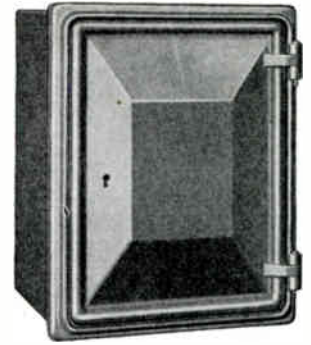
No. HS-4448



No. HS-2937



No. PD-1115-HS



No. HSNYC

Equipped with standard spring lock and key. Special locks can be furnished to order.
Housings are given a baked primer and two baked finishing coats. Standard finish special aluminum, green or black as ordered. Special finish to order.

No.	Material	INTERIOR, INCHES			Door, INCHES		Entrance	Weight Pounds
		Height	Width	Depth	Height	Width		
*†HS-4448	Aluminum Alloy	8 ³ / ₄	5 ³ / ₄	3	8	5 ⁵ / ₈	Not Drilled	5
TC-2012-HS	Aluminum Alloy	11	8	7	11	8	Not Drilled	12
HS-2937	Aluminum Alloy	15	11 ¹ / ₂	9 ¹ / ₂	15 ¹ / ₄	11 ¹ / ₄	2-Inch Bottom	25
†PD-1115-HS	Aluminum Alloy	15 ¹ / ₂	10 ¹ / ₂	4 ⁵ / ₈	14	9	Not Drilled	16
HSNYC	Aluminum Alloy	16	14 ³ / ₄	11 ¹ / ₂	14 ¹ / ₂	11	2 ¹ / ₂ -Inch Bottom	35
†HS-4405	Aluminum Alloy	16 ¹ / ₂	12	6	10 ¹ / ₄	16	Not Drilled	27
HS-761	Aluminum Alloy	19	9	6 ¹ / ₂	17	7	Not Drilled	27
HS-3877	Aluminum Alloy	23	12	9	23	11 ¹ / ₄	2-Inch Bottom	31
TC-1134-HS	Aluminum Alloy	25	15	9	25	15	2 ¹ / ₂ -Inch Bottom	40
HS-3987	Aluminum Alloy	29	12 ¹ / ₂	9 ¹ / ₂	28 ¹ / ₂	11 ¹ / ₂	2-Inch Bottom	36
TD-10255-HS	Upper Section Aluminum Alloy	28	21	9	23	18 ³ / ₄	Open Bottom	136
	Lower Section Aluminum Alloy						Top and Bottom Open	
TD-10212-HS	Upper Section Aluminum Alloy	40	24	11 ¹ / ₄	36	21	Open Bottom	322
	Lower Section Cast Iron						Top and Bottom Open	
FB-2213-A	Cast Iron	25	25 ¹ / ₂	12 ³ / ₄	19 ¹ / ₂	22 ¹ / ₂	Top and Bottom Open (2 ¹ / ₂ -Inch Top)	185
		34 ³ / ₄	12 ¹ / ₂	7	31 ¹ / ₄	10 ⁷ / ₈		

*Equipped with non-removable screw bolt and wing nut.
†Not equipped with gasketed doors.



No. TC-1134-HS



No. HS-3987

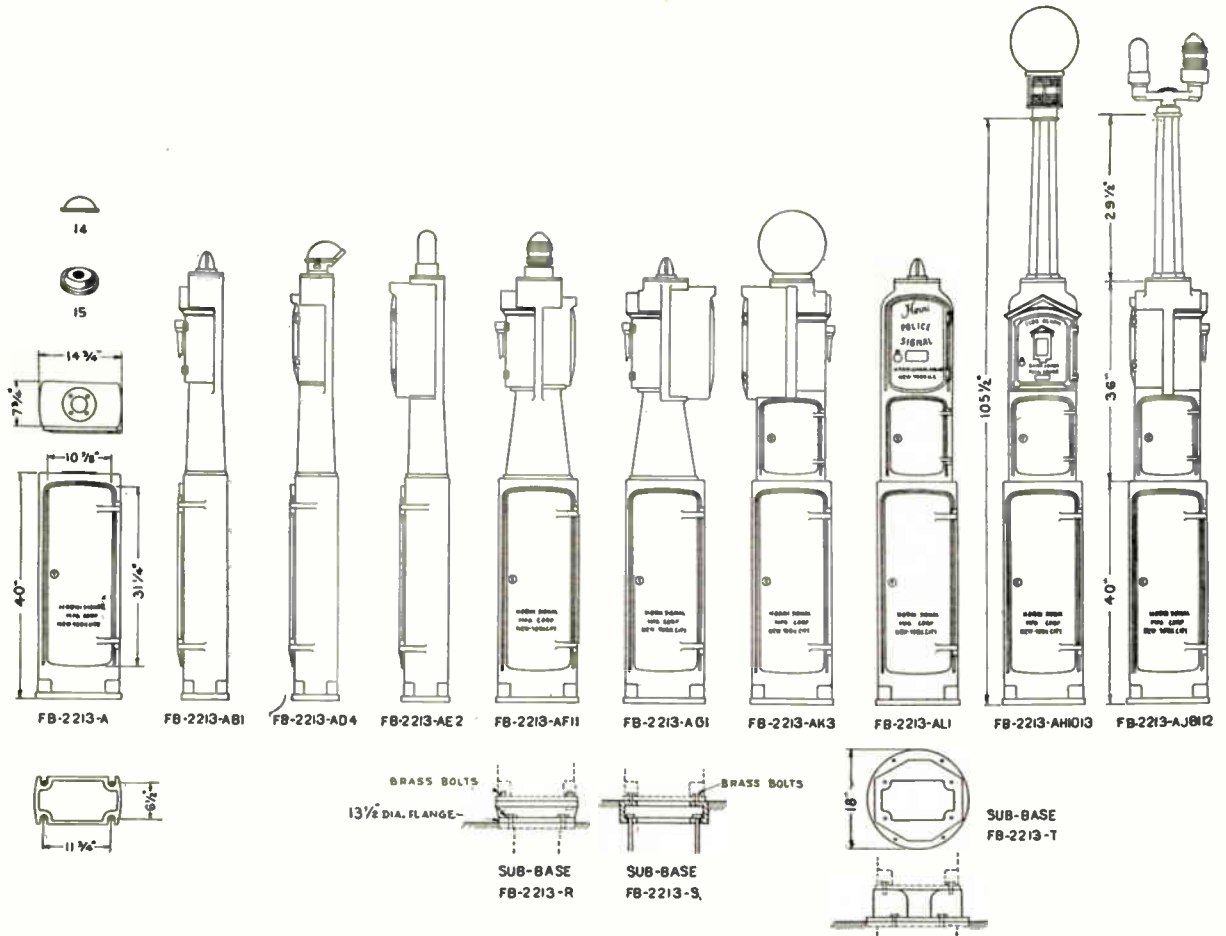


No. TD-10255-HS



No. FB-2213-A

Horni Fire Alarm and Police Signal Box Pedestals



General Symbol FB-2213

Symbol	Type of Upper Pedestal
A	Terminal Housing
B	Fire Box
D	Small Police Box
E	Large Police Box
F	Small Police and Fire Box
G	Large Police and Fire Box
H	Fire and Terminal Box
J	Fire, Small Police and Terminal Box
K	Fire, Large Police and Terminal Box
L	Large Police and Term. Box (Ped. Type Outer Housing)

Symbol	Type of Top
1	Spear Head
2	Marine Globe, 6-Inch
3	Ball Globe, 6x10 Inches
4	Entrance Fitting
5	Post for Marine Globe
6	Post for Ball Globe
7	Post for Entrance Fitting
8	Post with Two-Way Bracket

Symbol	Type of Top
9	Post for Fresnel Globe
10	Post for Combination Fresnel-Ball Globe
11	Conical Fresnel Globe, 6-In.
12	Regular Fresnel Globe, 5 1/4-In.
13	Comb. Fresnel-Ball Globe
14	Hemisphere Cap
15	Adapter

The complete pedestal, of unit manufacture, is of neat appearance, rugged construction and designed to accept all standard fire alarm and police signal boxes.

The terminal housing is of heavy cast iron with a gasketed aluminum alloy cast door fitted to exclude dust and moisture. The housing is equipped with an 11 1/2 x 32-inch back-board for mounting protectors, meters, terminals, etc. Ample space is provided for base entrance of cables and wiring convenience. Outside mounting surface machined to eliminate the necessity of gaskets for assembly. The anchor bolts are provided. Top provided with 2 1/4-inch opening and four 5/8-inch holes on a 4-inch diameter circle.

The upper pedestal or harp is aluminum alloy cast in nine types. All types have a hollow base, four of which include an entrance for local terminal wiring. All are drilled for mounting on terminal housings by means of four brass cap screws which are provided. The outside mounting surface machined to eliminate gaskets for assembly. The top is arranged for mounting the post or fittings as illustrated.

The post or ornamental octagonal column is of aluminum alloy hollow cast. Provided with screws for mounting on

the upper pedestal or harp. The post provides a completed appearance to the pedestal, and a raised support for the fittings as illustrated.

The hemisphere cap is used to seal the top opening when the terminal housing is used without an upper unit.

The adapter is provided with a 1 1/2-inch threaded entrance and may be used when a traffic controller or other type of housing is to be mounted on the meter box.

All exposed surfaces of the units are given a baked primer and two baked finishing coats. Standard finish red, green or special aluminum as ordered.

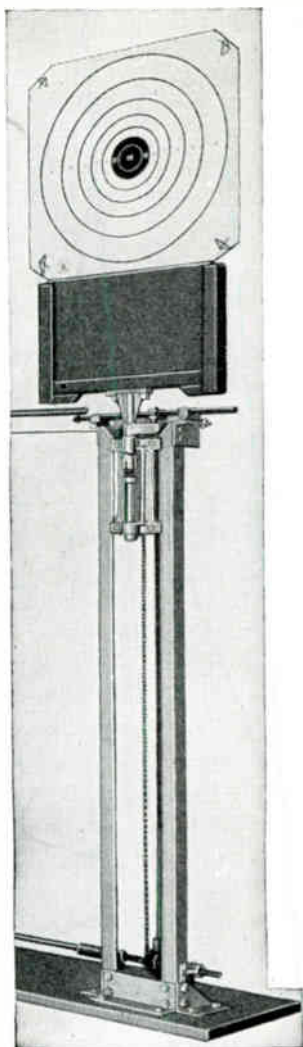
All doors are equipped with stainless hinge pins, standard lock and one key. Special locks can be furnished to order.

When ordering, specify color of Fresnel or ball globes. The globes are not provided unless ordered.



No. FA-2226 Post

Duff-Norton Automatic and Electrically Time-Controlled Pistol and Rifle Targets



Duff-Norton Automatic Target Unit

Used and endorsed by the leading pistol and rifle tournaments throughout the country, the Duff-Norton Automatic Target is the only complete system that accurately times the firing period and completely eliminates the human element and the stop watch in match firing.

It replaces the stationary target, the home-made target turned with ropes and pulleys; eliminates stop watch timing and provides perfect accuracy and absolute fairness to each and every competitor.

The electrically operated target is readily adaptable to indoor and outdoor firing ranges, either as a single unit or in any number of target units desired. It finds wide application among police and government agencies, bank guards, immigration border patrols, government revenue officers, and numerous rifle and pistol clubs throughout the country.

Available in two principal types as follows: The elevating type which provides automatic raising and lowering into a pit or behind a barricade, as well as timing and turning of targets. The non-elevating type (for indoor or outdoor) where no pit is used, incorporating automatic timing and turning features only.

Construction—Extreme simplicity of construction and operation is a feature of this target. The supporting structure of each target unit consists of a structural steel

frame. The target frame is made of white pine wood and the target supporting board of pressed wood. No metal part of the target is exposed above the pit or to the line of fire at any time, preventing the possibility of the ricocheting of bullets.

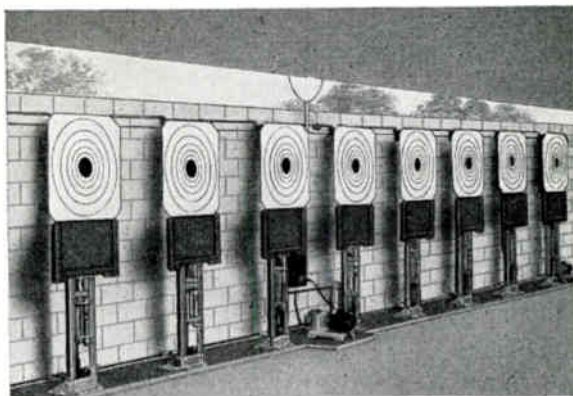
The target base is provided with convenient holes in the flanged portion through which the unit may be securely fastened to a wooden plank.

All movements of the targets are mechanically operated by a compact motor driven power unit mounted on the wooden plank base on which the target units are mounted. This power unit is operated by remote control through the Duff-Norton Electric Timer located near the firing point.



Portable Timer and Remote Control Unit

The Duff-Norton Electric Timer is conveniently portable for plugging in at any firing point or may be used for central control by the range officer covering all firing points. Equipped with a synchronous motor, this timer is absolutely accurate, providing shooting periods of any number of seconds up to 5 minutes by simply setting the timer knob.



Typical Pit View of Battery of Duff-Norton Interconnected Automatic Targets Operated by Single Motor

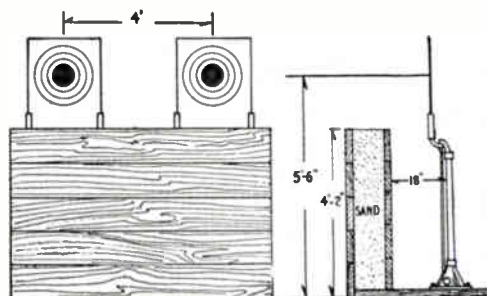
The standard timer furnished for pistol targets is marked for 3 seconds—a bobbing 3-second period when the target faces the shooter for 3 seconds, turns away 3 seconds and repeats this operation 5 times covering the required 5 shots. It is also marked for the 10, 15 and 20-second period and the 5-minute period—the latter being for slow fire at 50 yards. Any other marking desired can be also placed on this timer if different periods of firing are used.

Operation—At beginning of shooting match, range officer first sets timer for desired firing period. At the command, ready, to the contestants, he throws toggle switch on timer which automatically sets targets in motion. Targets immediately turn edgewise for a period of 3 seconds, then automatically return for actual firing period. At the expiration of the allotted firing period, the targets again automatically turn away from the shooters for a period of 3 seconds or less if desired. The targets then reappear and are lowered into the pit by operator from timer control. When lowered into pit, targets are in a convenient position for mounting or removing the target sheets, entirely out of danger from firing line.

One Man Control—Timer control also makes possible one-man control by any shooter desiring to use range by himself for practice, under identical conditions which he finds at a match. He simply sets timer, throws switch, all following operations being entirely automatic. Simple means have also been provided for disconnecting one or any multiple of targets when full complement of targets is not needed.

Shipped Complete Ready for Installation—Includes all interior wiring, masonite backboard, frames and supporting standard. Also, a 1/4-hp. a.c. motor capable of operating as many as ten target units. Any number of target units can be used. For example, if 24 targets are desired, 3 batteries of 8 targets each are recommended. All 3 batteries can be synchronized so that 24 targets operate as a single unit. Targets are spaced at 4-foot centers and interconnecting shafts are flexibly coupled.

The only material provided by customer is the power line (110-volt, 60-cycle) to control box at targets and cable from targets to several firing points. For elevating type, a 4-conductor No. 14 Parkway lead or conduit to firing points is required. For non-elevating targets, a 3-conductor No. 14 Parkway lead or conduit is recommended.



Pitless Installation.

—For installation on ground surface non-elevating type is used. Targets are operated from firing point by electric timer and go through same

sequence of operation as regulation unit, except that they do not go up and down.

Karpark Automatic Penny-Nickel Parking Meters

Manufactured and Sold under Patents of Vehicular Parking, Limited



This parking meter measures a legal parking period (and 10 minutes overtime) for a nickel. It also accurately measures successive, fractional parking periods on the insertion of one-cent coins.

In all, there are 24 possible coin combination settings for variable time limits of 12 minutes to 2 hours.

The success of the parking meter system depends on enforcement, and the meter makes it easier to enforce parking limits. Its use does away with special parking privileges. It also increases curb parking turnover and results in an increase of shoppers entering the business district.

The Karpark Automatic Parking Meter offers municipalities highest quality materials plus highly skilled engineering and workmanship, resulting in an accurate and extra long life meter. It is built in compliance with rigid specifications prepared by the United States Bureau of Standards.

The meter will run more than 10 hours a day for 10 consecutive days without rewinding. There is provision for rewinding by an official.

The appearance of the Karpark Meter is the finest example of parking meter design.

Internally, the mechanism is completely rustproof. It is built of heavy gage solid brass and stainless, rustproof steel. Every gear and pinion is machine cut. Mainspring is of the highest grade of Swedish spring steel which has greater tensile strength and longer life than any other.

The Karpark Automatic Parking Meter is the only meter that has a timing mechanism using a pendulum escapement. The pendulum control is simple; there are only two moving parts; it will run longer on one winding; cannot be harmed by over-winding; and, is more accurate.

An internal expansion clamp holds the meter housing on the hollow supporting post and prevents its being turned. The meter has only one coin slot, and a theft-proof housing. Operation starts automatically the instant the coin is inserted.

A separate timing dial and signal indicates the allotted parking period and the overtime period.

The meter will operate accurately from 50° below zero to 150° above zero.



Industrial Fire Alarm Systems

Industrial fire alarm systems are particularly designed and suitable for factories, schools, colleges, public institutions, hotels, theatres, office buildings, department stores, warehouses, apartment houses, etc. in fact for every class of building where life and property should be protected from fire hazard, but with full consideration that such a fire alarm system must be dependable, yet simple and economical, both as to initial cost and maintenance.

Industrial fire alarm systems may be classified in 2 general types:

Electrically-Supervised Closed-Circuit Code and Non-Code Ringing for local drill alarm purpose and for connection to municipal fire alarm systems.

Non-Supervised Open-Circuit Code and Non-Code Ringing Systems.

Closed-Circuit Systems

Under the closed-circuit systems the following may be furnished:

PLAIN CODE SYSTEMS in which the operation of a station lever causes all audible devices such as gongs, horns, etc. to sound a pre-determined code indicating the point of origin of the alarm.

PRE-SIGNAL CODE SYSTEMS in which the first operation of a station lever causes a code to be sounded on certain audible signals, known as pilots. The second operation of the station by means of a special key will cause the code to be sounded on all audible devices, both pilots and general.

POSITIVE NON-INTERFERING CODE SYSTEM features may be included in either the plain or pre-signal code systems mentioned above. These features prevent the jumbling of the code signal in the event of more than one station being operated at or about the same time.

MASTER CODE SYSTEMS in which one standard code is used this code indicating "Fire" but where the exact location of fire is not required.

INSTITUTIONAL AUXILIARY SYSTEMS in which the operation of a station lever by a person, equipped with the proper key, causes a code to be sounded on all audible signals within the building for drill purposes. In the event of an actual fire the operation of the station lever will cause an alarm to be sounded on all audible devices within the building, and at the same time will transmit a signal over the municipal fire alarm circuits indicating the building on fire.

GROUP-TYPE SYSTEMS are for use where several buildings are to be protected by one system. On such systems the operation of any station lever causes the code-number of that particular station to be sounded 4 times on all local fire alarm signaling devices in that particular building only and also on all pilot signals in that building or any other building in the group. If specified, a general alarm feature arranged to sound all local signals in all buildings can be furnished. Where required, these systems can also be arranged to auxiliariize the Municipal Fire Alarm Systems, through a selective relay, so that, in addition to the signals indicated above, the system will also provide for simultaneously and automatically summoning the Municipal Fire Department.

THERMOSTATIC TYPE SYSTEMS in which stations of the thermostatic-type, which operate automatically in case of fire or excessive heat, are used. Such stations normally provide for continuous signal only on all sounding devices until the fire is extinguished, or cause of excessive heat removed, but, when combined with code-ringing boxes of electric-trip type they will, upon operation, trip the code-ringing box-mechanism, thereby causing the predetermined code of that box to be sounded on audible signal devices on the system. Such thermostatic systems or circuits, can be combined with any of the systems outlined in the foregoing paragraphs.

GENERAL ALARM NON-CODE SYSTEMS on which the breaking of glass in the station operates all signals continuously until glass is replaced or circuit switch is opened.

Open-Circuit Systems

Under the open-circuit systems the following may be furnished:

PLAIN CODE SYSTEMS in which the operation of a station lever causes all audible devices to sound a pre-determined code indicating point of origin of the alarm.

MASTER CODE SYSTEMS in which one standard code is used, this code indicating "Fire" but where the exact location of fire is not required.

GENERAL ALARM NON-CODE SYSTEMS in which the breaking of glass in station operates all audible signals continuously until glass is replaced or circuit switch is opened.

ANNUNCIATOR ALARM SYSTEMS in which the breaking of glass in station operates a corresponding drop on an annunciator indicating point of origin of alarm and also operating audible signals.

Fire Alarm Boxes

Fire alarm boxes for industrial fire alarm systems are manufactured in 9 types, to meet all conditions of fire alarm service as follows:

Positive Non-Interfering Type Code-Ringing Closed-Circuit.

Plain Type Code-Ringing Closed Circuit.

Pre-Signal Type Code-Ringing Closed Circuit.

Double-Code-Ringing Type Closed-Circuit.

Shunt-Type Non-Interfering Code Ringing Closed-Circuit.

Code-Ringing, Electric Trip, Closed-Circuit, Pre-wound Type.

Code-Ringing Electric Trip, Closed-Circuit, Self-Propelling Type.

Closed-Circuit Type, Non-Code Ringing.

Thermostatic Type, Open or Closed Circuit, Non-Code-Ringing.

Open-Circuit Type Non-Code-Ringing.

Code ringing closed-circuit fire alarm boxes are subdivided into the following groups:

Enclosed Pull-Lever Surface and Semi-Flush.

Break-Glass Pull-Lever Surface and Semi-Flush.

Weatherproof Pull-Lever Surface.

Weatherproof Break-Glass Pull-Lever Surface.

Sounding Devices

Sounding devices for fire alarm systems are designed with the utmost care to afford the maximum of protection through dependable operation. Dependability is the more important as fire alarm sounding devices may remain idle for long periods of time and yet must be so constructed that, when the need arises, they function instantly and satisfactorily.

Sounding devices are divided into 2 general classes, viz.:

Electrical Sounding Devices.

Mechanical Sounding Devices.

Electrical sounding devices are predominant for use in fire alarm systems and comprise:

Straight Electric Signal Gongs—Single Stroke and Vibrating.

Electro-Mechanical Signal Gongs.

Small Electric Sirens.

Motor-Driven Horns and

Vibrating Horns.

Mechanical sounding devices consist of compressed air horns.

Fire Alarm Control Cabinets

For regular, pre-signal or dual-operated and double code fire alarm systems.

Fire alarm control cabinets are designed for the control and supervision of Fire Alarm Circuits. They consist of ebony asbestos or slate panels having mounted thereon necessary controller-relays. Trouble-relays, time-limit-cut-outs, meters, terminals, fuses, etc., all being enclosed in heavy pressed steel fireproof cabinets with Yale locked doors. Glass windows are provided in doors to permit ready reading of meters without opening the doors.

Fire Alarm Apparatus

Fire alarm apparatus is steadily being improved in quality and design from year to year and is guaranteed to be electrically and mechanically perfect. Particular attention, however, is called to the necessity of proper installation and maintenance if every day in the year satisfactory service is to be obtained. Installation suggestions are furnished with each system.

Engineering Advice

Our engineering department will promptly advise and cordially co-operate with anyone contemplating the installation or use of fire alarm apparatus.

Edwards Fire Alarm Stations
Schedule D



Nos. 1275-2, 1275-2-DO, 1275-2-M Nos. 1276, 1276-DO, 1276-M

Closed Circuit Code Ringing Stations
For Systems SS, 110-120 V. D.C.; SSA, 110-120 V. A.C.; EMB, Battery
Open Door Pull Lever Type

Open door and pull down lever to sound alarm. Lever automatically disengages from mechanism, and subsequent pulling has no effect on proper operation of system. May be run for test without operating system by use of a test key. Finish is red enamel with raised aluminum letters.

No. 1275.—Surface type for surface conduit. Overall dimensions, 7 $\frac{1}{8}$ inches high, 5 $\frac{7}{8}$ inches wide, 5 inches deep. Approximate weight, 8 $\frac{3}{16}$ pounds.

No. 1275...... each \$40.00

No. 1276.—Semi-flush for concealed conduit. Overall dimensions, 8 $\frac{1}{2}$ inches high, 7 $\frac{3}{16}$ inches wide; including wall box, 7 $\frac{3}{4}$ inches high, 5 $\frac{3}{4}$ inches wide, 3 $\frac{3}{8}$ inches deep. Approximate weight, 9 $\frac{1}{16}$ pounds.

No. 1276...... each \$40.00

Approximate weight wall box only, 3 $\frac{3}{16}$ pounds.

Break Glass Pull Lever Type

Breaking glass unlatches door, which springs open and remains so. Pulling down lever causes sounding of alarm. Door may be opened for test without breaking the glass by use of special key, otherwise station is same as Nos. 1275 and 1276.

No. 1275-2.—Break-glass surface type for surface conduit. Overall dimensions same as No. 1275. Approximate weight, 8 $\frac{3}{16}$ pounds.

No. 1275-2...... each \$46.00

No. 1276-2.—Break-glass semi-flush type for concealed conduit. Overall dimensions same as No. 1276. Approximate weight, 9 $\frac{1}{16}$ pounds.

No. 1276-2...... each \$46.00

Approximate weight wall box only, 3 $\frac{3}{16}$ pounds.

Closed Circuit Pre-Signal Code Ringing Stations
For Systems PSS, 110-120 V. D.C.; PSSA, 110-120 V. A.C.;
PEMB, Battery

Designed and constructed the same as stations described above, except that the pre-signal alarm is sounded four times at pre-determined places only. If upon investigation it is found desirable to sound a general alarm to clear the building, this may be done by inserting a special key in any box and pulling lever.

No. 1275-DO, Same as No. 1275..... each \$46.00

No. 1276-DO, Same as No. 1276..... each 46.00

No. 1275-2-DO, Same as No. 1275-2..... each 52.00

No. 1276-2-DO, Same as No. 1276-2..... each 52.00

For City Connected Systems

For Systems SSM, 110-120 V. D.C.; SSAM, 110-120 V. A.C.

Designed so pulling lever sounds general alarm within building and through control panel relay operates a city fire alarm station. For fire drills a key is used at any station before pulling lever to prevent city station from operating.

No. 1275-M, Surface Type, Same as No. 1275... each \$46.00

No. 1276-M, Flush Type, Same as No. 1276.... each 46.00

No. 1275-2-M, Surface Type, Same as No. 1275-2 each 52.00

No. 1276-2-M, Flush Type, Same as No. 1276-2 each 52.00

Special Features for Code Stations

220-240 volts operation, when specified, no extra charge. Two sets of contacts, 1 code wheel, add, \$2.00. Two sets of contacts, 2 code wheels, add, \$4.00. Shunt type arrangement, add, \$7.15. Hammer and chain for any station, \$1.38 each. Glass for any station, \$.28 each. No. 1290 weather-proof case, drilled for $\frac{1}{2}$ or $\frac{3}{4}$ -inch conduit, add, \$35.00. When used with No. 1275 station, the cover of the latter is omitted, for which an allowance of \$2.90 is made from price of No. 1275.

Edwards Hammerless Break-Glass Non-Code Fire and Emergency Stations

6-125 Volts
Schedule D



First pull of lever breaks glass, allowing plunger to come into alarm position. Lever falls down, displaying arrow danger signal and words, "Replace Glass" on reverse side—immediately indicating which station has been operated and a constant warning to reset it.

Eliminates lost or stolen hammers, marred walls, etc. With hammer type stations, person may not completely break glass. In this station, glass must break completely with first easy pull. Hitting or leaning against lever will not break glass and accidental or mischievous operation is minimized.

Hinged front, unlocked with key, for test or fire drill. Size, 3 $\frac{1}{8}$ x4 $\frac{1}{8}$ inches. Standard finish, red with raised aluminum letters. Word "Emergency" can be substituted for "Fire."

Open circuit non-code stations are Underwriters' approved. Laboratories will not grant approval for non-code closed circuit stations.

No. 227, Flush-Open Circuit, Fits Std. Switch Box, Etc., Wt., 1 $\frac{1}{4}$ Lb..... each \$10.00

No. 227C, Flush-Closed Circuit, Fits Std. Switch Box, Etc., Wt. 1 $\frac{1}{4}$ Lb..... each 10.00

No. 228, Surface-Open Circuit, Cast Fitting for $\frac{1}{2}$ -Inch Pipe, Wt. 3 $\frac{1}{2}$ Lb..... each 12.00

No. 228C, Surface-Closed Circuit, Cast Fitting for $\frac{1}{2}$ -Inch Pipe, Wt. 3 $\frac{1}{2}$ Lb..... each 12.00

For all bronze finish with polished letters, add .25%.

No. 2024 Faraday Flush Type Fire Alarm Boxes

Open or Closed-Circuit

Schedule D



A break-glass box, finished in glossy English vermilion.

Fits a standard outlet box for conduit. Height, 4 $\frac{3}{8}$ inches; width 3 $\frac{1}{8}$ inches.

For fire alarm systems where it is not required that location of box be indicated.

Can be furnished hinged hammer type in place of chained hammer type at same price.

No. 2024..... each \$10.00
Extra glasses, 44 cents; chain and hammer, 60 cents.

No. 2077 Faraday Surface Type Fire Alarm Boxes

Open-Circuit, Non-Code-Ringing

Schedule D



A break-glass box, English vermilion finish; non-conduit installations.

Height, 4 $\frac{3}{4}$ inches; width, 3 inches; thickness, $\frac{3}{4}$ inch.

For systems where it is not required that location of box from which signal originates be indicated by automatic code-ringing of gong and where failure of operative current or derangement of circuits or apparatus is not required to be automatically indicated.

No. 2077..... each \$2.90
Extra glasses, 44 cents; chain and hammer, 60 cents.

Faraday Fire Alarm Apparatus

Listed as Standard by Underwriters' Laboratories
Schedule D

Fire Alarm System F

For 110-125 Volt A.C. Circuits

Faraday Fire Alarm System F is an electrically supervised, code-ringing, closed-circuit system using single-stroke a.c. gongs. It is for use only where there is a dependable source of 100-125 volt, 60-cycle (25-30 volt and 40-cycle to order) a.c. current.

Recommended for factories, warehouses, lofts, schools, etc. May also be used for small hotels, apartment-houses, small hospitals and similar institutions.

The pulling of any box causes a general alarm to be sounded. This alarm is coded showing the location of the box pulled.



No. 2022

Code-Ringing Fire Alarm Boxes for System

No.	Description	Each
2022	Surface Type, Pull Lever.....	\$40.00
2023	Semi-Flush, Pull Lever.....	40.00
2032	Surface Type, Break Glass.....	46.00
2033	Semi-Flush, Break Glass.....	46.00

No. 5150 A.C. Single Stroke Fire Alarm Gongs

Monitor Pattern—Non-Guarded

Size Gong Inches	Each
4	\$14.40
6	19.20
8	21.60
10	25.60
12	28.80



Fire Alarm Control Cabinets

Complete with One Trouble Bell



System F Faraday Fire Alarm Control Cabinet

No.	1-F	2-F	3-F	4-F	5-F
Each.....	\$220.00	280.00	340.00	400.00	450.00
No. of Gong and Box Circuits...	1	2	3	4	5
For Each Additional Box Circuit over 5.....	add \$10.00				
For Each Additional Gong Circuit over 5.....	add 50.00				
For Each Add. Trouble Bell up to 6" or Cow Gong.....	add 20.00				
For Double Supervision (No Battery).....	add 110.00				
For 1 Trouble Light and 1 Silencing Switch.....	add 55.00				
For Glass Panel Door, 1 to 5 Gong Circuits.....	add 33.00				
For Metal Placard Frames, Red Enamel Finish,					
6x 8 Inches.....	add each 3.00				
8x10 Inches.....	add each 4.00				
10x12 Inches.....	add each 5.00				
12x18 Inches.....	add each 6.00				

Not more than 20 boxes or 10 gongs, wired in series, should be placed on any one circuit.

Federal Fire Alarm Boxes



Any number of these fire alarm boxes may be used and located throughout the territory to be protected.

Pulling down the lever of the box operates the siren up and down the scale automatically for a predetermined length of time and then automatically shuts it off. Only two wires are needed to connect this box to the remote control. For use with any siren.

Fire Alarm Box.....	each \$35.00
Fire Alarm Box (Weatherproof).....	each 50.00

Perfection Teletypewriter Tape

A sensitized coated paper that copies from pressure without carbon.

It is ideal for duplication; gives more yardage and assures clear, distinct and positive copies.

8 1/16-Inch Teletypewriter

Gummed or Ungummed

Furnished for single copies, 2, 3, or 4 copies, thin carbon, and 2, 3 or 4 copies blue carbonless.

Shipped in rolls of 320 feet, 4 1/2 inches in diameter, weighing 4 pounds, and packed 9 rolls to carton.

1 1/16-Inch Oiled Perforator Tape

Shipped in rolls of 1040 feet, 8 inches in diameter, weighing 1 1/2 pounds, and packed 50 rolls to carton.

3/8-Inch Teletype Tape

Gummed or Ungummed

Shipped in rolls of 1050 feet, 8 inches in diameter and packed 50 rolls to carton.

Gummed rolls weigh 7.65 pounds, and un gummed rolls weigh 0.54 pounds.

Fire Alarm Tape

Width, 1/2 inch, 4 1/2 to 5 inches diameter, weighs 4 to 5 ounces per roll, 36 rolls to package, 288 rolls to carton.

Width, one inch, 4 1/2 to 5 inches diameter, weighs 8 to 10 ounces per roll, 18 rolls to package, 144 rolls to carton.

Police Register Tape

Width, 1 5/16 inches; 6 inches diameter, weighs 1 1/2 pounds per roll.

Wrapped 10 or 12 rolls to package, 40 or 48 rolls to carton.

We are also in a position to furnish rolls for any type automatic machines.



Pyrene Fire Extinguishers

For use on all electrical fires and fires from oil, paint, or highly inflammable materials. Liquid is a non-conductor of electricity. Will not freeze at 50° F. below zero.

Size 1 pint and 1 quart, 12 in package; 1½-quart, 6 in package. When ordering enamel finish, specify color.

No.	Charged Each	Description	Cap.
C11	\$10.00	Brass, with Wall Bracket...	1-Pt.
C11A	10.50	Brass, with Auto Bracket...	1-Pt.
C14	12.00	Chromium, with Wall Bracket...	1-Pt.
C14A	12.50	Chromium, with Auto Bracket...	1-Pt.
C21	14.00	Brass, with Wall Bracket...	1-Qt.
C21M	14.00	Brass, Motorcycle Type...	1-Qt.
C21P	14.00	Brass, Airplane Type...	1-Qt.
C21T	14.00	Brass, Heavy Vehicle, Wall Bracket...	1-Qt.
C21TS	15.00	Brass, Heavy Vehicle, with Post Bracket...	1-Qt.
C22	15.50	Nickel, with Wall Bracket...	1-Qt.
C24	16.00	Chromium, with Wall Bracket...	1-Qt.
C25	14.00	Enamel Finish, Wall Bracket...	1-Qt.
C31	17.00	Brass, with Wall Bracket...	1½-Qt.
C31T	17.00	Brass, Heavy Vehicle, with Wall Bracket...	1½-Qt.
C32	18.50	Nickel, with Wall Bracket...	1½-Qt.
C34	19.00	Chromium, with Wall Bracket...	1½-Qt.
C35	17.00	Enamel Finish, Wall Bracket...	1½-Qt.

For price of extinguisher without bracket, deduct prices below.

Extra Brackets

No.	Each	For Size Extinguisher	No.	Each	For Size Extinguisher
B1	\$.75	1-Pt. Standard	B3T	\$1.00	1-Qt. Truck (Clamp Type)
B1A	1.50	1-Pt. Auto	B3TS	2.00	1-Qt. Truck, Steering Post
B2	1.00	1-Qt. Standard	B4T	1.50	1½-Qt. Truck, Wall
B2B	1.50	1-Qt. Marine Brass			

Fire Extinguishing Liquid in Cans

No.	Each	Size Can	No.	Each	Size Can
CR1	\$.75	1-Pint	CR10	\$3.00	2-Quart
CR2	1.50	1-Quart	CR4	5.40	1-Gallon
CR3	2.25	1½-Quart			

Pyrene 2-Quart Pressure Type Fire Extinguishers



This vaporizing liquid type fire extinguisher is operated by air pressure. It is recommended for incipient fires in all classes of material, and especially for inflammable liquids and electrical fires.

It is ruggedly constructed throughout of copper and brass. It has a special combination nozzle which produces a solid stream when opened wide, a fan-shaped spray when opened partially and is closed when in normal position.

The fan-shaped spray instantly vaporizes the liquid, thereby displacing oxygen and smothering the fire, and is especially valuable for extinguishing fires in well-filled containers.

Operated by air pressure, it is easy to use in congested places and to direct the stream where it is most needed.

The air pressure is renewable at any air line producing 100 pounds pressure.

Height 18 inches. Diameter 5 inches.

Sold completely charged and with wall bracket, screws, and recharge date tag. For mounting on vehicles subjected to vibration, a special clamping type bracket is available, which may be mounted on running board, instrument board, side of cab, or deck and in any position.

Weight charged, 16½ pounds; shipping weight 18 pounds.

No. C103, Copper, Wall Bracket.....	each	\$40.00
No. C102, Nickel, Wall Bracket.....	each	43.00
No. C104, Chromium, Wall Bracket.....	each	44.00
No. B12, Vehicle Bracket.....	each	6.00
No. CR10, 2 Quart Pyrene Liquid.....	each	3.00

Pyrene Fire Extinguishers

Pressure Type

Capacity 1 Gallon



Adapted especially for use by large industries, public utilities, railroads and oil companies, for protection of busses, motor trucks, motor boats, filling stations and all electrical equipment, and wherever greater fire fighting capacity is needed. Discharges completely in 55 seconds.

This extinguisher is inspected and labeled by the Underwriters' Laboratories and approved by the Associated Factory Mutual Laboratories.

No. C43 Polished Copper.....	each	\$70.00
No. C42 Copper, Buffed Nickel.....	each	73.00
No. C44 Copper, Chromium-Plated.....	each	74.00

Hydrogarde Fire Extinguishers

This water type extinguisher discharges a 40 to 50-ft. stream of plain water without pumping or chemicals, by means of pressure from a carbon dioxide gas cartridge. For fires in wood, paper, textiles, etc. Filled with distilled water, it may be used on telephone switchboard fires. Operated by turning upside down and striking plunger on floor to release gas pressure. Safety valve relieves excessive pressure in case of over-filling with water. Annual recharging is not required; refill with water and insert new cartridge. Inspected and labeled by Underwriters' Laboratories. Cap., 2½ gallons.



No. H13, Polished Copper.....	each	\$22.50
No. H12, Copper, N.P.....	each	24.50
No. H14, Copper, C.P.....	each	25.50
No. H15, Copper, Enamel Fin.....	each	22.50

No. HC1 extra cartridge complete and recharging cartridges prices on request.

Kidde Water Type Fire Extinguishers

Capacity, 2½ Gallons



Meets all insurance requirements for the protection of buildings, factories, dwellings, mills and other occupancies where wood, rubbish, paper or textile fires may occur.

This extinguisher utilizes water as the extinguishing medium. The water is discharged by the pressure released from a cartridge of carbon dioxide gas. Since the gas does not deteriorate with age, there is no necessity for annual recharging the extinguisher.

The water stream attains instant full range which is not diminished as the level of the water in the extinguisher is lowered. This equipment contains no acid and no soda; therefore, it is not subject to interior corrosion.

To operate the extinguisher it is turned bottom up and struck on the ground. This action releases the carbon dioxide gas from its small cartridge. The gas is then discharged through a tubular metering cutter so that the application of pressure is constant until the extinguisher is completely empty.

The entire carbon dioxide cartridge assembly is hermetically sealed and the cartridge is enclosed in a nickel-plated copper jacket to prevent corrosion.

The interior of the shell of the extinguisher is lead coated with a standard red lacquer finish on the outside.

Approved by the Underwriters' and Factory Mutual Laboratories, and U.S. Bureau of Marine Inspection and Navigation.

Prices upon application.

Klaxon Industrial Horns

5 to 255 Volts, D.C.
10 to 460 Volts, A.C.

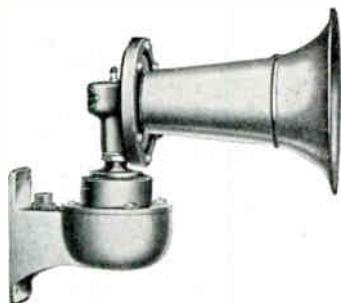
Electric motor-driven signal sounding devices, designed for operation on higher voltages; for time signals, code calls, telephone calls, etc. May be used with safety as fire or special hazard alarms or as warnings on cranes, derricks, etc.

With weatherproof housings and fitted with brackets for wall mounting; tapped for conduit.

Fire red lacquer finish.

When ordering specify type desired; give voltage or current supply and if a.c. or d.c., advise cycle frequency if current is a.c.

Type WL



With a long projector. Has a deep, penetrating note and is recommended where long distances are to be covered or where it is desired to direct the note toward a given point.

In open country, where there are not other unusual sounds, this horn can be heard a distance of 1 mile.

Length, 14¼ inches; height, 13 inches.

Shipping weight, 29 pounds.

Type WL.....each \$35.00

Type WS



Has a short projector, producing a harsh, piercing note which scatters in all directions.

Especially suited for indoor use under severe noise conditions.

Length, 7½ inches; height, 11¾ inches.

Shipping weight, 24 pounds.

Type WS.....each \$35.00

Type W



Furnished with a ram's horn projector which directs its deep tone downward. Ideal for overhead or outdoor use.

Length, 12¼ inches; height, 11¾ inches.

Shipping weight, 29 pounds.

Type W.....each \$35.00

Nos. 1542-A and 1543-A



A small vibrator type horn for inside or protected outdoor use. Can be heard over large areas above the din of factory or other noises. No oiling necessary.

Length, 5⅝ inches; height, 6½ inches, including mounting bracket.

Shipping weight, 5 pounds.

No. 1542-A, for Operation on 110 Volts, 60 Cycles. ea. \$5.00
No. 1543-A, for Operation on 110 Volts, D.C....each 5.00

Edwards Industrial Horns

Schedule T



No. 311



No. 312

A backplate mounts directly on wall for non-conduit wiring, or on 4-inch square box, standard switch box, any outlet box with single gang cover, any single gang conduit or wiremold type fitting. An envelope containing all the necessary mounting screws is supplied with each horn. For open wiring, washers are supplied to raise back plate from wall enough for wires to pass underneath it. Wires are brought through entrance holes in plate and connections made to binding posts in front of plate where there is plenty of room to work. The horn is then hung on two strong lugs and pressed home, where it snaps solidly into place and is held securely. To prevent tampering, a few turns on a set screw at bottom of each device locks it in place.

Indoor Types

No. 311.—Powerful signal for all indoor uses. Grille front affords pleasing appearance which recommends it for schools and better buildings. Easily installed flush. Size of horn, 5½ inches diameter, 3¾ inches deep.

No. 310.—Equipped with megaphone projector to allow greater volume than grille type. Adaptable for indoor use where machinery noises must be overcome. Size, 6 inches high, 6 inches deep, 10¾ inches long.

No. 314.—Indoor 2 direction type. Size, 6 inches high, 7½ inches deep, 18 inches long.

Weatherproof—Outdoor Types

Thoroughly weatherproofed. Equipped with cast iron back box.

No. 312.—Powerful signal, for average outdoor uses. Single megaphone. Size, 5½ inches high, 5½ inches deep, 10¾ inches long.

No. 313.—Two direction megaphone. Size, 5½ inches high, 9 inches deep, 17½ inches long.

No.	12-30 V. A.C.		120 V. A.C.		220 V. A.C.		Approx. Weight Pounds
	60 Cy. Each		60 Cy. Each		60 Cy. Each		
310	\$12.50		\$12.50		\$15.00		6
311	11.25		11.25		13.75		5
312	15.00		15.00		17.50		8
313	20.00		20.00		22.50		10
314	17.50		17.50		20.00		8

Standard frequency 60 cycles. 25 cycles supplied at no extra charge if specified.

For d.c. voltages add \$2.50 to prices shown. Add letter D to number. Specify exact voltage.

Series Operation: Divide full available voltage by number of horns per circuit to find voltage per horn for pricing. Give full details when ordering. D.c. horns cannot be operated in series.

No. 309 Edwards Flush Horns

12-30, 120, 220 Volts A.C., 60 Cycles
Schedule T



For flush installations particularly in new buildings such as schools and other public institutions.

Tone adjustment may be made after horn is installed in wall.

Standard face is steel, finished black.

Size of face plate, 6½x6½ inches. Wall cut size, 5⅝x5⅝x2½ inches deep.

No. 309, 12-30 V. or 120 V. A.C.....each \$20.00
No. 309, 220 V. A.C.....each 22.50

Price includes steel wall box with combination ½ and ¾-inch knockouts on 4 sides. Sprayed bronze or prime white no extra charge, if specified. Bronze plate add \$2.50.

25 to 40 cycles can be supplied at same price when specified. For d.c. specify No. 309D, add \$2.50 and specify voltage.

Federal Sirens
Type A



Takes the place of bells, gongs, whistles, etc., wherever electricity is available. No gears or vibrating parts. Totally enclosed high speed ball-bearing universal motor 6 to 250 volts, a.c. or d.c., 1/2 hp., carries on the motor shaft the sound producing fan rotating in an aluminum stator, the whole assembly enclosed in a weatherproof housing with swivel bracket

to permit any mounting. Length overall, 17 inches. Diameter horn, 10 inches.

Shipping weight, 15 pounds.

Type A, Standard each \$40.00
Type A (For Short, Sharp Code Signals)..... each 75.00

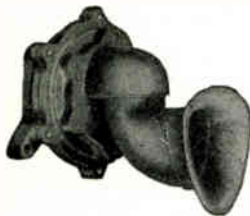
Type D—Standard

Similar to Type A, but is equipped with 1/2-hp. motor and has a deeper tone. Length overall, 19 inches. Diameter horn, 9 1/2 inches. Finished in red lacquer.

Shipping weight, 17 pounds.

Type D..... each \$45.00

Federal Standard Vibratory Horns



Ideal for use in mills, mines, yards, warehouses, public buildings, and in any location where a distinct code signal or long warning blast is desired. Whether for interior or exterior use, this horn is weatherproof and watertight. Constructed throughout of non-corrodible materials.

The housing is tapped at top and bottom for 1/2-inch conduit.

Die cast from special non-corrodible alloy.

Projectors on Models 30, 40, 50 and 51 can be rotated.

Aluminum finish. Packed 1 to a carton.

Model.....	Grill		Single Projection		Double Projection	
	30A	40A	30	40	50	51
Each.....	\$7.50	9.50	10.00	12.00	13.50	15.50
Current.....	A.C.	D.C.	A.C.	D.C.	A.C.	D.C.
Cycle.....	60		60		60	
Ship. Wt....lb.	4 1/4	4 1/4	6 1/2	6 1/2	7	7

Available for concealed conduit mounting, if specified, at no additional charge. Horn can be furnished for flush mounting for \$6.00 additional. All models available in any specified voltage from 6 to 250 with no increase in price for 25 cycle.

Federal High Power Vibratory Horns



Similar in all details to the standard model, but provides almost double the sound volume. Where maximum volume is required, it has an advantage over motor driven units because it can be coded much more rapidly. This horn which is also weatherproof, watertight, and non-corrodible fills a definite need in applications where an ordinary horn is not satisfactory.

Die cast from special non-corrodible alloy.

Projector on Models 32, 42, 33 and 43 can be rotated.

Aluminum finish. Packed 1 to a carton.

Model.....	Grill		Single Projection		Double Projection	
	31	41	32	42	33	43
Each.....	\$12.50	14.50	15.00	17.00	19.00	21.00
Current.....	A.C.	D.C.	A.C.	D.C.	A.C.	D.C.
Cycle.....	60		60		60	
Ship. Wt....lb.	4 1/2	4 1/2	6 1/2	6 1/2	9 1/2	9 1/2

Available for concealed conduit mounting at no additional charge and for flush mounting at \$6.00 additional. Also available in any specified voltage from 6 to 250 with no increase in price for 25 cycle.

Federal Vertical Electric Sirens



Vertical general alarm and code sirens provide effective signals for industries and municipalities. The vertical design distributes the sound equally in all directions over a radius of from 1/4 to 3 miles. Grease sealed ball bearings and heavy duty construction assure maximum durability and performance. The heavy galvanized sheet metal housing makes the siren completely weatherproof but does not muffle tone.

Large sirens should be operated through a remote control to which any number of push buttons, or pull lever boxes may be connected.

HP.	Each	Remote Control	Volts	Motor Current	Cycles Phase	Ship. Wt. Lb.
1	\$150.00	\$15.00	110	A.C., D.C.	Any 1	70
2	215.00	20.00	110-220	A.C., D.C.	Any 1	90
3	315.00	30.00	220-440	A.C.	60 3	385
3	330.00	30.00	220	A.C.	60 1	450
5	360.00	40.00	220-440	A.C.	60 3	485
5	395.00	40.00	220	A.C.	60 1	505
7 1/2	400.00	40.00	220-440	A.C.	60 3	515
7 1/2	435.00	40.00	220	A.C.	60 1	525

Federal Vehicle Sirens

A complete line of powerful sirens, with or without flashing lights for fire apparatus, ambulances, police cars, and other emergency vehicles, ranging in price from \$15 to \$100.

Write for complete literature.

Federal Resonating Horns



A powerful electric horn with pleasant but penetrating trumpet tone. Overcomes unusual noise levels.

Body is of special non-corrodible alloy.

Horn is of sheet metal. Weatherproof and watertight. Specify definite voltage and cycle desired.

Packed 1 to a carton. Shipping weight, 11 pounds.

Model 55, A.C. 25-60 Cy., 12 to 250 V..... each \$40.00
Model 56, D.C. 6 to 250 V..... each 40.00

Federal Motor Driven Howlers

No.	110 V. A.C.	110 V. D.C.	Type Projector	Ship. Wt. Lb.
	Each	Each		
20	\$34.00	\$37.00	Single, Weatherproof	21
60	37.50	40.50	Double, Weatherproof	24

Klaxon Horn Buttons

6-32 Volts



No. 1840570..... each \$3.35
No. 1866795 Set, Display of 8 No. 1840570 Buttons
..... per set 2.80

Klaxon Horn Relays



No..... 1116775 1116781
Each..... \$.65 .75
Volts..... 6 12

Federal Compressed Air Horns

Available for Any Pressure From 15 to 150 Pounds



Federal Compressed Air Horns operating on a principle of diaphragm vibration are characterized by greater power and minimum air consumption.

Horns are of cast bell bronze, accurately machined and tuned to match diaphragm tone.

Each successively larger unit is more powerful and lower pitched. A tone frequency of 725 cycles per second is a shrill piercing note. A tone frequency of 105 cycles per second has the depth and timbre of a steamship whistle.

Hand or electric valves are also available.

When ordering, specify air pressure for horns, and pressure and current requirements in ordering valves.

Prefix number indicates diaphragm size.

No.	Horn Each	Hand Valve Each	Elec. Valve Each	Length Over All In.	Pipe Size In.	Type Conn.	Freq. CPS.	Ship. Wt. Lb.
3H	\$18.00	\$6.00	\$13.00	4¾	¾	Screw	725	4
3M	25.00	6.00	13.00	6½	¾	Screw	420	5
3L	30.00	6.00	13.00	12½	¾	Screw	350	6
4H	35.00	7.50	15.00	7½	¾	Screw	470	7
4M	50.00	7.50	15.00	11	¾	Screw	380	12
4L	60.00	7.50	15.00	14½	¾	Screw	290	14
6H	75.00	10.00	40.00	11½	¾	Screw	310	20
6M	85.00	10.00	40.00	15	¾	Screw	255	22
6L	100.00	10.00	40.00	18½	¾	Screw	190	25
8H	135.00	10.00	40.00	14½	¾	Flange	240	50
8L	200.00	10.00	40.00	21½	¾	Flange	170	60
10H	210.00	12.50	60.00	16	1	Flange	200	60
10L	250.00	12.50	60.00	32	1	Flange	125	120
12H	350.00	25.00	110.00	32	1½	Flange	130	180
12L	400.00	25.00	110.00	36	1½	Flange	105	200

No. 135 Schwarze Kodaire A.C. Industrial Signals

For A.C. Light and Power Circuits, 50 Cycles and Higher
Schedule S



Kodaire is an all-electric air blast coding signal that actually masters industrial noises. It produces a non-synchronous trumpet blast that will penetrate noises where the conventional signals cannot be heard. The Kodaire is designed primarily for coding and paging purposes.

Widely used in industrial plants, machine shops, foundries, mills, railroad and ship yards, construction projects, quarries, power plants, lumber camps, mines, oil fields and similar places where considerable noise or distance is involved. For series or parallel operation.

Adapted to all types of installations because the entire mechanism is completely enclosed in a cast iron weatherproof housing. Concealed terminals are provided in a readily accessible compartment equipped with three tapped ½-inch conduit entrances. Equipped with a convenient bracket for solidly mounting on a column, beam or similar structure. The horn projector may be pointed and locked in any desired direction.

Height, 15 inches; length, 23 inches; width, 6 inches.

Finish: regular duty, black crackle enamel; fire duty, red enamel.

Approximate shipping weight, 30 pounds.

For 110 Volts A.C. each **\$37.50**
For 220 Volts A.C. each **40.50**

Benjamin Motor Driven Signals

Listed by Underwriters' Laboratories



No. 8175

A weatherproof signal of unusual tone and penetration. Used indoors or out where service requirements are exacting. For use in steel mills, railroad shops, foundries, and all locations where noise is excessive.

Pitch of signal is correct for cutting through conflicting noise. Suited for coding as there is no lag or coasting of motor to blur the coded signal.

Signal has heavy cast body, weatherproof rubber gaskets, drop-forged, heat-treated alloy steel ratchet and diaphragm anvil, phosphor bronze armature bearings, and automatic wick-feed lubrication. Motor is series wound for starting power, and has correct r.p.m. to produce penetrating tone. A set screw at rear of housing controls volume and pitch.

Standard voltage: 110 and 220 volts, 60 cycles a.c. or 110 and 250 volts, d.c. Power consumption, 55 watts.

The double projector type motor-driven signal is used where sound is to be projected in opposing directions from a central location.

Conduit connection, ½ inch.

Finished in battleship gray enamel. Red enamel furnished at an advance of \$1.25.

Weight, 24 pounds.

With 8½-Inch Single Bell Type Projector

*A. C.			†D. C.		
No.	Each	Volts	No.	Each	Volts
8175-110V	\$40.00	100	8176-110V	\$42.50	110
8175-220V	45.00	220	8176-250V	47.50	250

With Double Bell Type Projector

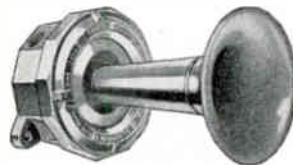
8180-110V	\$42.50	110	8181-110V	\$45.00	110
8180-220V	47.50	220	8181-250V	50.00	250

*Also operates on 50, 40 or 30 cycles.

†Also operates on 25 cycles, a.c.

Benjamin Weatherproof Fire Alarm Howlers

Listed by Underwriters' Laboratories



For use on fire alarm systems operating under stringent regulations.

The threaded ring separable construction, and plug-in type of wiring connection assures quick, simple installation.

D.c. howler has interrupter with coin silver contacts protected by condensers against arcing. A.c. howler has no contact; vibrations follow cycles of a.c.

The horn assembly consists of a 7½-inch seamless bell type steel projector permanently attached to a pressed steel cover on which is mounted the horn mechanism.

Baked red enamel finish.

Shipping weight, 6¾ pounds.

D. C.			*A. C., 60 Cycles		
No.	Each	Volts	No.	Each	Volts
8560-110V	\$17.50	110	8564	\$15.00	8
8560-220V	20.00	220	8565	15.00	14
.....	.....	.....	8566-110V	15.00	110
.....	.....	.....	8566-220V	17.50	220

*Standard, 60 cycles, 25 cycles furnished when specified.

Benjamin Heavy-Duty Weatherproof Howlers

Listed by Underwriters' Laboratories

Ideal for effective calling or warning in industrial and commercial locations.

The threaded ring separable construction and plug-in type of wiring connection assures quick, simple installation. Operates on either series or multiple circuits.

Identical outlet box housings and union attaching rings are supplied on all signals, assuring complete interchangeability of projectors.

The outlet box housing is a heavy metal casting to which the projector assembly is attached by the cast aluminum threaded union ring. The joint between these two assemblies is sealed by a rubber gasket.

Housings are regularly tapped on one side only for 1/2-inch conduit entrance but can be tapped for 3/4-inch conduit, when specified. Housings can also be tapped straight through for either 1/2 or 3/4-inch conduit at an advance of 5 cents in list price.

D.c. howler has interrupters with coin silver contacts protected by condensers against arcing. A.c. howler has no contacts; vibrations follow cycles of a.c.

Baked battleship gray enamel finish; red enamel finish, when specified.

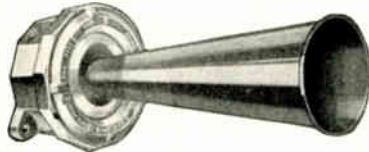
When ordering, specify voltage and frequency.

With 7 1/2-Inch Bell Type Projector



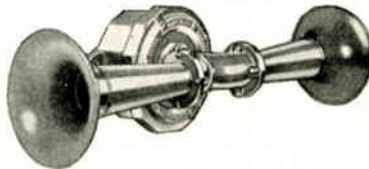
*A.C., 60 Cycles			D.C.		
No.	Each	Volts	No.	Each	Volts
8546-12V	\$15.00	†12	8526-6V	\$17.50	6
8546-24V	15.00	†24	8526-110V	17.50	110
8546-110V	15.00	110	8526-220V	20.00	220
8546-220V	17.50	220	8526-250V	20.00	250

With 14-Inch Conical Type Projector



*A.C., 60 Cycles			D.C.		
No.	Each	Volts	No.	Each	Volts
8557-12V	\$15.00	†12	8558-6V	\$17.50	6
8557-24V	15.00	†24	8558-110V	17.50	110
8557-110V	15.00	110	8558-220V	20.00	220
8557-220V	17.50	220	8558-250V	20.00	250

With Double Bell Type Projector



*A.C., 60 Cycles			D.C.		
No.	Each	Volts	No.	Each	Volts
8590-12V	\$20.00	†12	8599-6V	\$22.50	6
8590-24V	20.00	†24	8599-110V	22.50	110
8590-110V	20.00	110	8599-220V	25.00	220
8590-220V	22.50	220	8599-250V	25.00	250

Benjamin Factory Non-Weatherproof Howlers

Listed by Underwriters' Laboratories

Suitable for use in all locations where signals of weatherproof construction are not required.

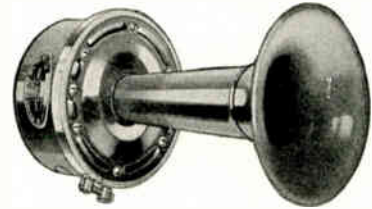
The signal housing is of heavy gage pressed steel, while projectors and grilles are durably constructed. Clamping band is of electro-plated copper; rubber gasket seals the joint between the housing and horn assembly.

Operates on either series or multiple circuits. D.c. howler has interrupters with coin silver contacts protected by condensers against arcing. A.c. howler has no contacts; vibrations follow cycles of a.c.

Housing has one 1/2-inch size conduit knockout at the back and one at the side and two sets of mounting holes, spaced on 2 3/4 and 3 1/2-inch centers. Double projector type is used with No. 8731 adapter plate.

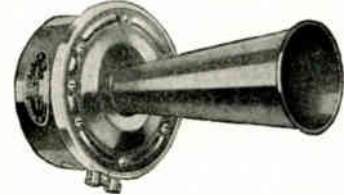
Baked battleship gray enamel finish; red enamel finish, when specified.

With 7 1/2-Inch Bell Type Projector



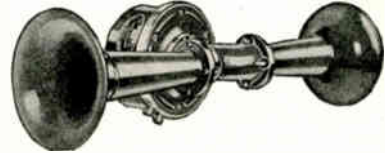
*A.C., 60 Cycles			D.C.		
No.	Each	Volts	No.	Each	Volts
8755-12V	\$12.50	†12	8726-6V	\$15.00	6
8755-24V	12.50	†24	8726-110V	15.00	110
8755-110V	12.50	110	8726-220V	17.50	220
8755-220V	15.00	220	8726-250V	17.50	250

With 9-Inch Conical Type Projector



8752-12V	\$11.25	†12	8751-6V	\$13.75	6
8752-24V	11.25	†24	8751-110V	13.75	110
8752-110V	11.25	110	8751-220V	16.25	220
8752-220V	13.75	220	8751-250V	16.25	250

With Double Bell Type Projector



8795-12V	\$17.50	†12	8794-6V	\$20.00	6
8795-24V	17.50	†24	8794-110V	20.00	110
8795-110V	17.50	110	8794-220V	22.50	220
8795-220V	20.00	220	8794-250V	22.50	250

Projector-Less Type with Grille Front



8741-12V	\$11.25	†12	8740-6V	\$13.75	6
8741-24V	11.25	†24	8740-110V	13.75	110
8741-110V	11.25	110	8740-220V	16.25	220
8741-220V	13.75	220	8740-250V	16.25	250

*Supplied 25 cycles when specified.

†When used with low voltage signals, transformers required.

*Supplied 25 cycles when specified.

†If used with low voltage signals, transformers required.

Benjamin Industrial Buzzers

Listed by Underwriters' Laboratories

Recommended for use on calling and warning systems where the volume of competitive noise is not excessive.

The buzzer mechanism is attached directly to the removable metal cover of the case and it is the armature striking this metal cover which produces the sound.

Heavy Duty Mine Type Buzzer—Tapped 1/2 Inch



For use in tunnels, subways and etc.

Separable construction, with heavy cast metal housing and a steel cover, held in place by a metal threaded union ring.

Housings regularly tapped 1/2-inch, one side only.

Baked battleship gray enamel finish.

*A.C., 60 Cycles			D.C.		
No.	Each	Volts	No.	Each	Volts
8699-12V	\$12.50	†12	8698-6V	\$15.00	6
8699-24V	12.50	†24	8698-110V	15.00	110
8699-110V	12.50	110	8698-220V	17.50	220
8699-220V	15.00	220	8698-250V	17.50	250

Mine Type Buzzer—8-Inch Leads



Weatherproof, with separable construction. Has pressed steel casings with gasketed steel cover, held in place by a metal clamping band.

Sealed assembly, with 8-inch insulated wire leads which feed through a water tight bushing.

Casings have two sets of gasketed attaching holes spaced on 2 3/4 and 3 1/2-inch centers.

Baked battleship gray enamel finish with sprayed aluminum band.

*A.C., 60 Cycles			D.C.		
No.	Each	Volts	No.	Each	Volts
8679-12V	\$9.00	†12	8678-6V	\$11.50	6
8679-24V	9.00	†24	8678-110V	11.50	110
8679-110V	9.00	110	8678-220V	14.00	220
8679-220V	11.50	220	8678-250V	14.00	250

Office and Factory Type Buzzer



Non-weatherproof. Separable construction, with pressed steel housing and steel cover, held in place by a metal clamping band.

Housing has one 1/2-inch size knockout at the back and one on the side; attached to 3/4 and 4-inch standard outlet box. Supplied with No. 8731 adapter plate for attachment to 4-inch square or standard switch boxes, when specified. Baked battleship gray enamel finish, sprayed aluminum band.

*A.C., 60 Cycles			D.C.		
No.	Each	Volts	No.	Each	Volts
8797-12V	\$7.25	†12	8796-6V	\$9.75	6
8797-24V	7.25	†24	8796-110V	9.75	110
8797-110V	7.25	110	8796-220V	12.25	220
8797-220V	9.75	220	8796-250V	12.25	250

*Supplied 25-cycles, when specified.

†Signal transformers to be used with this type.

Benjamin Single Stroke Bells and Chimes

For Series or Multiple Operation

Listed by Underwriters' Laboratories



Bell

Simple in design and positive in operation. Mechanism is of the solenoid type with only one moving part, the plunger, which responds instantly when coil is energized.

Tone volume is adjustable. Soft, medium or loud tones may be obtained by turning set screw at bottom of casing, which regulates plunger stroke.

Installation is simplified by special mounting plate which provides a means of direct attachment to Gem Type Outlet Boxes or to any switch or outlet box cover having mounting holes spaced on 3 1/2-inch centers.

In installing, mounting plate is first attached to outlet box or cover by two screws. Wires are then brought through large center hole in plate, and looped around binding screws. After wiring, device is attached by two screws threading into special mounting plate.



Chime

Plunger is of magnetic iron, with a bakelite striker and moves freely in a bakelite tube. Magnet coil is layer wound, impregnated and not affected by moisture. The chimes are identical in construction to the bells except that a metal chime bar with a metal resonating chamber is provided in place of a gong.

Bell housings are cast iron. Bells are nickel plated; housings, battleship gray finish.

Chime housings are cast iron, crackle lacquer finish. Chime bar and resonating chamber, chromium plated.

*24 Volts

No.	Each	Description	Shipping Wt., Lb.
†8110-24V	\$9.15	3-Inch Diameter Bell, A.C.	3
8111-24V	9.15	3-Inch Diameter Bell, D.C.	3
†8112-24V	10.00	4-Inch Diameter Bell, A.C.	3 1/2
8113-24V	10.00	4-Inch Diameter Bell, D.C.	3 1/2
†8115-24V	12.50	6-Inch Diameter Bell, A.C.	4
8116-24V	12.50	6-Inch Diameter Bell, D.C.	4
†8117-24V	15.85	8-Inch Diameter Bell, A.C.	6
8118-24V	15.85	8-Inch Diameter Bell, D.C.	6

*110 Volts

†8110-110V	\$11.65	3-Inch Diameter Bell, A.C.	3
8111-110V	11.65	3-Inch Diameter Bell, D.C.	3
†8112-110V	12.50	4-Inch Diameter Bell, A.C.	3 1/2
8113-110V	12.50	4-Inch Diameter Bell, D.C.	3 1/2
†8115-110V	15.85	6-Inch Diameter Bell, A.C.	4
8116-110V	15.85	6-Inch Diameter Bell, D.C.	4
†8117-110V	19.15	8-Inch Diameter Bell, A.C.	6
8118-110V	19.15	8-Inch Diameter Bell, D.C.	6
†8120-110V	18.00	Chime, A.C.	5
8121-110V	18.00	Chime, D.C.	5

*220 Volts

†8110-220V	\$13.75	3-Inch Diameter Bell, A.C.	3
8111-220V	13.75	3-Inch Diameter Bell, D.C.	3
†8112-220V	14.60	4-Inch Diameter Bell, A.C.	3 1/2
8113-220V	14.60	4-Inch Diameter Bell, D.C.	3 1/2
†8115-220V	17.90	6-Inch Diameter Bell, A.C.	4
8116-220V	17.90	6-Inch Diameter Bell, D.C.	4
†8117-220V	21.25	8-Inch Diameter Bell, A.C.	6
8118-220V	21.25	8-Inch Diameter Bell, D.C.	6
†8120-220V	20.00	Chime, A.C.	5
8121-220V	20.00	Chime, D.C.	5

*To order special voltages drop voltage suffix of regular number and substitute desired voltage. Bells in voltages to 48, at 24-volt prices; over 48 to 110, at 110-volt prices; over 110, at 220-volt prices. Chimes up to 110 volts, take 110-volt prices; over 110 volts, take 220-volt prices.

†Standard, 60 cycles; 25 cycles furnished, when specified.
‡Signal transformer required to operate.

Benjamin Telecode Relays

Listed by Underwriters' Laboratories

For telephone ringing extension and closed circuit alarm systems in factories, mines, etc., where great volumes of noise make it difficult to hear a telephone bell.

Supplied with contacts arranged for open circuits, contacts open until coil is energized; with contacts arranged for closed circuits, contacts closed until the relay is actuated by current flowing through the coils; and with locking armatures, special winding on coils locks the contacts when the relay is operated, giving continuous operation to signals until circuit is broken by a release switch. Contacts are of tungsten steel; coils are form wound with moisture-proof coverings.

Rated .8 ampere at 110 volts. Standard coil windings, 1000 ohms for operation on 110-v., 60-cy., a.c. or 18 volt d.c. circuits.

Battleship gray enamel finish.

When ordering, specify resistance of telephone bell ringer coils, or voltage and frequency of ringing circuit.

For Panel Mounting

Less Condenser

For direct panel mounting; also used as the basis of all combinations listed below.

Has a bakelite base, 4½ inches in diameter, with two mounting screw holes spaced on 3½-inch centers.

Shipping weight, 2½ pounds.



No.	Description	Each
8313-P	Open Circuit.....	\$12.00
8313-C	Closed Circuit.....	12.00
8313-L	Locking Armature.....	13.50

With Pressed Steel Box

For general use indoors. Steel box with hinged cover; 6x6x3 inches. With ½-inch knockouts on all four sides.

Less Condenser

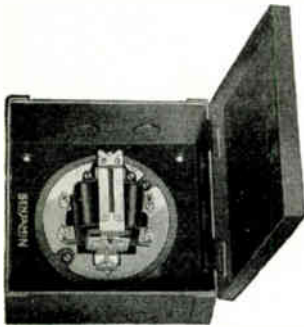
Shipping weight 5¼ pounds.

No.	Description	Each
8315-P	Open Circuit.....	\$12.00
8315-C	Closed Circuit.....	12.00
8315-L	Locking Armature... ..	13.50

***With Condenser**

Shipping weight, 6 pounds.

8316-P	Open Circuit.....	\$16.00
8316-L	Locking Armature.. ..	17.50

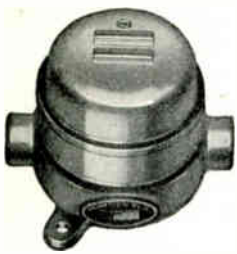


With Explosion Proof Box

Has a cast iron base, threaded to take a cast red brass cover. Joint between cover and base of box is close fitting, deep flanged and of sufficient depth to prevent the escape of flames to the surrounding atmosphere.

Base has two mounting lugs and two hubs with conduit stops.

Main section is 5½ inches in diameter and tapped ½-inch straight through standard; tapped ¾-inch, when specified.



Description	Less Condenser			*With Condenser		
	No.	Each	Ship. Wt., Lb.	No.	Each	Ship. Wt., Lb.
Open Circuit...	8319-P	\$16.00	10½	8320-P	\$20.00	11¼
Closed Circuit...	8319-C	16.00	10½			
Locking Armature.....	8319-L	17.50	10½	8320-L	21.50	11¼

With Water Tight Box

Same type as the explosion proof box, but has cast aluminum cover with a rubber gasket sealing the deep threaded joint between the base and cover.

Less Condenser

Description	Less Condenser			*With Condenser		
	No.	Each	Ship. Wt., Lb.	No.	Each	Ship. Wt., Lb.
Open Circuit...	8322-P	\$14.50	7½	8323-P	\$18.50	8¼
Closed Circuit...	8322-C	14.50	7½			
Locking Armature....	8322-L	16.00	7½	8323-L	20.00	8¼

*Condenser rated 2 mf.

Benjamin Heavy Duty High Voltage Push Buttons

5 Amperes, 125 Volts

Listed by Underwriters' Laboratories

For use with industrial signals. Has quick, make-and-break mechanism, positive acting, mounted on base of high heat molded insulating material for use with circuits carrying inductive loads. All joints are water tight.

Dead black finish.

Non-Locking, Non-Water Tight Type



No. 8465

Open circuit type. Has brass casing with two mounting lugs, and boss tapped for ½-inch conduit one way, side or rear entrance as indicated. Side entrance casing will be tapped ½ or ¾-inch, one way or two way, if specified.

Brass cover threaded for connection to casing.

No.	Each	Description	Wt., Lb.
8465	\$3.00	Side Entrance.....	2
8413	3.00	Rear Entrance.....	2

Non-Locking Type, Water Tight

Suitable for most any kind of electrical signaling. Plunger is normally below the surface of the cap so the button cannot be accidentally operated. Waterproof rawhide gasket seals the plunger opening.

Unmarked name plate furnished.

Single Button



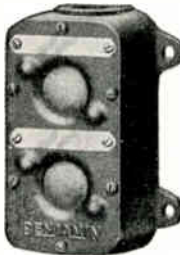
No. 8493

Has brass casing, with two mounting lugs, and one end boss tapped ½ inch.

Casing will be tapped for ½ or ¾-inch pipe one way or two way if specified, without extra charge.

No.	Each	Description	Wt., Lb.
8493	\$3.60	Open Circuit Type.....	2
8874	3.60	Closed Circuit Type.....	2
6998	.76	Mechanism Only (Open Circuit).....	½
6627	.76	Mechanism Only (Closed Circuit).....	½

2-Gang Button



No. 8495

Has brass casing with four mounting lugs and one end boss tapped ½ inch. Casing will be tapped for ½ or ¾-inch pipe one way or two way if specified, without extra charge.

Brass cover fastened to casing with No. 6-32 brass screws.

Name plate is unmarked and regularly positioned as shown in illustration. Specify position of name plates in relation to conduit entrance.

No.	Each	Description	Wt., Lb.
8495	\$5.00	Open Circuit, Beth Buttons.....	3
8884	5.00	Open Circuit, One Button; Closed Circuit, One Button.....	3

Locking Type, Water Tight



No. 8734

For use in round houses, and mines, etc. Has brass casing, with two mounting lugs, and one end boss tapped ½ inch.

Casing will be tapped for ½ or ¾-inch pipe one way or two way if specified, without extra charge. Cover supplied with water tight stuffing box for plunger key.

No.	Each	Description	Wt., Lb.
8733	\$4.00	Closed Circuit Type.....	2
8734	4.00	Open Circuit Type.....	2

Edwards Doorbells and Buzzers

Standard 8-10 Volts A.C., 6-8 Volts D.C.
Schedule E



No. 710



No. 728

Bell movement has straight hammer rod and solid hammer ball, giving more power and smoother action on battery or transformer.

Has large magnet, correctly designed phosphor-bronze springs, silver contacts and fine workmanship.

Buzzer case is 1 3/4 x 2 3/4 inches, fully insulated.

No.	Each	Description	Std. Pkg.	Approx. Wt. Lb.
710	\$.80	Chrome, Covered, Adjustable.....	20	10 1/4
Cadet Bell				
Dixie Bell				
720	\$.44	Aluminized, Covered, Non-Adjustable	50	25
721	.54	Chrome, Covered, Non-Adjustable...	20	10 1/4
Buzabel				
730	\$.70	Aluminized, Covered, Non-Adjustable Combination.....	50	26
731	.80	Chrome, Covered, Non-Adjustable, Combination.....	20	10 1/2
Nubel				
740	\$.38	Aluminized, Enclosed Binding Posts, Non-Adjustable, 2 1/2-Inch Gong....	100	48
Commercial Line Bell				
728	\$.34	Gray, 2 1/2-Inch Gong, Non-Adjustable	100	34
729	.32	Gray, Buzzer, Non-Adjustable.....	100	20
Cadet Buzzer				
715	\$.76	Chrome, Covered, Adjustable.....	20	4
Dixie Buzzer				
725	\$.36	Aluminized, Covered, Non-Adjustable	100	21
726	.42	Chrome, Covered, Non-Adjustable...	50	10 1/2

Edwards Large and Fancy Type Bells

Standard 8-10 Volts A.C., 6-8 Volts D.C.

Schedule E



Cow Gong

Type	No.	Each	Std. Pkg.	Approx. Wt. Lb.	Non-Adjustable	No.	Each	Std. Pkg.	Approx. Wt. Lb.
3-Inch	712	\$.92	10	6	743	\$.54	20	12	
4-Inch	714	1.22	10	8	744	.70	20	16	
Cow Gong	716	1.46	10	6	745	1.08	20	12	
Sleigh Gong	717	1.46	10	5 1/2	746	1.08	20	11	

Nos. 716 and 717 or Nos. 745 and 746 may be assorted to make up a standard package.

No. 16 Edwards Flush Buzzers

For D.C. Only
Schedule T



Flush type buzzer of sub-plate construction, fits any standard single gang switch box or cover. Has oval holes in sub-plate to permit alignment when switch box is set crooked in wall. Face plate perforated to emit sound.

Standard brush brass finish.

No extra charge for nickel, when specified.

Standard package made up of 10 assorted sizes.

Plate	Brass	Bakelite
Standard 8-10 V. A.C., 6-8 V. D.C....each	\$3.00	\$3.25
24 Volts, D.C.....each	3.50	3.75
For Spec. Voltage or Resistance up to 48 Volts (Specify When Ordering)....each	4.30	4.55
Approx. Wt. per Std. Pkg.....lb.	3/8	1/2

No. 13 Edwards Lungen Bells

Schedule E



Designed for use in offices, residences, hospitals, etc., where a device with neater appearance than the ordinary iron box type is desired. Covers fit tightly making them bug and dust proof. Phosphor bronze springs and double adjustment, pure hard-drawn silver contacts. Surface types available in five sizes varying in tone and volume to meet all conditions.

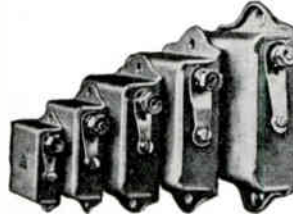
Rust-proof, polished chrome finish.
Standard package, 10 assorted sizes.

Size	1	1 3/4	2 1/2	3	*4	†
Std. 8-10 V. A.C., 6-8 V. D.C.....each	\$2.40	2.20	2.30	2.40	3.20	3.20
24 V., 60 cycles...each	\$2.70	2.50	2.60	2.70	.....	3.50
24 V., D. C.....each	\$3.00	2.80	2.90	3.00	3.80	3.80
For Special Voltage or Resistance up to 48 V.....each	\$3.70	3.50	3.60	3.70	4.50	4.50
Approx. Wt. Std. Pkg.....lb.	3/16	1/4	1/2	1 1/16	1	1 1/2

*For d.c. only. †Cow or sleigh bell.
Specify exact voltage when ordering.
No extra charge for nickel, when specified.

No. 15 Edwards Lungen Buzzers

Schedule E



Designed for use in offices, residences, hospitals, etc., where a device with neater appearance than the ordinary iron box type is desired. Covers fit tightly making them bug and dust proof.

Phosphor bronze springs and double adjustment, pure hard-drawn silver contacts. A-11 types available in five

sizes varying in tone and volume to meet all conditions.

Rust-proof, polished chrome finish.

Standard package, 10 assorted sizes.

Size No.	0	1	2	3	4
Std. 8-10 V. A.C., 6-8 V. D.C.....each	\$1.90	1.80	1.90	2.00	2.70
24 V., 60 Cycles...each	\$2.20	2.10	2.20	2.30	3.00
24 V., D. C.....each	\$2.50	2.40	2.50	2.60	3.30
For Spec. Voltage or resistance up to 48 Volts each	\$3.20	3.10	3.20	3.30	4.00
Size.....in.	1 5/8 x 1 1/8	2 1/4 x 1 1/8	2 3/4 x 1 3/4	3 x 2	3 1/2 x 2 1/4
Wt. Std. Pkg.....lb.	1/8	1/4	3/8	1/2	5/8

Specify exact voltage when ordering.
No extra charge for nickel, when specified.

No. 115 Edwards A.C. Lungen Buzzers

Schedule E



Volume of sound increases and pitch of tone lowers in each size from Size No. 1 and up. Sound volume may be adjusted over a 100% range.

Completely insulated with internal binding posts, bug and dust proof. Wire entrances provided for concealed or surface wiring. Polished chrome finish. Standard package, 10 assorted.

Size No.	1	2	3	4
Std., 8-12 V., A.C....each	\$1.70	\$1.80	\$1.90	\$2.60
24 Volts, A.C.....each	1.80	1.90	2.00	2.70
Size.....inches	2 1/8 x 1 1/8	2 3/8 x 1 3/4	3 x 2	3 1/2 x 2 1/4
Weight.....pounds	1 1/16	2 3/8	3 3/8	5 1/4

When ordering special voltage or resistance up to 48 volts, specify exact voltage desired; slight charge.

Edwards Flushcall Signaling Devices



Flushcall Device Buzacall Togelpush

Signaling and calling devices for residence, apartment, or any place old-fashioned bells, buzzers, and transformers were heretofore used. Each device fits standard gang boxes and takes standard switch or receptacle plates. Can be ganged together with 110-volt receptacles, etc., in standard box and finished with standard plate.

Each device is designed and built for a.c. operation only on 8 to 12 volts—with absolutely no adjustment before, during, or even after installation. The uncertainty as to proper resistance, voltage, etc., for various uses has been eliminated. Each device has a specific number for its use.

CONSTRUCTION DETAILS: Large, accessible binding posts, frame and louvre front plate combine to completely surround and protect gong and mechanism from wires in box. Inclined construction of frame and shallow design leaves ample room for lock nuts and wires. Elliptical hole permits a plumb adjustment. Mechanism completely insulated from frame. Rust-proof metals or finish throughout.

No.	Each	Schedule	Volts	Cycles	Std. Pkg.	Approx. Wt. Lb.
Ringcall						
660	\$.82	E	8-10	60	20	6 ¹⁵ / ₁₆
760	1.06	T	24	60	1	3 ⁵ / ₈
1060	4.80	T	115	60	1	3 ⁵ / ₈
Melocall						
663	\$.96	E	8-10	60	10	3 ³ / ₄
763	1.30	T	24	60	1	3 ⁵ / ₈
Buzacall						
661	\$.78	E	8-10	60	20	4 ⁹ / ₁₆
761	1.00	T	24	60	1	3 ⁵ / ₁₆
1061	4.66	T	115	60	1	3 ⁵ / ₁₆
Togelpush						
664	\$.20	E	*	..	20	1 ¹ / ₂
Tucall						
662	\$1.16	E	8-10	60	20	7 ⁷ / ₁₆
762	1.54	T	24	60	1	3 ⁵ / ₈
Powacall						

Underwriters' approved. Fits any standard box or outlet box with cover, 2³/₈ inches deep if placed in second gang of any combination, taking 110 volts from same line as receptacle, switch, etc., in first gang. Binding posts for easy installation.

666	\$.90	E	†110-130	60-140	20	23
667	1.50	E	††110-130	60-140	20	23

†Primary; 8-volts secondary. ††Primary, 14-volts secondary. For 220 volts 60 cycles primary, add to 110 volts 60 cycles, 15%.

Push, Bell, Buzzer Combination

For walk-up apartments, a two-gang box is used with the Tucall for front door and rear door or dumbwaiter signals, and the Togelpush for door opener operation, using a standard two-gang toggle plate. For narrow spaces, however, several different combinations for this type installation can be furnished to fit a single gang box. A special plate is included.

Standard package, 20.

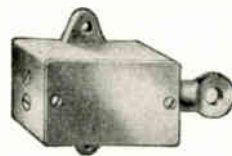
Approximate weight per standard package, 13 pounds.

No.	Each	Description	Use	A.C. Volts
770	\$1.38	Ring and Push.....	General	8-10
780	1.62	Ring and Push.....	Multiple	24
771	1.34	Buzz and Push.....	General	8-10
781	1.58	Buzz and Push.....	Multiple	24
772	1.68	Ring, Buzz and Push.	General	8-10
782	2.10	Ring, Buzz and Push.	Multiple	24

Complete engineering data on application.

No. 506 Edwards Bus Pull Cord Switches

Schedule T



Designed to operate bus signal bells or buzzers. Its small neat appearance and polished nickel finish will harmonize with other interior bus hardware.

Constructed of heavy gage material, and completely enclosed to prevent dust and dirt from collecting in the mechanism.

Easily wired, and once installed never needs adjustment.

Operates on battery voltage.

Approximate weight, 6 ounces.

No. 506.....each \$4.50

No. 504 Edwards Bus Door Step Light Switches

Schedule T



A ruggedly constructed door switch for operating step lights.

Built to stand up under the constant operation found in bus service.

Face plate is of heavy gage brass with polished nickel finish. Head of plunger is stainless steel.

Contacts are enclosed in bakelite base.

Operates on battery voltage.

Bumper plate and mounting screws supplied with each switch.

Approximate weight, 8 ounces.

No. 504.....each \$2.75

No. 504 Switch and Bumper Plate

Edwards Bus Signaling Equipment

6-12 Volts D.C.

Schedule T

No. 503 Bus Buzzer



No. 503

Precision made, adjustable, sturdy and dependable. Rustproof parts throughout, thoroughly insulated.

Most dependable for hard service transportation work.

No. 503.....each \$8.20



No. 500

No. 500 Combination Vibrating and Single Stroke Bells

Particularly adaptable for double deck buses where vibrating action is used for passenger signal and single stroke for conductors signal to driver.

Specify exact voltage desired.

No. 500, 4-In. Protected Gong.....each \$20.00

No. 750 Edwards Bronx Watchcase Buzzers

Schedule E

Phosphor bronze springs, pure hard-drawn silver contacts; nickel finish. Height, 5/8 inch; diameter, 1 1/4 inches.

Standard package, 10. Approximate weight, 1 1/2 pounds.

Standard 8-10 Volts, A.C., 6-8 Volts, D.C.....each \$1.80

24 Volts, 60 Cycles, D.C.....each 2.40

For Special Voltage or Resistance up to 48 Volts (Specify When Ordering).....each 3.10

No. 71 Edwards Skeleton Bells

For D.C. Only

Schedule E

A double magnet skeleton bell.
Standard package, 5. May be assorted.



Size In.	Std. 6-8 V. Each	For Special Voltage or Resistance up to 48 V. Specify When Ordering Each	Approx. Weight Pounds
3	\$5.55	\$6.85	1 3/4
4	6.60	7.90	2
6	8.85	10.65	3 3/16
8	14.35	16.65	5
10	21.30	23.60	10
12	27.50	29.80	12 3/8

No. 17 Edwards Economy Bells

Schedule E

A covered two-magnet bell for low cost burglar alarm and similar work.

Adjustable.
Bakelite insulation.
Black finish.

Standard package, 5. May be assorted.



Size.....inches	3	4	6	8	10
Std. 8-10 V. A.C., 6-8 V. D.C.....each	\$5.55	\$6.60	\$7.80	\$11.40	\$15.00
For Spec. Volt. or Resistance up to 48 V., Specify When Ordering.....each	6.85	7.90	9.60	13.20	17.30
Approx. Weight....pounds	1 3/16	1 7/16	2 1/8	4 5/8	6 11/16

No. 55 Edwards Bells

Schedule E

Designed for burglar alarm and other work of that character.

Has a single magnet bell.
Adjustable, non-weatherproof.
Finished in black with nickel gong.

Standard package, 5. May be assorted.



Size.....inches	4	6	8
Std. 8-10 V. A.C., 6-8 V. D.C.....each	\$3.15	\$3.97	\$6.67
For Special Voltage or Resistance up to 48 Volts, Specify When Ordering. each	4.45	5.77	8.47
Approximate Weight.....pounds	1 1/4	2 13/16	4 5/8

No. 156 Edwards Monitor Bells

Schedule T

An entirely self-contained bell that presents a neat appearance.

The hammer rod moves on a straight line and strikes the inside of the gong. This allows the bell to be made bug and dust proof.



The springs are phosphor bronze, the contacts pure hard-drawn silver. Has a 3-inch gong.
Cadmium finish with black base.
Standard package, 1 ; approximate weight, 1 3/8 pounds.
Standard 8-10 V. A.C., 6-8 V. D.C.....each \$1.80
For Special Voltage or Resistance up to 48 Volts (Specify When Ordering).....each 3.10

Edwards Vibrating or Single Stroke Adaptabels

For All A.C. and D.C. Voltages
Schedule T

This is a compact bell of the Underdome, Turtle or Monitor type.



As the electrical connections are made to the mounting plate only, the whole electrical installation can be made, tested and completed before painting and finishing.

The maintenance problem in hard service work, like traffic signals, railroads, etc. is simplified with a few spare Adaptabels. The Adaptabel is easily detached and a new one attached—instead of repairing on the job or installing a new bell.

The movement is completely enclosed in a cast aluminum housing. Protected against dirt, bugs, etc. When weatherproof is specified, it is protected with gaskets.

The a.c. vibrating mechanism is the polarized, no contact type. The d.c. vibrating mechanism is also of the straight line plunger type. Gongs are hot pressed steel, Parkerized to prevent rust.

All 6 to 12-inch Adaptabels mount directly on wall, 4-inch square box, standard switch box or any outlet box with single gang conduit or Wiremold type fitting.

All 3 or 4-inch Adaptabels have separable plate for mounting same as above and will also fit 3 1/4-inch octagon boxes.

In ordering, specify voltage desired.

Vibrating Type

No. 560 for A.C.—No. 561 for D.C.

Size Inches	96-30	110-130	220-240	Special	Add for Brass or Bell Metal Gongs
	Volts A.C. 6-9	Volts A.C. or D.C. Each	Volts A.C. or D.C. Each	Volts or Resistance up to 48 Volts D.C. Each	
3	\$11.00	\$14.00	.....	\$12.50	.....
4	12.00	15.00	.....	13.50	\$6.00
6	15.00	19.00	\$21.50	17.00	2.50
8	19.00	23.00	25.50	21.00	8.50
10	30.00	35.00	37.50	32.50	15.00
12	38.00	43.00	45.50	40.50	16.00

Single Stroke Type—For Commercial Use

No. 562 for A.C.—No. 563 for D.C.

Size Inches	10-48	110-130	220-240	Add for Brass or Bell Metal Gongs
	Volts A.C. or D.C. Each	Volts A.C. or D.C. Each	Volts A.C. or D.C. Each	
4	\$12.00	\$15.00	\$17.50	\$6.00
6	15.00	19.00	21.50	2.50
8	19.00	23.00	25.50	8.50
10	30.00	35.00	37.50	15.00
12	38.00	43.00	45.50	16.00

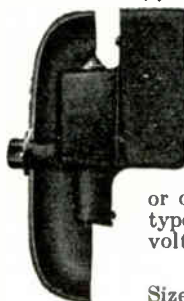
*Standard bells unless otherwise specified are for 12-18 volt operation. There is no extra charge for bells to operate on 8 volts or 30 volts—but the exact voltage must be specified.

Edwards Single Stroke Bells

For Approved Coded Fire Alarm Systems

No. 23 for D.C., No. 24 for A.C.

Schedule D



Solenoid construction approved by State, Insurance and Underwriters' Boards for closed circuit fire alarm systems. Mounts on wall or 4-inch square box, or standard switch box, or any outlet box with single gang switch cover, or on any single gang conduit or wire-mold type fitting. Prices for series operation on 110 volts from control panel.

Size.....in.	4	6	8	10	12
Each.....	\$18.00	24.00	27.00	32.00	36.00
Approx. Wt. ....lb.	1 3/4	4 1/8	5 1/8	8	9 1/8

Prices include 4-inch square box, but any desired box or fittings can be secured quickly, in which case specify without boxes and deduct 50 cents from price.

No. 551 Edwards Plunger Type Bells and Buzzers

For All A.C. Voltages

Schedule T



A no-contact, polarized bell. For traffic signals, mines, warehouses and all standard signaling purposes.

Binding posts and all parts are completely covered; as hammer rod operates in a straight line, the hole in the cover is but little larger than the rod itself, which makes the bell bug and dust proof. Rustproof gongs are standard equipment, and with the addition of a gasket the bell is weather-proof. Adaptor plate equipped.

There are no contacts to wear, stick or replace. No pivots, coil springs or points of friction.

Novel adjusting device automatically prevents stalling or chattering on the neutral point of the a.c. cycle. This is a common fault with a.c. bells of other design.

No adjustment. The only wearing part is where the hammer strikes the gong and the mechanism automatically adjusts itself to this.

Approved by the National Board of Fire Underwriters.

No. 510 Edwards Clapper Type Bells and Buzzers

For Transformer and 110-130 Volt A.C. Lighting Circuits

Schedule T



Designed to give lastingly efficient service on a.c. voltages where a bell with contacts is desired. Has superior type laminated magnets and specially constructed armature.

The vibrating unit is designed to allow full operation of the armature spring with a mechanical breaking of the circuit, independent of the spring action, which gives much more power, and longer life than the old pivoted armature and coil spring type mechanisms.

Has silver contacts with large area and excellent current carrying capacity. The binding posts and all parts are completely covered, making the bell practically bug and dust proof. Locking adjustment. Phosphor bronze springs.

No. 551 Standard Bell

Size Inches	*Std. 8-30 V. Non-Conduit Each		With Adaptor Plate for Conduit		Add for Bell Metal Gongs	Approx. Weight Pounds
	Std.	110-130 V. Each	Std.	220-240 V. Each		
3	\$11.00	\$14.00	\$16.50			1 3/16
4	12.00	15.00	17.50	\$.50		1 1/2
6	15.00	19.00	21.50	2.50		3 5/8
8	19.00	23.00	25.50	8.50		9 15/16
10	30.00	35.00	37.50	15.00		11 5/8
12	38.00	43.00	45.50	16.00		15 1/4
Buzzer	10.00	13.00	15.50			1 3/8



No. 551 Buzzer

No. 551FG Fully Guarded Bell

Has cast grid covering entire gong. Part grid furnished at same price.

6	\$23.00	\$27.00	\$29.50	\$2.50	5 3/8
8	28.00	30.00	34.50	8.50	13 1/8
10	40.00	45.00	47.50	15.00	17 7/8
12	50.00	55.00	57.50	16.00	23



No. 551FG Bell

No. 552 Double Gong Bell

4	\$14.00	\$17.00	\$19.50	\$1.20	4 3/8
6	23.00	27.00	29.50	5.00	6 1/4
8	27.50	31.50	34.00	17.00	15 1/4
10	35.00	40.00	42.50	30.00	22 3/4

*Standard bells unless otherwise specified are for 12-18 volt operation. There is no extra charge for bells to operate on 8 volts or 30 volts—but the exact voltage must be specified.

CONDUIT TYPE BELLS.—110-240-volt bells supplied as standard with plate which mounts on 4-inch square box—on standard switch box or any outlet box with single gang switch cover—on 3 3/4-inch octagon box—on any single gang conduit or wiremold type fitting. Low voltage bells can be supplied with plate at \$1.25 additional.

Cast wall boxes furnished if specified at \$2.50 additional to low voltage bells, \$1.25 additional to 110-240-volt bells.

When specified, bells will be furnished thoroughly weather-proofed without extra charge.

No. 551Y Yard Type

Furnished complete with weatherproof hood for \$25.00 additional to bell desired.

No. 510 Standard Bell

Size Inches	*Std. 8-12 V. Non-Conduit Each		Std. 110-130 V. A.C. Only With Adaptor Plate for Conduit Each		Add for Brass or Bell Metal Gongs	Approx. Weight Pounds
	Std.	110-130 V. Each	Std.	220-240 V. Each		
3	\$11.00	\$14.00	\$.50			2 5/16
4	12.00	15.00	.60			2 9/16
6	15.00	19.00	2.50			6 5/8
8	19.00	23.00	8.50			8 1/2
10	30.00	35.00	15.00			10 7/16
12	38.00	43.00	16.00			13 1/4
Buzzer	10.00	13.00				1 3/4



No. 510



No. 510FG

No. 510FG Fully Guarded Bell

Has cast grid covering entire gong. Part grid furnished at same price.

6	\$23.00	\$27.00	\$2.50	9 1/8
8	28.00	30.00	8.50	12
10	40.00	45.00	15.00	15 5/16
12	50.00	55.00	16.00	20 1/2

*Voltage, 8-12 is the widest range that can be standardized on. Specifying a definite voltage assures a more efficient bell. No extra charge for specified voltages up to 48 volts a.c. standard bell is for 60 cycles. No extra charge for 25-40 cycles.

CONDUIT TYPE BELLS.—110-130-volt bells supplied as standard with plate which mounts on 4-inch square box—on standard switch box or any outlet box with single gang switch cover—on 3 3/4-inch octagon box—on any single gang conduit or wiremold type fitting. Low voltage bells can be supplied with plate at \$1.25 additional.

Cast wall boxes furnished if specified at \$2.50 additional to low voltage bells, \$1.25 additional to 110-130-volt bells.

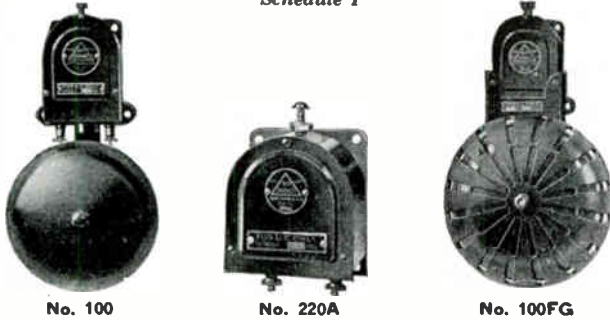
When specified, bells will be furnished thoroughly weather-proofed without extra charge.

No. 510Y Yard Type

Furnished complete with weatherproof hood for \$25.00 additional, to bell desired.

No. 100 Edwards Plunger Type Recti Bells and Buzzers

For All D.C. Voltages
Schedule T



Recommended for hard service. Plunger type movement of this bell gives a far more powerful signal with less strain on springs and armature. The springs are of phosphor-bronze. The magnets are oversize and correctly proportioned for unusual power. Contacts are of pure hard-drawn silver with large area. Locking adjustment is made without removing cover. Gongs are hot pressed steel, Parkerized to prevent rust. The hammer-rod operates through a hole in the case only slightly larger than the rod and the bell is completely bug and dust proof.

Standard Bell

No. 100, for Low Voltage—Exposed Terminals, Non-Conduit, Non-Weatherproof

No. 100U, for 110-240 Volts—With Approved Wire Leads and Bushings, Non-Conduit, Non-Weatherproof

Size Inches	No. 100 6-9 V. Each	No. 100U		For Special Volt or Resistance up to 48 V. Specify When Ordering Each	Approx. Weight Pounds
		110-130 V. Each	220-240 V. Each		
3	\$11.00	\$14.00		\$12.50	2 13/16
4	12.00	15.00	\$17.50	13.50	3
6	15.00	19.00	21.50	17.00	5 3/4
8	19.00	23.00	25.50	21.00	8 5/8
10	30.00	35.00	37.50	32.50	13 1/2
12	38.00	43.00	45.50	40.50	17 1/8
14	61.60	82.50	103.50	61.60	24
16	129.30	159.20	189.10	129.30	32
18	146.95	176.90	206.80	146.95	42
Buzzers					
	*\$10.00	*\$13.00		*\$11.50	2 1/8
	†11.90	†17.95	†\$24.10	†13.40	3 13/16

*No. 220A, small.
†No. 220B, large.

Fully Guarded Bell

No. 100-FG, for Low Voltage—Exposed Terminals, Non-Conduit, Non-Weatherproof

No. 100U-FG, for 110-240 Volts—With Approved Wire Leads and Bushings, Non-Conduit, Non-Weatherproof

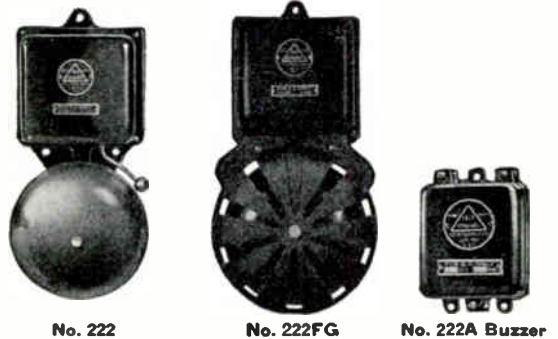
Has cast grid covering entire gong. Part grid furnished at same price.

Size Inches	No. 100 6-9 V. Each	No. 100U		For Special Volt or Resistance Up to 48 V. Specify When Ordering Each	Approx. Weight Pounds
		110-130 V. Each	220-240 V. Each		
4	\$16.30	\$18.80	\$21.30	\$17.60	3 1/4
6	23.00	27.00	29.50	25.00	7 7/8
8	28.00	30.00	34.50	30.00	11 13/16
10	40.00	45.00	47.50	42.50	19 3/4
12	50.00	55.00	57.50	52.50	24 7/8
14	86.30	107.20	128.20	86.30	36
16	164.30	194.20	224.10	164.30	48
18	191.95	221.90	251.80	191.95	62

No. 222 Edwards Clapper Type Bells and Buzzers

For Low D.C. Voltages Only

Schedule T



Designed to give lastingly efficient service on d.c. voltages where a bell with contacts is desired. Has superior type magnets and specially constructed armature. The vibrating unit is designed to allow full operation of the armature spring with a mechanical breaking of the circuit, independent of the spring action, which gives much more power, and longer life. Pure hard-drawn silver contacts with large area and excellent current carrying capacity. The binding posts and all parts are completely covered making the bell practically bug and dust proof. Locking adjustment.

No. 222 Standard Bell

Size Inches	Std. 6-9 V. Non-Conduit Each	For Special Voltage or Resistance up to 48 Volts Specify Each	Add for Brass or Bell Metal Gongs	Approx. Weight Pounds
4	12.00	13.50	\$.60	2 3/16
6	15.00	17.00	2.50	6 5/8
8	19.00	21.00	8.50	8 1/2
10	30.00	32.50	15.00	10 1/16
12	38.00	40.50	16.00	13 1/4

No. 222FG Fully Guarded Bell

Has cast grid covering entire gong. Part grid furnished at same price.

6	\$23.00	\$25.00	\$2.50	9 1/8
8	28.00	30.00	8.50	12
10	40.00	42.50	15.00	15 1/16
12	50.00	52.50	16.00	20 1/2

No. 222A Buzzer

For All D.C. Voltages

Approximate weight, 1 3/4 pounds.

Std. 6-9 Volts, Non-Conduit, Non-Weatherproof each \$10.00
110-130 Volts with Adaptor Plate for Conduit, Non-Weatherproof..... each 13.00
For Special Voltage or Resistance up to 48 V... each 11.50

CONDUIT TYPE BELL.—Furnished if specified with plate which mounts on 4-inch square box or any outlet box with single gang switch cover—on 3 1/4-inch octagon box—on any single gang conduit or wiremold type fitting for which add \$1.25 to price of bell desired. Price of No. 222 buzzer for 110-130 volts includes plate as described. On low voltage buzzer add \$1.25.

Cast wall boxes furnished if specified at \$2.50 additional.

When specified, bells will be furnished thoroughly weatherproofed without extra charge.

No. 222Y Yard Type

Furnished complete with weatherproof hood for \$25.00 additional to bell desired.

PR Eclipse Small Bells, Buzzers, and Bell-Buzzers



No. 500

Universal—6-8-Volt A.C. Transformers or 3-5-Volt D.C. Battery Circuits

Schedule E

Finished in satin cadmium.

Covered Pattern

With Fully Enclosed, Double Magnet Mechanisms, Binding Posts, and Gongs Non-Adjustable

No.	Per 100	Description	Std. Pkg.
500	\$55.00	2½-Inch Bell.....	100
501	50.00	Small Buzzer.....	100
507	55.00	Large Buzzer.....	100
502	87.50	Bell-Buzzer.....	50

Exposed Pattern

With Exposed Gongs, Fully Enclosed Double-Magnet Mechanisms and Binding Posts—Non-Adjustable



No. 509

No.	Per 100	Description	Std. Pkg.
509	\$52.50	2½-Inch Bell.....	100
503	67.50	3-Inch Bell.....	25
504	92.50	4-Inch Bell.....	25

With Exposed Gongs and Binding Posts, and Fully Enclosed, Single-Magnet Mechanisms—Non-Adjustable

No.	Per 100	Description	Std. Pkg.
300	\$42.50	2½-Inch Bell, Pearl Gray and Nickel Only	100
301	40.00	Small Buzzer, Pearl Gray and Nickel Only	100

PR XXX Bells and Buzzers

Exposed Pattern

With Exposed Gongs and Binding Posts, and Fully Enclosed, Double-Magnet Mechanisms—Adjustable For 6-Volt Transformer or 6-8-Volt Battery Circuits

Schedule E



With adjustable double-lock side contacts. Standard resistance, 2 ohms.

Finished in pearl gray with nickel gong.

No.	Per 100	Description	Std. Pkg.
211	\$104.00	2½-Inch Bell.....	50
212	118.00	3 -Inch Bell.....	10
213	153.00	4 -Inch Bell.....	5
210	102.00	Buzzer.....	24

PR Marlo Bells and Buzzers

Exposed Pattern

With Exposed Gongs, Outside and Inside Binding Posts, and Fully Enclosed, Double-Magnet Mechanisms Double Lock Adjustable

For 6-Volt Transformer or 6-8-Volt Battery Circuits

Schedule E



With pivoted armatures, back-tension-adjustment and insulated mechanisms.

Black finish with nickel gong.

Standard package may be assorted.

No.	Per 100	Description	Std. Pkg.
221	\$164.00	2½-Inch Bell.....	10
222	181.00	3-Inch Bell.....	10
223	219.00	4-Inch Bell.....	10
220	163.00	Buzzer.....	10

PR Marlo Transformer Adjustable Bells and Buzzers

For 6-Volt A.C. Transformer Circuits With Exposed Gongs, Outside and Inside Binding Posts, and Fully Enclosed, Double Magnet Mechanisms

Schedule E



With laminated magnet cores, carbon contacts, reed type armatures, and back tension adjustment. Mechanisms are insulated.

Base and cover are black; gong is nickel.

Furnished to operate on 12-18-volt transformer or 6 to 12-volt d.c. circuits at no added cost if so specified.

Standard package, 6.

No.	Description	Each
231	2½-Inch Bell.....	\$6.15
232	3-Inch Bell.....	6.30
233	4-Inch Bell.....	6.75
260	Buzzer.....	6.00

PR Midget Bells and Buzzers

Schedule E



No. 331



No. 334

Midget Bells and Buzzers are designed for installations when a pleasant sounding signal is more desired than volume of tone, and where attractive appearance to harmonize with the surroundings is required.

Polished-cadmium finish.

Standard package, 10 assorted.

For Battery and D.C.—Adjustable 6-8-Volts

No.	Description	Each
331	2½x1½-Inch Buzzer.....	\$1.80
332	2½x1¾-Inch Buzzer.....	1.90
333	3x2-Inch Buzzer.....	2.00
334	1¾-Inch Bell.....	2.20

No-Contact Type for Transformers Only Adjustable Tone—Fully Insulated—8-24 Volts

331-AC	2½x1½-Inch Buzzer.....	\$1.80
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No. 204 PR Bells

For 6-Volt Transformer or 6-8-Volt Battery Circuits

Monitor Pattern

With Fully Enclosed, Double Magnet Mechanisms

Schedule T



This bell is designed for special requirements where a self-contained round bell is wanted. Standard resistance is 2 ohms. Furnished to any special resistance up to 200 ohms, inclusive at a standard list addition.

Gong is supplied with a black Parkerized finish; base is black enameled. Base is provided with mounting holes.

Size of gong, 3 inches. Standard package, 1.

No. 204.....	each	\$1.80
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Faraday D.C. Signal Gongs

Listed as Standard by Underwriters' Laboratories
For Battery and D.C. Light and Power Circuits

Neck Pattern

Vibrating Clapper—Contact Type—Weatherproof—
Enclosed Gongs
Schedule T

These powerful vibrating signal gongs are for important battery and d.c. work; breakage of tension springs cannot disable gongs. Mechanisms are fully protected from dust, dampness and mechanical injury. With high-power, pivoted armatures and bakelite insulation throughout.

Model A—Non-Guarded Gongs

No. and Size Gong	6-9 Volt D.C. Battery Each	110-125 Volts D.C. Each	220-250 Volts D.C. Each	Cast Bell Metal Gongs Extra, Each
A-3	\$11.00			
A-4	12.00	\$15.00	\$17.50	
A-5	14.00	17.00	19.50	
A-6	15.00	19.00	21.50	\$2.50
A-7	17.00	21.00	23.50	
A-8	19.00	23.00	25.50	8.50
A-10	30.00	35.00	37.50	15.00
A-12	38.00	43.00	45.50	16.00



Model A

*Model B—Half Grid-Guarded Gongs

B-4	\$17.60	\$25.80	\$34.05	
B-5	22.95	35.10	47.20	
B-6	25.00	37.70	50.40	\$2.50
B-8	31.70	46.70	61.60	8.50
B-10	49.65	67.60	85.55	15.00
B-12	67.10	85.05	103.00	16.00



Model C

*Model C—Full Screen-Guarded Gongs

C-4	\$28.80	\$37.00	\$45.20	
C-5	36.75	48.85	60.95	
C-6	38.75	51.45	64.20	\$2.50
C-8	48.15	63.15	78.10	8.50
C-10	69.85	87.70	105.75	15.00
C-12	91.80	109.75	127.70	16.00

*Lower price grids furnished at the following additions to prices of Model A:

Size Gong...inches	4	6	8	10	12	14
Each.....	\$4.30	8.00	9.00	10.00	12.00	24.70

Model Y Yard Type—With Protective Hood



No. and Size Gong	6-9 Volt D.C. Battery Each	110-125 Volts D.C. Each	220-250 Volts D.C. Each	Cast Bell Metal Gongs, Extra Each
Y- 4	\$35.85	\$44.05	\$52.30	
Y- 5	40.80	52.90	65.00	
Y- 6	42.80	55.50	68.25	\$2.50
Y- 8	47.00	61.95	76.90	8.50
Y-10	61.95	79.90	97.85	15.00
Y-12	74.90	92.80	110.80	16.00

Adapter plates are supplied with 110-250-volt bells, permitting mounting of any bell on standard 4-inch square, standard switchbox or any outlet box with single-gang switchbox cover, on 3¼-inch octagon box, or on any single-gang Condulet or Wiremold-type fitting.

Battery type bells, 6-9 volts, furnished if so specified with adapter plates, \$1.25 extra.

For special voltage or resistance up to 48 volts, add the following prices:

Size Gong....inches	3	4	5	6	8	10	12
Each.....	\$1.50	1.50	2.00	2.00	2.00	2.50	2.50

Faraday A.C. Signal Gongs

Listed as Standard by Underwriters' Laboratories
For Transformer and A.C. Light and Power Circuits

Neck Pattern

Vibrating Clapper—Contact Type—Weatherproof—
Enclosed Gongs
Schedule T

Mechanisms are fully protected from dust, dampness and mechanical injury. With laminated cores, carbon contacts and bakelite insulation throughout.

Model AT—Non-Guarded Gongs



Model AT

No. and Size Gong	12-18 Volt A.C. Transformer Each	110-125 Volts A.C. Each	220-250 Volts A.C. Each	Cast Bell Metal Gongs Extra, Each
AT- 4	\$13.40	\$23.45	\$32.75	\$.60
AT- 5	22.10	36.00	49.20	2.50
AT- 6	24.10	38.85	52.75	2.50
AT- 8	29.55	46.75	63.05	8.50
AT-10	51.00	70.60	88.55	15.00
AT-12	58.15	77.80	95.75	16.00

*Model BT—Half Grid-Guarded Gongs

BT- 4	\$20.15	\$30.15	\$39.50	\$.60
BT- 5	29.30	43.20	56.40	2.50
BT- 6	31.40	46.05	59.90	2.50
BT- 8	39.25	56.45	72.80	8.50
BT-10	64.75	83.35	101.30	15.00
BT-12	75.30	95.00	112.95	16.00



Model CT

*Model CT—Full Screen-Guarded Gongs

CT- 4	\$31.35	\$41.40	\$50.70	\$.60
CT- 5	43.05	56.95	70.15	2.50
CT- 6	45.15	59.80	73.70	2.50
CT- 8	55.70	72.90	89.25	8.50
CT-10	83.95	103.50	121.50	15.00
CT-12	100.00	119.70	137.65	16.00

*Lower priced grids furnished at the following additions to prices of Model AT:

Size Gong.....inches	6	8	10	12
Each.....	\$8.00	9.00	10.00	12.00

Model YT Yard Type—With Protective Hood



No. and Size Gong	12-18 Volt A.C. Transformer Each	110-125 Volts A.C. Each	220-250 Volts A.C. Each	Cast Bell Metal Gongs Extra, Each
YT- 4	\$38.40	\$48.45	\$57.75	\$.60
YT- 5	47.10	61.00	74.20	2.50
YT- 6	49.20	63.85	77.75	2.50
YT- 8	54.55	71.75	88.05	8.50
YT-10	76.00	95.60	113.55	15.00
YT-12	83.15	102.80	120.75	16.00

Adapter plates are supplied with 110-250-volt bells, permitting mounting of any bell on standard 4-inch square, standard switchbox or any outlet box with single-gang switchbox cover, on 3¼-inch octagon box, or on any single-gang Condulet or Wiremold-type fitting.

Transformer type bells, 12-30 volts, furnished if so specified with adapter plates, \$1.25 extra.

Model ATN Faraday—Marlo A.C. Signal Gongs and Buzzer



Listed as Standard by Underwriters' Laboratories
For Transformer and A.C. Light and Power Circuits
Neck Pattern

Vibrating Clapper—Contact Type
Weatherproof—Non-Guarded—Gongs Enclosed
Schedule T

Black enameled case with black Parkerized gong and polished nickel binding posts.
When ordering, specify number and voltage.

No. and Size Gong	12-18-Volt A.C. Transformer Each	110-125 Volts A.C. Each	220-250 Volts A.C. Each	Brass or Bell Metal Gongs Extra, Each
ATN- 3	\$11.00	\$14.00	.....	\$.60
ATN- 4	12.00	15.00	.....	.60
ATN- 6	15.00	19.00	\$21.50	2.50
ATN- 8	19.00	23.00	25.50	8.50
ATN-10	30.00	35.00	37.50	15.00
ATN-12	38.00	43.00	45.50	16.00

For grids, add the following prices:
Size Gong.....inches 6 8 10 12
Each..... \$8.00 9.00 10.00 12.00

For yard-type protective hoods, add \$25.00 each.

Adapter plates are supplied with 110-250-volt bells, permitting mounting of any bell on standard 4-inch square, standard switchbox or any outlet box with single-gang switchbox cover, on 3/4-inch octagon box, or on any single-gang Condulet or Wiremold-type fitting.

Transformer type bells, 12-30 volts, furnished if so specified with adapter plates, \$1.25 extra.

Rectangular or cow-gongs can be furnished as follows: Add \$5.00 to price of ATN-6 for 3 1/8x5-inch gong and specify No. ATN-35; add \$10.00 to price of ATN-8 for 4 1/4x6-inch gong, and specify No. ATN-46.

Faraday Skeleton and Covered Bells

For Transformer or Battery Circuits
Vibrating Clapper—Non-Weatherproof
Schedule E

Model O Faraday Skeleton Bells

For Battery Circuits Only

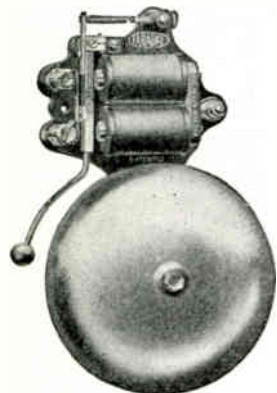
Designed to meet the requirements of good signal gongs with exposed mechanisms; high power patented pivoted armatures. Breakage of tension springs cannot disable gongs.

Contacts regularly Platinoid; platinum contacts, at an extra price. Bakelite insulation.

Wound to any special resistance at standard list additions.

For yard-type protected hoods, add \$25.00 each.

Standard package, 5 assorted.



No. and Size Gong	O-4	O-5	O-6	O-8	O-10
Each.....	\$7.10	9.35	10.55	16.00	24.85
Resistance Ohms.....	3	4	4	5	5

Model EA Faraday-Ekia Covered Bells

For Transformer or Battery Circuits

Reed-type armatures with back tension adjustments and adjustable side contacts. Heavy pressed steel frames and covers. Extra large double-magnets. Bakelite insulation.

Standard package, 5 assorted.

No. and Size Gong	EA-3	EA-4	EA-6	EA-8	EA-10
Model EA.....each	\$5.55	6.60	7.80	11.40	15.00

For yard-type protected hoods, add \$25.00 each.

Faraday A.C. Signal Gongs and Buzzer

Listed as Standard by Underwriters' Laboratories
For Transformer and A.C. Light and Power Circuits
Vibrating—Polarized Plunger Type—No Contact—Non-Sparking—Dustproof—Non-Guarded Gongs

Schedule T

High-grade, Polarized mechanisms which will stand up under the most severe a.c. service; bakelite insulation throughout.

Model ATL Neck Pattern—Weatherproof



No. and Size Gong	12-30-Volt A.C. Transformer Each	110-125 Volts A.C. Each	220-250 Volts A.C. Each	Cast Bell Metal Gongs Extra, Each	Grids Extra Each
ATL- 3	\$11.00	\$14.00	\$16.50	\$.60	\$5.50
ATL- 4	12.00	15.00	17.50	.60	6.00
ATL- 6	15.00	19.00	21.50	2.50	8.00
ATL- 8	19.00	23.00	25.50	8.50	9.00
ATL-10	30.00	35.00	37.50	16.00	10.00
ATI-12	38.00	43.00	45.50	16.00	12.00
ATLB Buzzer	10.00	13.00	15.50	.....	.....

For yard-type protective hoods, add \$25.00 each.

Model MTL Monitor Pattern—Weatherproof Coils



Non-Guarded



Yard Type with Protective Hood Weatherproof

Ideal for severe continuous a.c. service. Furnished in three types: non-guarded non-weatherproof, half or full-grid guarded weatherproof, and full screen guarded weatherproof. Mechanism protected from weather by strong cast iron casing. Having no contacts, transformer voltage of 30 volts or 110 or 220 is most satisfactory. Operates equally well on 25-60-cycle circuits. Specify voltage desired.

Though this model has weatherproof coils, for outdoor use it requires half or full grids to protect mechanism from rain and weather.

No. and Size Gong	12-30 V., A.C. Trans. Each	110-125 V., A.C. Each	220-250 V., A.C. Each	Cast Bell-Metal Gongs Extra Each	Half or Full-Grid Guarded Weatherproof Extra Each	Full Screen Guarded Weatherproof Extra Each
MTL- 4	\$12.00	\$15.00	\$17.50	\$.60	\$6.00	.....
MTL- 6	15.00	19.00	21.50	2.50	8.00	.....
MTL- 8	19.00	23.00	25.50	8.50	9.00	\$33.00
MTL-10	30.00	35.00	37.50	15.00	10.00	35.00
MTL-12	38.00	43.00	45.50	16.00	12.00	37.50

Adapter plates are supplied with 110-250-volt bells, permitting mounting of any bell on standard 4-inch square, standard switchbox or any outlet box with single-gang switchbox cover, on 3/4-inch octagon box, or on any single-gang Condulet or Wiremold-type fitting.

Transformer type bells, 12-30 volts, furnished if so specified with adapter plates, \$1.25 extra.

Faraday D.C. Signal and Fire Alarm Gongs

Listed as Standard by Underwriters' Laboratories

Monitor Pattern

Single Stroke—Solenoid Plunger Type—Non-Guarded

Model KS—With Weatherproof Coils

For Battery and 110-125 and 220-250 Volts D.C. Light and Power Circuits

Schedule T

For general use; not suitable for closed-circuit approved fire alarm systems.

Regularly provided, without extra charge, with separable conduit box backs, adaptable to both surface and flush-conduit installations. Boxes regularly have 1/2-inch knockouts, but will be furnished 3/4 inch when specially ordered.



No. and Size Gong	Battery Each	110-125 Volts D.C.		220-250 Volts D.C.	
		Each	Each	Each	Each
KS-4	\$12.00	\$15.00	\$17.50	\$6.00	\$2.50
KS-6	15.00	19.00	21.50	8.50	15.00
KS-8	19.00	23.00	25.50	15.00	16.00
KS-10	30.00	35.00	37.50		
KS-12	38.00	43.00	45.50		

No. 2250

For 110 Volts D.C.—Not More Than 14 Gongs in Series

Schedule D

When ordering, specify the number of gongs required on each circuit, and voltage.



Size Gong Inches	Each	Cast Bell Metal Gongs Extra, Each
4	\$14.40	\$6.00
6	19.20	2.50
8	21.60	8.50
10	25.60	15.00
12	28.80	16.00

For grids, add the following prices:

Size Gong.....inches	4	6	8	10	12
Each.....	\$6.00	8.00	9.00	10.00	12.00

Model KTS Faraday A.C. Signal Gongs

Monitor Pattern

Schedule T

Single-Stroke, Solenoid-Plunger Type, Non-Weatherproof, Non-Guarded Gongs

For Transformer and A.C. Light and Power Circuits

For general use and for paging systems of the code-calling type. Not suitable for closed-circuit-approved fire alarm systems. Regularly provided with separable conduit-box-backs, adaptable to both surface and flush conduit installations. Boxes regularly have 1/2-inch knockouts.



Standard package, 1.

No. and Size Gong	12-18 V. Trans. Each	110-125 V., A.C. Each	220-250 V., A.C. Each
KTS-4	\$12.00	\$15.00	\$17.50
KTS-6	15.00	19.00	21.50
KTS-8	19.00	23.00	25.50
KTS-10	30.00	35.00	37.50
KTS-12	38.00	43.00	45.50

Size.....inches 4 6 8 10 12
Add to Price for Full-Grids. ea. \$6.00 8.00 9.00 10.00 12.00

Faraday A.C. Single-Stroke Fire Alarm Gongs

Schedule D

Listed as standard by National Board of Fire Underwriters. Arranged to be wired in series. Not more than 10 gongs can be used on any 110-125-volt a.c. circuit.

Specify the number of gongs required on each circuit and the voltage of the circuit.

Regularly provided with separable conduit-box-backs, adaptable to both surface and flush conduit installations. Boxes regularly have 1/2-inch knockouts.

Standard package, 1.

Size.....inches 4 6 8 10 12
No. 5150 Monitor Pattern (Non-Guarded) or No. 5120 Neck Pattern. each \$14.40 19.00 21.60 25.60 28.80

Faraday A.C. Signal Gongs

For Transformer and A.C. Light and Power Circuits, 25-125 Cycles Vibrating—Solenoid Plunger Type—No Contact

Schedule T



No. 2000 Underdome (Monitor) Non-Weatherproof Non-Guarded



No. 2000-G Underdome (Monitor) with Weatherproof Apron and Full Grid Guard



No. 2000-N Neck Pattern Weatherproof Non-Guarded



No. 2000-W Underdome (Monitor) with Weatherproof Apron



No. 2000-NG Neck Pattern Weatherproof With Full Grid Guard

This gong has only one moving part: a Tobin Bronze capped, solenoid plunger without contacts of any sort.

Unless otherwise specified, No. 2000 will be furnished.

No. 2000 UNDERDOME (MONITOR). Non-guarded, non-weatherproof.

No. 2000-N NECK PATTERN. Non-guarded, weatherproof.

No. 2000-W UNDERDOME (MONITOR). With weatherproof apron.

No. 2000-G UNDERDOME (MONITOR). With weatherproof apron and full grid guard.

No. 2000-NG NECK PATTERN. With full grid guard, weatherproof.

No. 2000-Y UNDERDOME (MONITOR). Yard type, weatherproof. Particularly recommended for exposed outdoor use.

No. 2000-NY NECK PATTERN. Yard type, weatherproof.

Size Gong Inches	Nos. 2000 and 2000-N			No. 2000-W Extra Each	No. 2000-G Extra Each
	12-18 Volt A.C. Transformer Each	110-125 Volts A.C. Each	220-250 Volts A.C. Each		
3	*\$11.00	*\$14.00	*\$16.50	.....	.....
4	12.00	15.00	17.50	.....	.....
6	15.00	19.00	21.50	\$8.00	\$8.00
8	19.00	23.00	25.50	9.00	9.00
10	30.00	35.00	37.50	10.00	10.00
12	38.00	43.00	45.50	12.00	12.00

Size Gong Inches	No. 2000-NG Extra Each	No. 2000-Y Extra Each	No. 2000-NY Extra Each	Cast Bell-Metal Gongs Extra, Each
3	.....	.....	.....	\$6.00
4	.....	.....	.....	.60
6	\$8.00	.....	.....	2.50
8	9.00	\$25.00	\$25.00	8.50
10	10.00	25.00	25.00	15.00
12	12.00	25.00	25.00	16.00

*Made in No. 2000-N Neck Pattern only.

When specified, all gongs listed above can be furnished with 2-signal mechanisms having three terminals which, when connected to a 3-wire circuit, will give a powerful vibrating signal and a clearcut single stroke signal; add \$20.00.

Adapter plates are furnished regularly with 110-250-volt bells at no extra charge. They permit mounting any bell on standard 4-inch square box, standard switchbox, any outlet box with single-gang switchbox cover, on 3 1/4-inch octagon box or any single-gang Conduit or Wiremold fitting.

Transformer type bells, 12-18-volt, furnished if so specified with adapter plate, \$1.25 extra.

Schwarze Monocoil Bells and Buzzers

For 6-8 Volts A.C. and 2-5 Volts D.C.
Special Coil Silver Contacts
Schedule SB



No. 31



No. 32

These bells and buzzers are used as tell-tale signals and call signals in residences, apartments, garages, service stations, offices, or anywhere a small, low voltage signal is required.

Powered with the special Schwarze Single Coil Mechanism. These signals operate on two or more dry cells equally as well as on a bell ringing transformer. The contact springs are of high quality spring temper phosphor bronze. The mechanism is grounded to the frame. All electrical connections are soldered to insure trouble-free service.

The frames and covers are made of heavy gage pressed steel. In the No. 32 Bell, the gong hammer is concealed.

Finish: frame, gray; gong, nickel plate.

With Round Gongs

No.	Each	Description	Std. Pkg.	Approx. Ship. Wt. Lb. Std. Pkg.
31	\$.55	Buzzer	100	35
32	.625	2 1/2-Inch Bell	100	52
32	.675	3-Inch Bell	25	15
32	1.00	4-Inch Bell	10	15
With Distinctive Tone Gongs				
32	\$1.00	High Tea	10	10
32	1.00	Dome	10	10
32	1.35	Cow	10	10
32	1.35	3-Inch Brass	10	10

Schwarze Single Stroke Bells

For A.C. or D.C. Light and Power Circuits

No. 200, D.C.

No. 220, A.C.

Monitor Pattern—Surface Mounting Type

Solenoid Plunger Type—No Contact—Non-Weatherproof

Schedule R



These bells are made in one frame and mechanism size. They are for paging systems, announcement or door bell, servants' call, elevator signals, etc. Bells are widely used in residences, offices, hospitals, dormitories, hotels, theaters, etc. Specially adaptable for inbuilt use in elevator signal fixtures to operate in series or parallel with light signal. Rated for continuous duty.

Insulated from stamped frame. Terminals are concealed under gong. Made with cast bell metal gongs only.

Mounting holes are on 3 3/4-inch centers. Depth with 3-inch round gong, 2 inches; with 3-inch dome gong, 2 5/8 inches.

D.C.	No. A.C.	Size Gong Inches	6-8	110	220	Approx. Ship. Wt. Lb. Each
			Volts A.C. or D.C. Each	Volts A.C. or D.C. Each	Volts A.C. or D.C. Each	
	200	3	\$3.25	\$3.75	\$5.00	4
	220	3 Dome	4.50	5.00	6.25	4

Prices for special windings furnished on application.

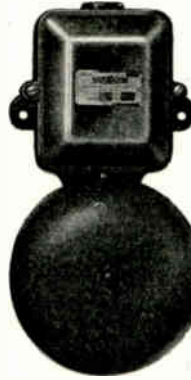
Schwarze A.C. Single Gong Bells

For Transformer and A.C. Light and Power Circuits
Vibrating—Polarized Plunger Type—No Contact
Schedule R

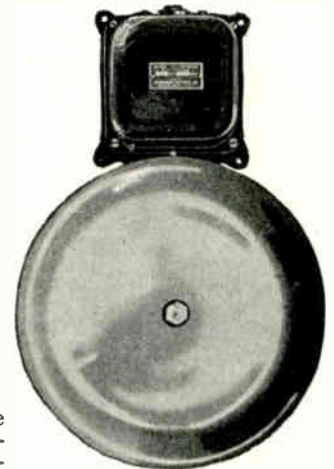
In ordering, specify number, rated voltage and frequency, ohms coil resistance, gong size, and gong and frame finish.

Hanger plates for mounting bells on 4-inch square or octagon outlet boxes can be furnished at no extra charge.

Series 700—Conduit Type



No. 75



Nos. 76 and 77

Series 700 Bells are made in three frame and mechanism sizes: small, intermediate, and large.

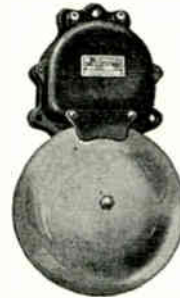
No.	Size Gong Inches	With Special Hard Steel Gongs			Cast Bell Metal Gongs Extra, Each
		A.C. Transformer Each	110 Volts A.C. Each	220 Volts A.C. Each	
75	*3	\$11.00	\$14.00	\$16.50	
	4	12.00	15.00	17.50	\$.60
76	6	15.00	19.00	21.50	2.50
	8	19.00	23.00	25.50	8.50
77	10	30.00	35.00	37.50	15.00
	12	38.00	43.00	45.50	16.00

*Prices for 3-inch bells include cast bell metal gongs as this size is not made with steel gongs.

No.	Gong Inches	Dome Inches	With Distinctive Tone Cast Bell Metal Gongs		
			A.C. Transformer Each	110 Volts A.C. Each	220 Volts A.C. Each
75	2 x3	3	\$13.50	\$16.50	\$19.00
76	3 1/2 x5	6	20.00	24.00	26.50
	4 1/4 x6	8	29.00	33.00	35.50

No. 181 Non-Conduit Type

No. 182, Conduit Type



No. 181



No. 182

Nos. 181 and 182 are equipped with plunger guards. No. 181 has exposed terminals, and No. 182 has concealed terminals. No. 181 can be furnished, on special order, with back-connector terminal studs for switchboard mounting.

No.	Size Gong Inches	With Special Hard Steel Gongs			Cast Bell Metal Gongs Extra, Each
		A.C. Transformer Each	110 Volts A.C. Each	220 Volts A.C. Each	
181	6	\$15.00	\$19.00	\$21.50	\$2.50
or	8	19.00	23.00	25.50	8.50
182	10	30.00	35.00	37.50	15.00
With Distinctive Tone Cast Bell Metal Gongs					
No.	Gong Inches	Dome Inches	A.C.	110 Volts	220 Volts
			Transformer Each	A.C. Each	A.C. Each
181 or	3 1/2 x5	6	\$20.00	\$24.00	\$26.50
182	4 1/4 x6	8	29.00	33.00	35.50

Schwarze D.C. Single Gong Bells

For Battery and D.C. Light and Power Circuits
Vibrating—Plunger Type—Special Tungsten Contacts

Schedule R

Frame finishes: regular duty, black enamel; fire duty, red enamel. Gong finishes: special hard steel—Parkerized rust-proof black, nickel plated, or Udylited (cadmium plated); cast bell metal—polished and lacquered.

In ordering, specify number, rated voltage and frequency, ohms coil resistance, gong size, and gong and frame finish.

Hanger plates, permitting mounting of bells on 4-inch square or 4-inch octagon outlet boxes, will be furnished at no extra charge when specified on order.



No. 163 is powered with a mechanism that operates on the solenoid principle, thereby eliminating the use of an armature and pivot pins.

Special contacts are used; protected by a condenser to suppress arcing.

Equipped with external adjustment screw which permits adjustment to produce a loud or subdued tone, as desired.

No. 163

Size Gong Inches	With Special Hard Steel Gongs				Cast Bell Metal Gongs Extra, Each	Approx. Ship. Wt. Lb. Each
	4-9 Volts D.C. Each	10-48 Volts D.C. Each	110 Volts D.C. Each	220 Volts D.C. Each		
*3	\$11.00	\$12.50	\$14.00	\$16.50	.....	4
4	12.00	13.50	15.00	17.50	\$.60	5

*Prices for 3-inch bells include cast bell metal gongs as this size is not made with steel gongs.

With Distinctive Tone Cast Bell Metal Gongs

Size Gong Inches	4-9 Volts D.C. Each	10-48 Volts D.C. Each	110 Volts D.C. Each	220 Volts D.C. Each	Approx. Ship. Wt. Lb. Each
2x3 Cow	\$13.50	\$15.00	\$16.50	\$19.00	5
3 Dome	13.50	15.00	16.50	19.00	5

No. 164, Conduit Type No. 166, Non-Conduit Type



No. 164



No. 166

No. 164 has concealed terminals, and No. 166 has exposed terminals as shown in the illustrations.

No. 166 can be furnished, on special order, with back-connected terminal studs for switchboard mounting.

With Special Hard Steel Gongs

No.	Size Gong Inches	4-9 Volts D.C. Each	10-48 Volts D.C. Each	110 Volts D.C. Each	220 Volts D.C. Each	Cast Bell Metal Gongs Extra, Each	Approx. Ship. Wt. Lb. Each
164 or 166	6	\$15.00	\$17.00	\$19.00	\$21.50	\$2.50	10
	8	19.00	21.00	23.00	25.50	8.50	12

With Distinctive Tone Cast Bell Metal Gongs

No.	Cow Gong Inches	Dome Inches	4-9 Volts D.C. Each	10-48 Volts D.C. Each	110 Volts D.C. Each	220 Volts D.C. Each	Approx. Ship. Wt. Lb. Each
164 or 166	3 1/8 x 5	6	\$20.00	\$22.00	\$24.00	\$26.50	13
	4 1/4 x 6	8	29.00	31.00	33.00	35.50	15

No. 165, Conduit Type No. 167, Non-Conduit Type



No. 165



No. 167

Nos. 165 and 167 are equipped with plunger guards.

No. 165 has concealed terminals, and No. 167 has exposed terminals as shown in the illustrations.

No. 167 can be furnished, on special order, with back-connected terminal studs for switchboard mounting.

With Special Hard Steel Gongs

No.	Size Gong Inches	4-9 Volts D.C. Each	10-48 Volts D.C. Each	110 Volts D.C. Each	220 Volts D.C. Each	Cast Bell Metal Gongs Extra, Each	Approx. Ship. Wt. Lb. Each
165 or 167	10	\$30.00	\$32.50	\$35.00	\$37.50	\$15.00	15
	12	38.00	40.50	43.00	45.50	16.00	17

Schwarze Standard Single Stroke Bells

For A.C. or D.C. Light and Power Circuits
Nos. 201 and 202, D.C. Nos. 221 and 222, A.C.

Conduit Type
Solenoid Plunger Type—No Contact
Schedule R



Nos. 201 and 221



Nos. 202 and 222

These bells are standard, all-purpose, heavy duty, single stroke bells which are made in two frame and mechanism sizes, and which are similar in general appearance, mounting features and operating principle.

They are for paging systems, fire and general emergency alarm code signals, elevator signals, dispatching, etc. Bells are widely used in schools, public buildings, institutions, hotels, industrial plants, mines, stores, fire and police stations, ships, etc.

Nos. 201 and 221 are made non-weatherproof only. Nos. 202 and 222 are made in weatherproof and non-weatherproof. These bells respond instantaneously, code sharply and distinctly, and can be operated on either parallel or series circuits.

Frames are designed for mounting with gongs up. The mechanisms are completely insulated from cast iron frames. Plunger tube openings on Nos. 202 and 222 are protected by splash and dustproof cap. They are tapped for 1/2-inch conduit with knockouts for back wire entrance and recesses for outlet box, conduit, or surface mounting.

In ordering, specify number, rated voltage and frequency, ohms coil resistance, gong size, and gong and frame finish.

With Special Hard Steel Gongs

No.	Size Gong Inches	Volts			Cast Bell Metal Gongs Extra, Each	Approx. Ship. Wt. Lb. Each
		6-48 A.C. or D.C. Each	110 A.C. or D.C. Each	220 A.C. or D.C. Each		
201	221	*3	\$11.00	\$14.00	\$16.50	4
		4	12.00	15.00	17.50	5
202	222	6	15.00	19.00	21.50	10
		8	19.00	23.00	25.50	12
		10	30.00	35.00	37.50	14
		12	38.00	43.00	45.50	16

*Prices for 3-inch bells include cast bell metal gongs as this size is not made with steel gongs.

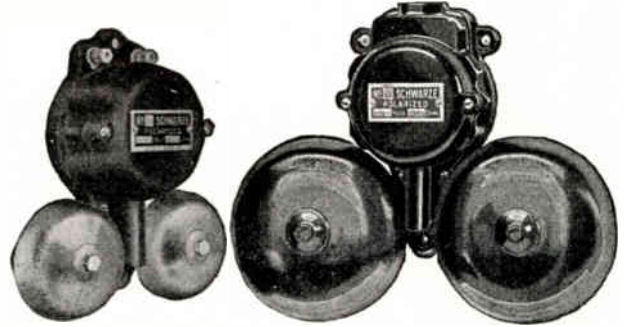
With Distinctive Tone Cast Bell Metal Gongs

No.	Size Gong Inches	Volts			Approx. Ship. Wt. Lb. Each	
		6-48 A.C. or D.C. Each	110 A.C. or D.C. Each	220 A.C. or D.C. Each		
201	221	3 Dome	\$13.50	\$16.50	\$19.00	5
		2x3 Cow	13.50	16.50	19.00	5
202	222	6 Dome	20.00	24.00	26.50	10
		3 1/2 x 5 Cow	20.00	24.00	26.50	10
		8 Dome	29.00	33.00	35.50	13
		4 1/4 x 6 Cow	29.00	33.00	35.50	13

Hanger plates, permitting mounting of bells on 4-inch square or 4-inch octagon outlet boxes, will be furnished at no extra charge when specified on order.

Schwarze A.C. Synchronous Double Gong Bells

For Transformer and Light and Power Circuits
Polarized Type—No Contact
Schedule R



No. 235, Non-Conduit

No. 236, Conduit

These bells are standard, all purpose, heavy duty, double gong bells which are made in two frame and mechanism sizes, and which are similar in general appearance, mounting features and operating principle. All mechanisms are completely insulated from the cast iron frames and covers; may be operated on parallel or series circuits. Where the distinctive tone characteristic of double gong bells is desired, Nos. 235, 236 and 237 are recommended.

They are for code paging and signaling, program clock, fire, burglar and general emergency alarms, start and dismissal, dispatching, etc. Bells are widely used in schools, institutions, public and office buildings, industrial plants, mines, stores, railroad and bus stations, etc.

Nos. 235 and 237 have exposed terminals, and are for surface mounting only. No. 236 has concealed terminals; frames are tapped for 1/2-inch conduit and are for surface or conduit mounting.

Frame finishes: regular duty, black enamel; fire duty, red enamel. Gong finishes: special hard steel—Parkerized rust-proof black, nickel plated, or Udylyted (cadmium-plated); cast bell metal—polished and lacquered.

In ordering, specify number, rated voltage, ohms coil resistance, gong size, and gong and frame finish.

With Distinctive Tone Cast Bell Metal Gongs

No.	Size Gong Inches	Volts			Approx. Ship. Wt. Lb. Each	
		A.C. Transformer Each	110 A.C. Each	220 A.C. Each		
235	2 1/2	2x3 Cow	\$17.00	\$20.00	\$22.50	5
		3	12.00	15.00	17.50	5
236	3	13.00	16.00	18.50	5	
237	3 1/2 x 5 Cow	33.00	37.00	39.50	21	

With Special Hard Steel Gongs

No.	Gong Inches	Volts			Cast Bell Metal Gongs Extra, Each	Approx. Ship. Wt. Lb. Each
		A.C. Transformer Each	110 A.C. Each	220 A.C. Each		
235 or 236	4	\$14.00	\$17.00	\$19.50	\$1.20	5
237	6	23.00	27.00	29.50	5.00	14
	8	27.50	31.50	34.00	17.00	16
	10	35.00	40.00	42.50	30.00	21

No. 161 Schwarze Universal Bells

For 6-8 Volts A.C. and 3-6 Volts D.C.
Vibrating—Special Coil Silver Contacts
Schedule SB



No. 161 is an ideal bell for interior light duty signaling service—program clocks; burglar alarms; production and process control; tank level, pressure and general tell-tale alarms; and start and dismissal signals. Widely used in garages, public institutions, residences, office buildings, etc.

Non-weatherproof; for surface mounting only. Mechanism is grounded to the frame. Frame and cover are of heavy gage, pressed steel. Equipped with substantial exposed terminals.

Size Gong	.....inches	4	6
No. 161	.....each	\$3.15	4.00
Approx. Ship. Wt.	.....lb.	2	4

Schwarze D.C. Double Gong Bells

For Battery and D.C. Light and Power Circuits
Special Tungsten Contacts
Schedule R



Nos. 251 and 252



Nos. 253 and 254

These bells are standard, heavy duty, double gong bells which are made in two frame and mechanism sizes, and which are similar in general appearance, mounting features and operating principle. Where the distinctive tone characteristic of double gong bells is desired, Nos. 251, 252, 253 and 254 are recommended.

They are for code paging and signaling, program clock, fire, burglar and general emergency alarm, start and dismissal, dispatching, etc. Bells are widely used in schools, institutions, public and office buildings, industrial plants, mines, stores, railroad and bus stations, etc.

No. 251 has a grounded mechanism. Nos. 252, 253 and 254 are completely insulated from frame. Because of their unique construction, which eliminates practically all contact arcing, they have the unusual advantage of being suitable for series or parallel operation.

Nos. 251 and 252 have cast frames and are tapped for 1/2-inch conduit with knockouts for rear wire entrance and recesses for outlet box mounting.

No. 253 has exposed terminals and is for surface mounting only. No. 254 has concealed terminals and is for surface or conduit mounting.

Frame finishes: regular duty, black enamel; fire duty, red enamel. Gong finishes: special hard steel—Parkerized rust-proof black, or Udylyted (cadmium plated); cast bell metal—polished and lacquered.

In ordering, specify number, rated voltage, ohms coil resistance, gong size, and gong and frame finish.

*No. 251—With Grounded Mechanism

With Distinctive Tone Cast Bell Metal Gongs

Size Gong Inches	4-9 Volts D.C. Each	10-18 Volts D.C. Each	14-32 Volts D.C. Each	Approx. Ship. Wt. Lb. Each
2x3 Cow	\$23.25	\$24.25	\$25.25	5
2 1/2	17.50	18.50	19.50	5
3	18.25	19.25	20.25	5

With Special Hard Steel Gongs

Size Gong Inches	4-9 Volts D.C. Each	10-18 Volts D.C. Each	14-32 Volts D.C. Each	Cast Bell Metal Gongs Extra, Each	Approx. Ship. Wt. Lb. Each
4	\$19.00	\$20.00	\$21.00	\$1.20	5

*For insulated mechanism, add \$3.25 and specify No. 252.

†No. 253—Non-Conduit

With Distinctive Tone Cast Bell Metal Gongs

Size Gong Inches	4-9 Volts D.C. Each	10-18 Volts D.C. Each	14-32 Volts D.C. Each	Approx. Ship. Wt. Lb. Each
3 1/8 x 5 Cow	\$40.00	\$41.75	\$43.50	25
4 1/4 x 6 Cow	54.50	56.25	58.00	27

With Special Hard Steel Gongs

Size Gong Inches	4-9 Volts D.C. Each	10-18 Volts D.C. Each	14-32 Volts D.C. Each	Cast Bell Metal Gongs Extra, Each	Approx. Ship. Wt. Lb. Each
6	\$30.00	\$31.75	\$33.50	\$5.00	18
8	34.50	36.25	38.00	17.00	20
10	43.00	44.75	46.50	30.00	25

†For conduit type, add \$2.50 and specify No. 254.

Nos. 251 and 252 may be mounted on 4-inch square or 4-inch octagon outlet boxes by the use of a hanger plate. Hanger plate will be furnished at no extra charge when specified on order.

Schwarze Adjustable Tone Buzzers

For A.C. or D.C. Light and Power Circuits
No. 284, A.C. No. 285, D.C.

Conduit Type
Schedule R



These standard, all purpose, heavy duty buzzers are made in two mechanisms: No. 284 for a.c. series or parallel operation, and No. 294 for d.c. parallel operation. Buzzers are for code paging and signaling, program clock, supervisory signals for alarm systems, inter-office communication, etc. Used in schools, public and private institutions, offices, office buildings, industrial plants, hotels, railroad and bus stations, etc.

Both buzzers are identical in appearance and mounting features. Mechanisms are completely insulated from the cast iron frames. They are of the solenoid type so that hinged armature and pivot pins are eliminated. Both buzzers are equipped with an external adjustment screw.

No. 284 is of the non-contact synchronous type, producing a tone having a frequency twice the alternating current frequency. The No. 294 is equipped with special contact points protected by a condenser to suppress arcing.

Both buzzers have concealed terminals and the cast iron frames are tapped for 1/2-inch conduit with knockout for rear wire entrance and recesses for outlet box, conduit or surface mounting. Available weatherproof or non-weatherproof.

Height, 4 5/8 inches; width, 4 1/16 inches; depth, 2 3/8 inches; mounting hole centers, 4 1/16 inches.

In ordering, specify number, rated voltage and frequency, ohms coil resistance, and finish.

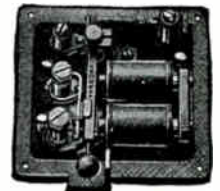
No.	A.C. Transformer Each	4-9 Volts D.C. Each	10-48 Volts D.C. Each	110 Volts A.C. or D.C. Each	220 Volts A.C. or D.C. Each	Approx. Ship. Wt. Lb. Each
284	\$10.00	.....	.....	\$13.00	\$15.50	5
294	.....	\$10.00	\$11.50	13.00	15.50	5

Faraday Signal Buzzers

N.E.C. Standard—Schedule T



Enclosed Type



Open Type

These buzzers never fail to give a signal.

Close fitting, rubber-gasketed covers protect mechanisms. All current-carrying parts mounted on bakelite pads, completely insulating same from frame. Contacts regularly Platinoid; pure platinum, extra. Standard package, 1.

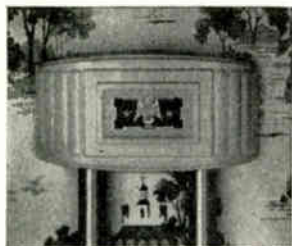
For Transformer and A.C. Light and Power Circuits

Cat. No.	Type	12-18 V. Trans. Each	110-125 V. A.C. Each	220-250 V. A.C. Each	Dimen. In.
93-T	Encl.	\$7.75	.....	.....	2 9/16 x 2 9/16 x 1 1/4
*99-TD	Encl.	3.50	\$4.00	.....	.....
99-T	Encl.	8.75	.....	.....	3 1/16 x 3 1/2 x 1 3/4
101-T	Encl.	10.00	20.00	\$29.30	3 1/2 x 4 1/16 x 2 1/16
94-T	Encl.	12.00	22.00	31.30	4 1/4 x 4 3/4 x 2 1/4
†94-TB	Encl.	14.00	24.00	33.30	.....
89-T	Open	7.25	.....	.....	2 x 2 x 1 1/8
91-T	Open	8.25	.....	.....	2 1/16 x 2 9/16 x 1 1/8

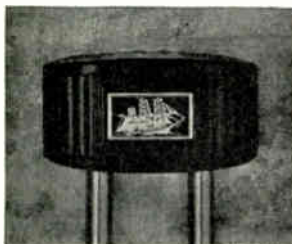
For Battery and D.C. Light and Power Circuits

Cat. No.	Type	Battery 6-9 V. Each	110-125 V. D.C. Each	220-250 V. D.C. Each	Dimen. In.
93	Encl.	\$7.75	.....	.....	2 9/16 x 2 9/16 x 1 1/4
99	Encl.	8.75	.....	.....	3 1/16 x 3 1/2 x 1 3/4
101	Encl.	10.00	\$20.00	\$29.30	3 1/2 x 4 1/16 x 2 1/16
94	Encl.	12.00	22.00	31.30	4 1/4 x 4 3/4 x 2 1/4
†94-B	Encl.	14.00	24.00	33.30	.....
89	Open	7.25	.....	.....	2 x 2 x 1 1/8
91	Open	8.25	.....	.....	2 1/16 x 2 9/16 x 1 1/8

*Diaphragm type, no contacts. †With 1 3/4-inch gong.

Federal Chimes

Case is dull light ivory finish with brass colonial eagle and star on blue ground center. Polished brass tubes.
No. 580, 2-Entrance Type. each \$8.00
No. 581, 1-Entrance Type. each 7.00

Cape Cod Chimes

Dull black with bright brass clipper ship insert in center panel. Polished brass tubes.

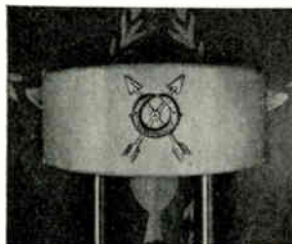
No. 522, 2-Entrance Type. each \$8.00
No. 523, 1-Entrance Type. each 7.00

Moderne Chimes

Case is dull white with blue glass mirror and chrome star. Tubes are polished chrome.

For black shield with chrome star and ground, specify No. 528 for 2-entrance, or No. 529 for 1-entrance type.

No. 582, 2-Entrance Type. each \$10.00
No. 583, 1-Entrance Type. each 9.00

Georgian Chimes

Sprayed wreath and arrow casting is mounted on dull light ivory case. Tubes are polished brass. Ideal complement for fine Sheraton furniture.

No. 536, 2-Entrance Type. each \$9.00
No. 537, 1-Entrance Type. each 8.00

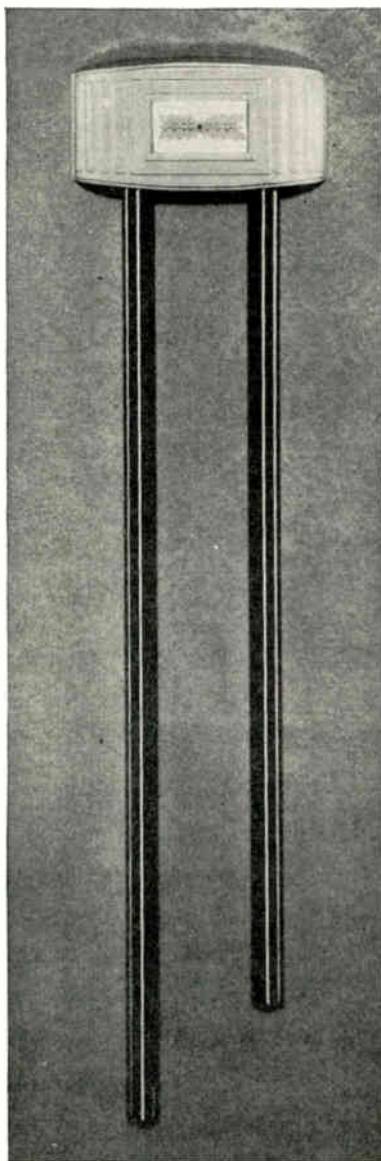
Edwards Tubular Chimes

The complete line of Edwards Styled Electric Door Chimes offers a selection for every architectural and decorative need. Each chime is available in two and one entrance types.

The two entrance model has two harmony sequence notes and an added single note. The single entrance model has the harmony notes only.

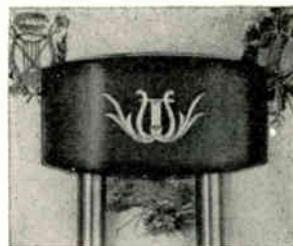
Height, 43 $\frac{3}{4}$ inches. Width, 8 $\frac{1}{4}$ inches. Depth, 2 $\frac{1}{8}$ inches.

Special transformer furnished with each model except when noted.

Regency Chimes

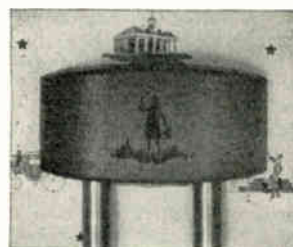
Case is dull light ivory and cast laurel ornament on a dull brass ground. Tubes are polished brass. Available also in dull black case.

No. 544, 2-Entrance Type. each \$9.00
No. 545, 1-Entrance Type. each 8.00

Duncan Phyfe Chimes

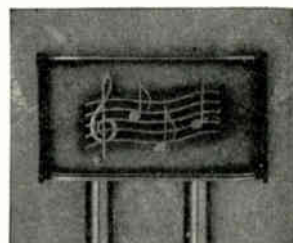
Case has red mahogany grained finish. Cast lyre ornament, sprayed brass. Polished brass tubes.

No. 524, 2-Entrance Type. each \$9.00
No. 525, 1-Entrance Type. each 8.00

Early American Chimes

Case has a pure maple finish with gay black silhouette of town crier. Polished brass tubes.

No. 520, 2-Entrance Type. each \$9.00
No. 521, 1-Entrance Type. each 8.00

Classic Chimes

Longer, larger diameter tubes give deeper, richer notes. Shield is a casting with relief motif in polished bronze against an old bronze ground.

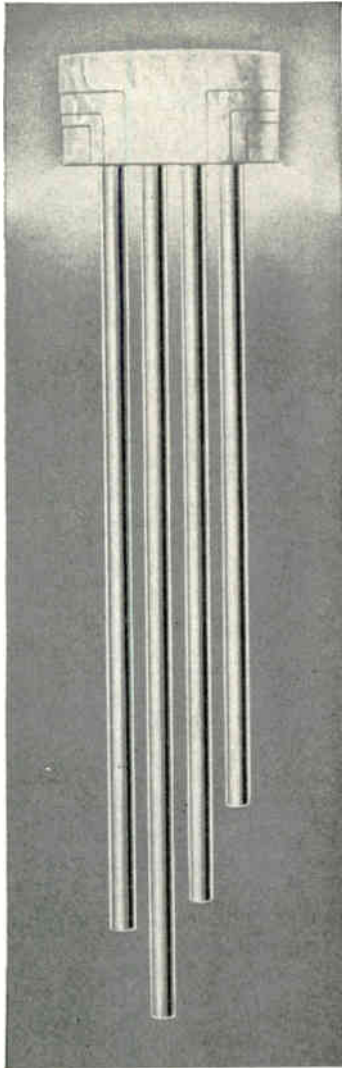
No. 570, 2-Entrance Type. each \$15.00
No. 572, 1-Entrance Type. each 14.00

Empire Chimes

Case has an old mahogany finish with black and gold fruit basket decoration. Polished brass tube.

No. 526, 2-Entrance Type. each \$9.00
No. 527, 1-Entrance Type. each 8.00

Edwards Cathedral Chimes



A beautifully designed plastic shield having a rich translucent marblelike finish in contrasting ivory shades. Night light is provided with both models. The translucent shield affords a soft tone to the light, making it ideal for night hallway illumination.

Light switch is provided on base. The four-tube Westminster model plays the popular eight-note melody of that name. Provision is made for a two-note harmony sequence and an added single note.

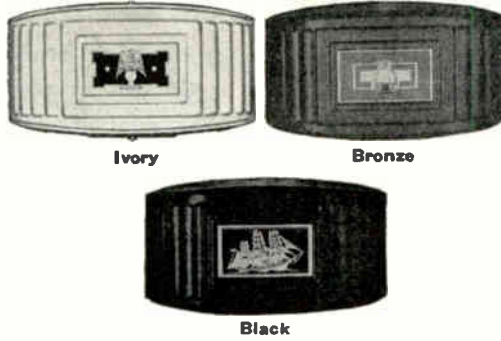
The three-tube Milan is similar to the Westminster except that a different seven-note melody is played instead of the eight-note melody.

Polished brass tubes are standard. Oversized tubes are used to provide deeper and more resonant notes.

No.	3-Tube Milan	4-Tube Westminster
No.	573	574
Each	\$25.00	29.50
Overall Height...in.	46 $\frac{1}{4}$	55 $\frac{1}{2}$
Overall Width...in.	10 $\frac{1}{2}$	10 $\frac{1}{2}$
Overall Depth...in.	4 $\frac{3}{8}$	4 $\frac{3}{8}$

Also available with opaque marble-like shield so light is thrown downward only, through tubes. Add letter B to number.

Edwards Junior Chimes



Junior chimes operate on any good doorbell transformer. No transformers furnished.

No.	Description	Each
590	Ivory, 2-Entrance Type...	\$3.95
591	Ivory, 1-Entrance Type...	2.95
558	Bronze, 2-Entrance Type..	3.95
559	Bronze, 1-Entrance Type..	2.95
555	Black, 2-Entrance Type..	3.95
556	Black, 1-Entrance Type..	2.95

Edwards Xylochimes

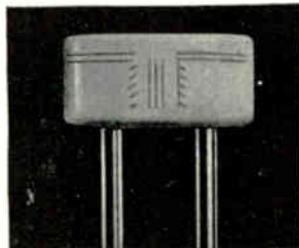


Utilizes bars instead of tubes with resonators to amplify sound. Louder than junior chimes but not as loud as tubular types.

Transformer furnished with chime.

No.	Description	Each
588	Ivory with Brushed Brass, 2-Entrance Type.....	\$7.00
589	Ivory with Brushed Brass, 1-Entrance Type.....	6.25

Edwards Leader, Tubular Chimes

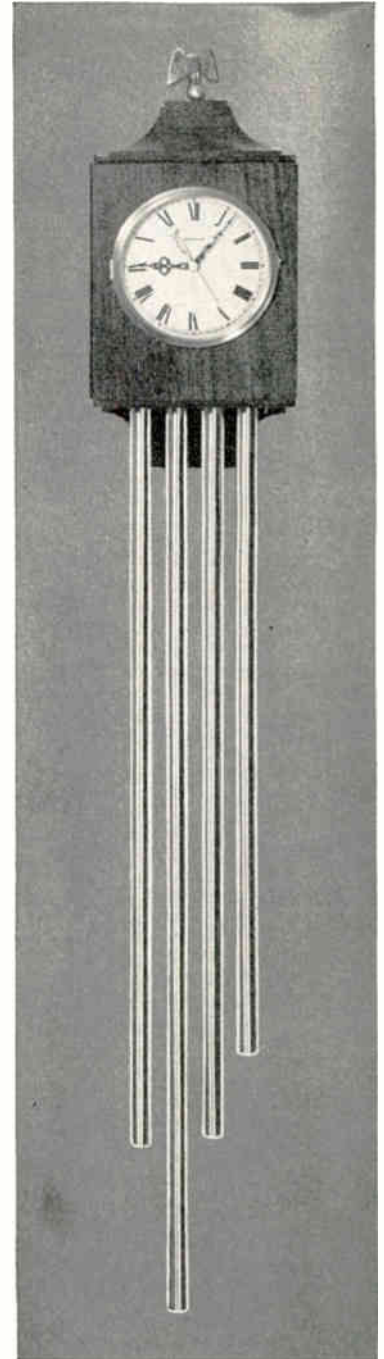


Ivory finished case with gold ornament. Neat, attractive for installations where economy dictates.

No.	Description	Each
568	2-Tube, 2-Entrance....	\$4.95
568-3	3-Tube, with Silent Ctr. Tube, 2-Entrance....	5.95

Price does not include transformer.

Edwards Clock-Chime



A beautiful wall clock that strikes the hours and half hours just like a grandfather's clock plus the singing eight-note Westminster chime melody for front door call and a two-note melody for the rear door call.

Overall height, 69 inches. Width, 10 $\frac{3}{4}$ inches. Depth, 6 inches. Top of chime should measure 76 inches from floor when installed.

The Edwards Clock-Chime has genuine, selected grain mahogany case; self starting electric movement; all on low voltage from the special transformer included in package; as easy to install as any ordinary door chime.

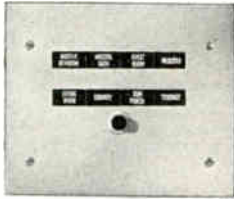
No. 564.....each \$59.50

Edwards Flush Annunciettes

8-12 Volts A.C.

Schedule T

No. 672 Manual Reset Type



Drops and reset mechanism are thoroughly reliable and will stand up indefinitely under most severe service. Mounts easily in wall box allowing plumb adjustment. Front connectors in full view allow complete installation, test, and operation before face plate is fastened.

Buzz audible signal with marked connectors for adding extension signals if desired. Envelope included with 100 separate name and number cards for drops allowing definite, correct indications in residence, bank, office or any installation.

No. 682 Electromanual Reset Type

Same as No. 672, but designed for remote resetting or for multiple operation where resetting an annunciette at one location must automatically reset an annunciette at another location. Connectors provided so the resetting of one or more annunciettes may be controlled from a remote point if desired. Resets all drops at once. Individual reset of drops not possible. While reset mechanism is actuated electrically, No. 682 has a mechanical reset on case.

No. of Drops	WITH WALL BOX	ARRANGEMENT	WALLCUT	DIMEN.	APPROX.
	No. 672 Each	Across Down	Height Inches	Width Inches	Weight Pounds
2	\$14.50	2 1	4 5/8	5 1/8	4
3	15.50	3 1	4 5/8	5 7/8	4
4	16.50	4 1	4 5/8	5 7/8	4
6	20.50	3 2	4 5/8	5 7/8	4 1/2
8	23.50	4 2	4 5/8	5 7/8	4 5/8
10	28.50	5 2	4 5/8	7 1/8	5 5/16
12	33.50	6 2	4 5/8	7 1/8	5 1/2
14	39.50	5 3	6 1/4	7 7/8	6 1/2
16	43.50	6 3	6 1/4	7 7/8	6 3/4
18	48.50	6 3	6 1/4	7 7/8	7 3/4
20	53.50	5 4	7 7/8	7 7/8	8
24	63.50	6 4	7 7/8	7 7/8	10 1/4
..	*4.00	..	..	..	..

*Larger sizes add per drop.

Depth, 3 inches for all sizes. Add 3/8 inch all around for overall size of trim.

Standard: White enamel finish and for 8-12 volts a.c. operation. Any solid spray finish, add 5%.

For up to 24 volts a.c. or d.c., no extra charge.

Special finishes, features, etc., installation data on application.

Wall Boxes Only for Nos. 672 and 682

For easy, most satisfactory installation wall boxes should be used.

- No. 671A, For 2-8 Drop Annunciettes.....each \$1.00
- No. 671B, For 10-12 Drop Annunciettes.....each 1.00
- No. 671C, For 14-18 Drop Annunciettes.....each 5.00
- No. 671X, For Larger Sizes (Specify Size).....each 5.00

When wall box has been shipped previously and annunciette without wall box is desired, specify No. 670 instead of No. 672 or No. 680 instead of No. 682.

Illuminated Annunciettes

All Edwards Flush Annunciettes in both manual and electromanual types are now available with indirect illumination. It permits the indicating drop to be readable at great distances in dark areas. Resetting the annunciette automatically extinguishes the illumination.

Prices on application.

Edwards Surface Annunciettes

8-12 Volts A.C.

Schedule T

No. 82 Manual Reset Type



Drops and reset mechanism are thoroughly reliable, and will stand up indefinitely under most severe service. Buzz audible signal with marked connectors for adding extension signals if desired.

Envelope included with 100 separate name and number cards for drops allowing definite, correct indications in residence, bank, office or any installation.

No. 482 Electromanual Reset Type

Same as No. 82, but designed for remote resetting or for multiple operation where resetting an annunciette at one location must automatically reset an annunciette at another location. Connectors provided so the resetting of one or more annunciettes may be controlled from a remote point if desired. Resets all drops at once. Individual reset of drops not possible. White reset mechanism is actuated electrically, manual, mechanical reset; a mechanical reset is supplied on case.

No. of Drops	No. 82		Over-all Ht. In.	Over-all Width In.	No. 482		Over-all Ht. In.	Over-all Width In.	Approx. Wt. Lb.
	Each	ARRANGEMENT Across Down			Each	ARRANGEMENT Across Down			
2	\$11.50	2 1	4 3/8	5 1/4	\$19.50	2 1	4 3/8	5 1/4	1 3/8
3	12.50	3 1	4 3/8	5 1/4	20.50	3 1	4 3/8	5 1/4	1 5/8
4	13.50	4 1	4 3/8	5 1/4	21.50	4 1	4 3/8	5 1/4	1 1 1/8
6	17.00	3 2	4 3/8	5 1/4	25.00	3 2	4 3/8	5 1/4	1 1 3/8
8	20.50	4 2	4 3/8	5 1/4	30.50	4 2	4 3/8	5 1/4	1 1 5/8
10	25.50	5 2	5 7/8	7 1/8	35.50	5 2	5 7/8	7 1/8	2 3/8
12	30.50	6 2	5 7/8	7 1/8	40.50	6 2	5 7/8	7 1/8	2 5/8
14	36.80	5 3	7 1/8	7 1/8	46.80	5 3	7 1/8	7 1/8	3 1/8
16	40.50	4 4	7 1/8	7 1/8	52.50	6 3	7 1/8	8 3/8	3 1 1/8
18	45.50	5 4	7 1/8	7 1/8	57.50	6 3	7 1/8	8 3/8	3 3/4
20	50.50	5 4	7 1/8	7 1/8	62.50	7 3	7 1/8	8 3/8	5 1/8
24	60.50	6 4	7 1/8	8 3/8	72.50	6 4	7 1/8	10 1/2	6
..	*4.00	..	..	..	*5.00	..	..	..	..

*Larger sizes, add per drop. Depth, 2 1/2 inches.

Standard: Black finish and for 8-12 volts a.c. operation.

Any solid spray finish add 5%.

For up to 24 volts a.c. or d.c., no extra charge.

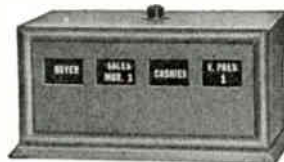
Special finishes, features, etc., complete installation data on application.

No. 673 Edwards Desk Manual Reset

Annunciettes

8-12 Volts A.C.

Schedule T



Smooth, positive reset push on top of case assures efficient operation. Base is felt covered to prevent scratching. Buzz audible signal is standard. For convenience in installation, a complete assortment of 100 name and numerical indications for drops is furnished with each annunciette.

Furnished complete with 6-foot cord and connector block.

No. of Drops	Each	ARRANGEMENT Across Down	Overall Height Inches	Overall Width Inches	Approx. Weight Pounds
2	\$30.00	2 1	2 1/2	4	2 1/4
3	35.20	3 1	2 1/2	4	2 1/4
4	41.60	4 1	2 1/2	5	2 3/4
5	48.00	5 1	2 1/2	7	3 1/2
6	54.40	6 1	2 1/2	7	3 3/4
8	67.20	8 1	2 1/2	9	5
10	80.00	5 2	3 3/8	7	5 1/2

Larger sizes, add \$6.40 per drop. Depth, 2 5/8 inches.

Standard: Mahogany, walnut, or oak finish and for 8-12 volts a.c. operation. Any solid spray finish, add 5%. For up to 24 volts a.c. or d.c., no extra charge. Special finishes, features, etc., complete installation data on application.

Edwards Dixie and San-Fer-Ann Surface Annunciators



6-8 V. A.C. or 12 V. A.C.
Schedule T

All metal case, finely finished. The No. 80 drop which is used, is locked in place and cannot be released by shaking or jarring. Indications are black on white background and cards are changeable. Buzz audible signal is standard.

Standard finish of No. 81, black; No. 91 white enamel or any solid spray finish.

Special finishes, features, etc., installation data on application.

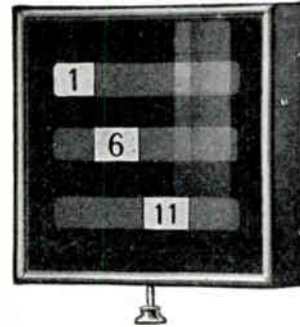
No. of Drops	No. 81 Dixie Each	No. 91 San-Fer-Ann Each	ARRANGEMENT		Height Inches	Width Inches	Approx. Weight Pounds
			Across	Down			
2	\$11.50	\$12.08	2	1	5	7 ¹ / ₁₆	2 ³ / ₁₆
3	12.50	13.13	3	1	5	7 ¹ / ₁₆	2 ¹ / ₁₆
4	13.50	14.18	4	1	5	7 ¹ / ₁₆	2 ¹ / ₂
6	17.00	17.85	3	2	7 ³ / ₁₆	7 ¹ / ₁₆	3 ¹ / ₂
8	20.50	21.53	4	2	7 ³ / ₁₆	7 ¹ / ₁₆	3 ⁵ / ₈
10	25.50	26.78	5	2	7 ¹ / ₁₆	8 ³ / ₈	6
12	30.50	32.03	6	2	7 ³ / ₁₆	9 ⁷ / ₈	6 ³ / ₄
14	36.80	38.64	5	3	9 ⁵ / ₈	8 ¹ / ₂	7 ³ / ₄
16	40.50	42.53	6	3	9 ⁵ / ₈	8 ¹ / ₂	8 ¹ / ₂
18	45.50	47.78	6	3	9 ⁵ / ₈	9 ⁷ / ₈	8 ³ / ₄
20	50.50	53.03	7	3	9 ⁵ / ₈	11 ¹ / ₄	9 ¹ / ₂
24	60.50	63.53	8	3	9 ⁵ / ₈	12 ⁵ / ₈	10 ¹ / ₂
	*4.00	*4.20					

*Larger sizes, add per drop. Depth, 3³/₈ inches.
Up to 24 volts, a.c. or d.c., no extra charge.
Ring audible signal supplied at \$3.00 additional.

No. 807 Edwards High Voltage Surface Manual Reset Annunciators

120 Volts A.C. or 120 Volts D.C.

Schedule T



Has a metal case with double Micarta backboard on which are mounted No. 80 drops. Care has been given to the insulation of all current-carrying parts, eliminating all materials affected by heat or moisture.

A 3-inch bell is included which may be installed adjacent to the annunciator or where desired. The annunciator is wired with marked connectors for this purpose.

Standard black finish. Any solid spray finish add 5%.

No. of Drops	Each	ARRANGEMENT		Ht. In.	Width In.	Depth In.	Approx. Wt. Lb.
		Across	Down				
4	\$62.00	4	1	5 ¹ / ₄	7 ⁵ / ₈	3 ¹ / ₄	7
6	74.00	3	2	7 ³ / ₄	6 ¹ / ₈	3 ¹ / ₄	8
8	91.00	4	2	7 ³ / ₄	7 ⁵ / ₈	3 ¹ / ₄	10
10	102.00	5	2	7 ³ / ₄	9 ¹ / ₄	3 ¹ / ₄	12
12	124.00	4	3	7 ³ / ₄	10 ⁵ / ₈	3 ¹ / ₄	14

Larger sizes, add \$12.00 per drop. For 220 volts, add \$2.00 per drop.

For flush type, add 20%.

No. 403 Edwards Electric Reset Surface Annunciators

16 Volts A.C. or 8 Volts D.C.
Schedule T



All metal case. No. 4 drop uses less current for indicating and resetting and gives a far better indication. The audible signal is a double adjustment buzzer. One reset button regularly furnished on case for every 20 drops. Connectors also provided for remote resetting as standard. All drops reset at once.

Standard finishes are black, mahogany, oak or walnut. Special finishes, features, etc., complete installation data on application.

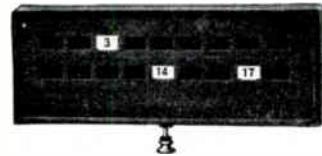
No. of Drops	Each	ARRANGEMENT		Height Inches	Width Inches	Approx. Wt. Lb.
		Across	Down			
4	\$26.00	2	2	6 ¹ / ₈	5 ¹ / ₈	3 ¹ / ₂
6	32.00	3	2	6 ¹ / ₈	6 ⁵ / ₈	4 ¹ / ₂
8	38.00	4	2	6 ¹ / ₈	8 ⁵ / ₈	5 ¹ / ₂
10	44.00	4	3	8 ¹ / ₈	8 ⁵ / ₈	6 ¹ / ₂
12	52.00	4	3	8 ¹ / ₈	8 ⁵ / ₈	6 ¹ / ₂
14	60.00	6	3	8 ¹ / ₈	8 ⁵ / ₈	7
16	68.00	6	3	8 ¹ / ₈	11 ¹ / ₈	8 ¹ / ₄
18	76.00	6	3	8 ¹ / ₈	8 ⁵ / ₈	9
20	84.00	5	4	10 ¹ / ₄	9 ⁵ / ₈	10
24	100.00	6	4	10 ¹ / ₄	11 ¹ / ₈	12

Larger sizes, add \$5.00 per drop. Depth, 3 inches.
For up to 24 volts a. c. or d. c., no extra charge.
Any solid spray finish, add 5%.

No. 813 Edwards Railway Annunciettes

8-12 Volts A.C. or 6-8 Volts D.C.

Schedule T



All metal case. For flush types, details on application.

Shallow design especially adaptable to sleepers, parlor and dining cars, and is standard equipment with many railroads.

No. 156 monitor bell is furnished as the audible signal for mounting anywhere desired. Also available with chime signal.

Mahogany, oak, walnut or any solid spray finish. Special finishes, features, etc. on application.

No. of Drops	Each	ARRANGEMENT		Height Inches	Width Inches	Approx. Wt. Lb.
		Across	Down			
10	\$43.00	5	2	3 ³ / ₄	7 ¹ / ₁₆	4
12	51.60	6	2	3 ³ / ₄	8 ⁵ / ₁₆	4 ¹ / ₄
14	60.18	7	2	3 ³ / ₄	9 ⁵ / ₁₆	5 ¹ / ₄
16	68.80	8	2	3 ³ / ₄	10 ⁹ / ₁₆	5 ¹ / ₂
18	77.40	9	2	3 ³ / ₄	11 ³ / ₁₆	6 ¹ / ₂
20	85.90	10	2	3 ³ / ₄	12 ³ / ₁₆	6 ³ / ₄
22	94.50	11	2	3 ³ / ₄	13 ³ / ₁₆	7 ¹ / ₂
24	102.84	12	2	3 ³ / ₄	14 ³ / ₁₆	7 ³ / ₄

Larger sizes, add \$5.00 per drop.

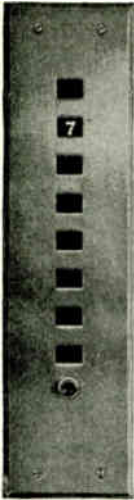
Depth, 2¹/₂ inches.

Edwards Surface Elevator Manual Reset Annunciates

8-12 Volts A.C. or 6-8 Volts D.C.

Schedule T

Buzz audible signal.
Smooth, sturdy, reliable reset.
Up and down type equipped with reset push for each column of indications.
Standard black finish.
Special finishes, features, etc. on application.
Order and price by number of drops not by number of floors.
Any solid spray finish, add 5%.
For up to 24 volts a.c. or d.c., no extra charge.



No. 130

No. of Drops	No. 130—Single Row				No. 130-D—Up and Down Type			
	ARRANGEMENT	Over-all Ht. In.	Over-all Width In.	Approx. Wt. Lb.	ARRANGEMENT	Over-all Ht. In.	Over-all Width In.	Approx. Wt. Lb.
3	\$18.50	1 3	7 ³ / ₈	2 ¹ / ₂	2	7 ³ / ₈	2 ¹ / ₂	2
4	19.50	1 4	7 ³ / ₈	2 ¹ / ₂	2 ¹ / ₈	7 ³ / ₈	2 ¹ / ₂	2 ¹ / ₈
5	21.40	1 5	9 ³ / ₄	2 ¹ / ₂	2 ³ / ₄	7 ³ / ₈	2 ¹ / ₂	2 ³ / ₄
6	23.25	1 6	9 ³ / ₄	2 ¹ / ₂	2 ³ / ₄	7 ³ / ₈	2 ¹ / ₂	2 ³ / ₄
7	25.25	1 7	12 ¹ / ₄	2 ¹ / ₂	3 ¹ / ₃	7 ³ / ₈	2 ¹ / ₂	3 ¹ / ₄
8	27.25	1 8	12 ¹ / ₄	2 ¹ / ₂	3 ¹ / ₄	7 ³ / ₈	2 ¹ / ₂	3 ³ / ₄
9	29.25	1 9	14 ³ / ₄	2 ¹ / ₂	3 ³ / ₄	7 ³ / ₈	2 ¹ / ₂	3 ³ / ₄
10	31.25	1 10	14 ³ / ₄	2 ¹ / ₂	4	10 ¹ / ₈	2 ¹ / ₂	4 ¹ / ₄
11	33.25	1 11	17 ¹ / ₄	2 ¹ / ₂	4 ¹ / ₄	10 ¹ / ₈	2 ¹ / ₂	4 ¹ / ₄
12	35.00	1 12	17 ¹ / ₄	2 ¹ / ₂	4 ¹ / ₂	10 ¹ / ₈	2 ¹ / ₂	4 ³ / ₄
14	40.00	2 7	12 ¹ / ₈	4	5 ³ / ₄	11 ¹ / ₂	4	5 ¹ / ₂
16	45.00	2 8	12 ¹ / ₈	4	6	12 ¹ / ₈	4	6 ¹ / ₄

Larger sizes, add \$4.00 per drop. Depth, 2¹/₂ inches.

Edwards Annunciator Drops

Schedule T

No. 8 Manual Reset Drop

An efficient drop used in all annunciates. Its compact design gives just as clear an indication but allows smaller, neater annunciators.
Positive Locking.



No. 8

No. 8.....each \$4.00

No. 80 Manual Reset Drop

The older design used in all hand reset annunciators except the new annunciates.



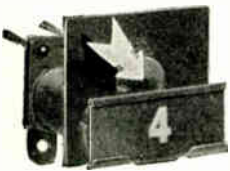
No. 80

Positive locking.

No. 80.....each \$4.00

No. 4 Electric Reset Drop

Used in all electric reset annunciators. Uses much less current for both indicating and resetting. The indication is a white arrow which points directly at the name card. When reset, the arrow drops out of sight behind the name card.



No. 4

The front is of plain glass and as the arrow is between the glass and a dull black background, it can be seen from any angle. Cannot shake or jar

out of adjustment. Locked in normal position and cannot indicate until current is passed through magnets.

No. 4.....each \$6.00

Edwards Lamp Annunciators

Standard for up to 32 Volts A.C. or D.C.

Schedule D

Unless locking or small toggle pushes are used, locking relays are necessary to keep the signals lighted reset by a push button, which is usually located on the annunciator. Relays can be furnished in the annunciator case, but this increases its size, and detracts from its appearance. It is better practice to have the relays in a separate cabinet, which can be placed out of view, under a desk, on the base-board, etc.

When ordering specify voltage, cycles, etc.; with or without relays, relays in annunciator or in separate cabinet; white, red or green bull's eyes, 7/8 or 1 3/4-inch numerals in opaque glass type; finish; buzzer in annunciator or relay cabinet; reset button or annunciator, relay cabinet, or remote point.

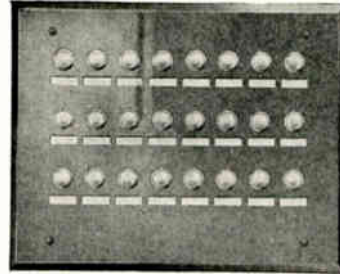
Complete installation data on application.

Bull's Eye Type

No. 421, For Surface Wall Mounting

No. 422, For Flush Wall Mounting

No. 423, For Desk



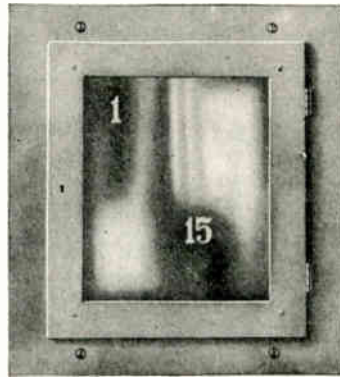
No. 422

Unless otherwise specified 3/8-inch milk-white bull's eyes are supplied with card racks underneath. All metal fronts finished as specified (except chromium, price on application). Flush type furnished complete with wall box. Larger sizes have hinged front for easy installation. Standard for operation on up to 32 volts a.c. or d.c. as specified. For 120-volt operation 1 1/8-inch bull's eyes are necessary. Buzzer audible signal.

Opaque Type

No. 424, For Surface Wall Mounting

No. 425, For Flush Wall Mounting



No. 425

furnished, price on application.

No. of Lamps	Bull's Eye Types		Opaque Types Nos. 424 and 425 Each
	No. 421 and 422 Each	Desk Type No. 423 Each	
2	.....	\$71.00	.....
4	\$71.00	90.00	\$70.00
6	91.00	110.00	80.00
9	110.00	140.00	92.00
12	141.00	170.00	104.00
16	181.00	200.00	118.00
20	221.00	240.00	129.60
25	235.00	310.00	147.30
30	275.00	.....	171.20
36	312.00	.....	200.00
42	341.00	.....	230.00
48	369.00	.....	260.00
56	407.00	.....	300.00
..	*5.00	.....	*5.00

*Larger sizes, add per lamp.

Relay prices on application.

For 120-volt operation, price on application.

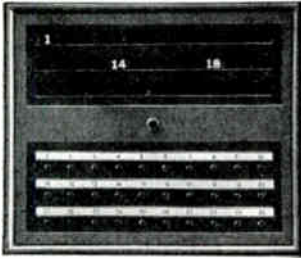
Larger sizes of No. 423 Desk, prices on application.

Sizes, wallcuts, weight furnished on application.

Edwards Return Call Annunciates Electromanual Reset

No. 412 Flush Type with Metal Face Plate and Wall Box
No. 410 Surface Type with Metal Case
8-12 Volts A.C. or 6-8 Volts D.C.

Schedule T



Ideal for return call systems where it is desirable to reset the annunciator from a remote point. Resets all drops at once. Individual reset of drops not possible. While reset mechanism is actuated electrically, manual, mechanical reset remains in case of emergency.

System is arranged so that the rooms may be called from the office or central station, or vice versa, and the call may be acknowledged.

Provides a most efficient system with much less possibility of trouble, fewer wires, only one transformer, and lower installation cost.

Standard black finish. Special finishes, features, etc., complete installation data upon application.

No. 410 Surface Type

No.	Each	No. of Drops	ARRANGEMENT Across Down	Ht. In.	Width In.	Depth In.	Approx. Wt. Lb.
410-25	\$211.00	25	9 3	11	12	3 1/2	12 1/2
410-30	237.00	30	8 4	13 3/8	11	3 1/2	14 1/4
410-36	273.00	36	9 4	13 3/8	12	3 1/2	16
410-42	321.00	42	11 4	13 3/8	14	3 1/2	16 3/4
410-49	366.00	49	10 5	15 3/4	13	3 1/2	20
410-56	406.00	56	12 5	15 3/4	15	3 1/2	22 1/2

No. 412 Flush Type

No.	Each	No. of Drops	ARRANGEMENT Across Down	Ht. In.	Width In.	Depth In.	Approx. Wt. Lb.
412-25	\$224.00	25	9 3	13 1/8	14 1/8	4 1/8	12 1/2
412-30	250.00	30	8 4	15 1/2	13 3/8	4 1/8	14 1/4
412-36	286.00	36	9 4	15 1/2	14 1/8	4 1/8	16
412-42	334.00	42	11 4	15 1/2	16 3/8	4 1/8	16 3/4
412-49	379.00	49	10 5	17 3/8	15 1/8	4 1/8	20
412-56	419.00	56	12 5	17 3/8	17 1/8	4 1/8	22 1/2

For overall of trim, add one inch to height and width.

Mahogany, walnut or oak finish, no extra charge.

For up to 24 volts a.c. or d.c. no extra charge.

Larger sizes, prices upon application.

Illuminated Annunciates

All Edwards Flush Annunciates in both manual and electromanual types are now available with indirect illumination. It permits the indicating drop to be readable at great distances in dark areas. Resetting the annunciator automatically extinguishes the illumination.

Prices on application.

Faraday Midget Annunciators

Manual or Electro-Manual Reset—Gravity Drop



Surface Type, Closed



Surface Type, Open

Faraday Midget Annunciators are made in two standard models: manual reset and electro-manual reset. The electro-manual reset type provides for remote reset, and automatic reset, with connections for use of an extension signal with either features. The above features are available by varying easily made connections when installing.

It is recommended that a 16-volt, 50-watt, output transformer be used on models having up to 15 drops. On models having 15 drops or more, we recommend the use of a 24-volt, 50-watt output transformer.

For easy accessibility, Faraday annunciators are equipped with a hinged cover—only one screw on the top of the case needs to be loosened to drop the cover and expose the entire mechanism.

Packed with each annunciator is a perforated card, numbered from one to fifty; a complete alphabet; and eighty other markings such as are commonly used for annunciator indications. There are also a number of blanks, to provide for special indicator markings. All markings imprinted on this set of indications are white symbols on a black background.

Standard finishes; black velvet enamel or white enamel. Special finishes, prices on application.

No. of Drops	Surface Type		Flush Type		ARRANGEMENT Across Down
	No. 373-S Manual Reset Each	No. 375 Electro-Manual Reset Each	No. 16-GS Manual Reset Each	No. 376 Electro-Manual Reset Each	
2	\$11.50	\$19.50	\$14.50	\$22.50	2 1
3	12.50	20.50	15.50	23.50	3 1
4	13.50	21.50	16.50	24.50	4 1
5	15.00	23.00	18.50	26.50	5 1
6	17.00	25.00	20.50	28.50	3 2
8	20.50	30.50	23.50	33.50	4 2
10	25.50	35.50	28.50	38.50	5 2
12	30.50	40.50	33.50	43.50	4 3
14	36.80	46.80	39.50	49.50	5 3
15	38.00	49.00	41.50	52.50	5 3
16	40.50	52.50	43.50	55.50	6 3
18	45.50	57.50	48.50	60.50	6 3
20	50.50	62.50	53.50	65.50	7 3
21	53.50	65.50	57.00	69.00	7 3
22	57.00	69.00	60.00	72.00	8 3
24	60.50	72.50	63.50	75.50	8 3
26	68.50	82.50	71.50	84.50	9 3
27	72.50	86.50	75.50	88.50	9 3



Faraday Annunciators

Hand Reset—Gravity Drop—All Metal Cases

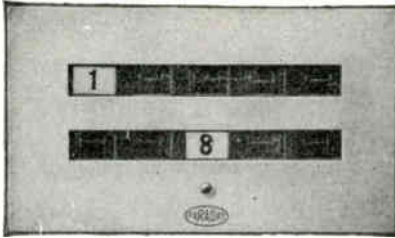
*For 8 to 12 Volts A.C. or 6 Volts D.C.

Schedule T

Hand-reset, gravity-drop annunciators are satisfactory for use where service conditions are not too severe. They will cover most residence, apartment house, office, and bank installations. These annunciators are made in two types: regular size and small size. Unless otherwise specified, the regular size will be furnished.

Each annunciator is furnished with 85 different markings—black on white background. For special markings, add 30 cents per drop.

Flush Type



No. 16-GM

Nos. 15-GM Regular and 15-GS Small Annunciators have a standard finish of black velvet enamel; Nos. 16-GM Regular and 16-GS Small Annunciators, white enamel finish.

Regularly furnished with backboxes.

No. of Drops	Nos. 15-GM Regular, and 15-GS Small Each	Nos. 16-GM Regular, and 16-GS Small Each	No. of Drops	Nos. 15-GM Regular, and 15-GS Small Each	Nos. 16-GM Regular, and 16-GS Small Each
2	\$15.23	\$14.50	12	\$35.18	\$33.50
3	16.28	15.50	14	41.48	39.50
4	17.33	16.50	16	45.68	43.50
6	21.53	20.50	18	50.93	48.50
8	24.68	23.50	20	56.18	53.50
10	29.93	28.50	24	66.68	63.50

For larger sizes, add \$1.20 per drop to prices for Nos. 15-GM and 15-GS; add \$4.00 for Nos. 16-GM and 16-GS.

For annunciator without backbox, deduct \$1.00 for 12 or less drops; \$5.00 for 14 and more drops.

Will be wound up to 24 volts a.c. or d.c. at no additional charge; for 25 to 50 volts a.c. or d.c. add 20 per cent to price of annunciator.

No. 20GS Desk Type—Small Size



Standard finishes: mahogany, golden oak, and walnut on steel.

Furnished complete with 6 feet of cord attached, and terminal block.

No. of Drops	Each	No. of Drops	Each
2	\$30.00	6	\$54.40
3	35.20	8	67.20
4	41.60	10	80.00
5	48.00	..	.....

For larger sizes, add \$6.40 per drop.

Intermediate sizes of all types of annunciators take the price of the next larger size.

*Wound up to 24 volts a.c. or d.c. at no extra charge.

Faraday Annunciators

Electric-Reset, Clover-Leaf-Target, Regular Size All-Metal Cases

Schedule T

Reset buttons are regularly furnished on the case. Connections only can be furnished without additional charge so that annunciator can be reset from a remote point.

Multiple operation on a.c. or d.c. of not exceeding 3 annunciators, at no extra cost.

STANDARD RESETTING.—Electric-reset types are regularly furnished with one reset button for each 10 drops.

EXTRA GROUP-RESET BUTTONS.—Electric-reset annunciators are regularly furnished with one reset button for each 10 indications.

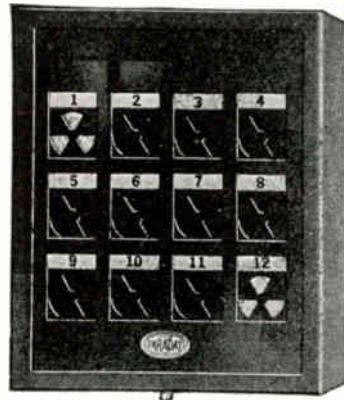
Each annunciator is furnished with 85 different markings—black characters on white background. Special markings, black on white background, add per drop, 30 cents.

Standard finishes: Surface type and desk type—black-velvet enamel, mahogany, walnut or golden oak; flush type—black-velvet enamel, white enamel, mahogany, walnut or golden oak.

Standard package, 1.

No. 25-RM—Surface Type

For Operation on 18 Volts A.C. or 8 Volts D.C. as Specified



Will be wound up to 24 volts a.c. or d.c. at no additional charge.

Black-velvet enamel finish will be shipped unless otherwise specified.

No. of Drops	Black-Velvet Enamel Each	White Enamel Each
4	\$26.00	\$27.30
6	32.00	33.60
8	38.00	39.90
10	44.00	46.20
12	52.00	54.60
14	60.00	63.00
16	68.00	71.40
18	76.00	79.80
20	84.00	88.20
24	100.00	105.00

Add to List Price for Each Additional Drop .50

5.25

No. 15-RM—Flush Type

Furnished complete with back box.

White enamel finish shipped unless otherwise specified.

No. of Drops	Black-Velvet Enamel Each	White Enamel Each	No. of Drops	Black-Velvet Enamel Each	White Enamel Each
4	\$60.00	\$60.00	14	\$94.00	\$94.00
6	66.00	66.00	16	102.00	102.00
8	72.00	72.00	18	110.00	110.00
10	78.00	78.00	20	118.00	118.00
12	86.00	86.00	24	134.00	134.00

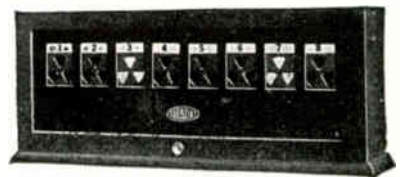
Add to Price for Each Additional Drop..... \$5.00

For Hinged Door Add to Price..... 10.00

For Omitting Back Box Up to 12 Drops, Deduct..... 1.00

For Omitting Back Box 14 Drops and Over, Deduct.. 5.00

No. 2-RM—Desk Type



Furnished with 6-foot cord attached and terminal block. Desk type inclined pattern furnished at same price.

No. of Drops	3	4	5	6	8	10
Each	\$44.00	52.00	60.00	68.00	84.00	100.00
Add to Price for Each Additional Drop	..... \$8.00					

Faraday Return-Call Annunciators

All Metal Cases

Schedule T

Return-Call Annunciators are regularly furnished to operate on: two common and one direct wire between each station and annunciator. One set of batteries or one transformer is required. This method of wiring is far more economical than the old style, out-of-date method of using one common and two direct. However, the old style of wiring can be furnished at the same price if specified when ordering. For wiring diagram, send for blueprint.

Standard finishes: black velvet enamel, mahogany, or golden oak on steel.

Hand Reset—Gravity Drop—Regular Size

*For 12 to 18 Volts A.C. or 6 Volts D.C.



No. 8-GM, Surface Type

No. of Drops	No. 8-GM Surface Type Each	No. 8-GMF Flush Type Each
16	\$140.00	\$153.00
20	152.00	165.00
25	176.00	189.00
30	197.00	210.00
40	252.00	265.00
50	307.00	320.00
60	351.00	364.00
70	397.00	410.00
80	448.00	461.00
90	495.00	508.00
100	540.00	553.00

For larger sizes, add \$7.00 per drop.

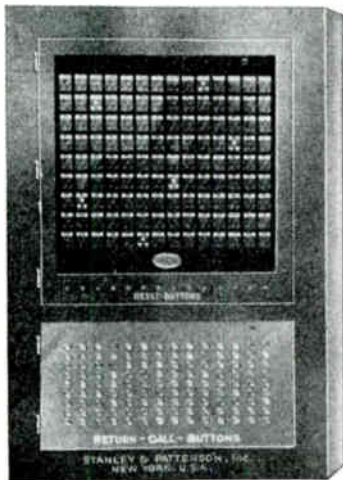
Electric Reset—Clover Leaf Target—Regular Size

*For 18 Volts A.C. or 8 Volts D.C.

One reset button is standard for each group of 10 drops or fraction thereof.

For one reset button for each selective group of not exceeding 10 drops (either at annunciator, distant point, or both), add \$4.00 for each button in excess of buttons ordinarily required.

For one reset button for each drop, add \$4.00 for each button in excess of the buttons ordinarily required.



No. 8-RM, Surface Type

No. of Drops	No. 8-RM Surface Type Each	No. 8-RMF Flush Type Each
25	\$221.00	\$234.00
30	247.00	260.00
36	283.50	296.00
42	331.50	344.50
49	377.00	390.00
56	416.00	429.00
64	468.00	481.00
72	512.00	525.00
81	567.00	580.00
90	619.00	632.00
100	676.00	689.00

For larger sizes, add \$7.00 per drop.

*Will be wound up to 24 volts a.c. or d.c. at no additional charge.

Kirkland Bulls-I-Units

No. 600 Indicating Lamps



Extensively used as an indicating lamp and in the building of lamp annunciators.

For single hole panel mounting. Can be mounted on a single convenience outlet plate.

Lamp is removed from the front.

Molded bakelite socket with screw terminals. Chromium plated, brass or bronze, 10% extra.

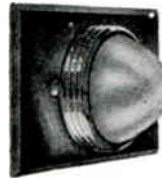
Uses either 3 or 6-watt, S6, 120-volt tungsten lamp, with resistor on 220-440 volts.

Furnished with either jewel or frosted lens, 1 1/8 inches in diameter.

No. 600 Unit.....each \$1.50

Add 10% for unit with numbered or lettered lens for annunciator uses, etc.

Switchplate Lamps



Perfect for over-door light or elevator signal, etc. For applications where a modest light output is adequate and low current consumption is a favorable factor.

Uses either 3 or 6-watt, S6, 120-volt tungsten lamp.

Lens: diameter, 2 inches; colors, red, green, and white.

Furnished in brass or chromium 10% extra.

No. 180SP, without Switchplate for Single Hole Panel Mounting, for Indicating Light Purposes.....each \$1.80

No. 170P, with Flat Lens for Numbering or Lettering, for Annunciator Purposes.....each 2.00

Neon Lamp Exit Lights



No. S14-S

Transforms the appearance of the lamp to that of a convex lens and reduces lamp theft and breakage to a minimum.

The optical illusion produced by streamlining the receptacle to the lamp enhances the beauty of the unit.

Used with neon glow lamps, rated at 3000 hours' life and consuming extremely low current from 1/2 to 3 watts, the combination makes an ideal exit light or indication lamp.

Standard finish is brass; chromium 10% extra.

Overall depth behind front of plate: No. S14, 2 1/2 inches; Nos. G10 and G11, 1 1/4 inches.

Also available without switchplate for single hole panel mounting; use letter P to denote panel unit and S for switchplate unit.

Furnished on round or multiple-gang plates. Use a mat to install on shallow box, wiremold No. 5751.

No. G10S, Uses Neon Lamps: 1 Watt on 120 V., 1 Watt on 220 V., 1/2 Watt on 120 V.....each \$1.65

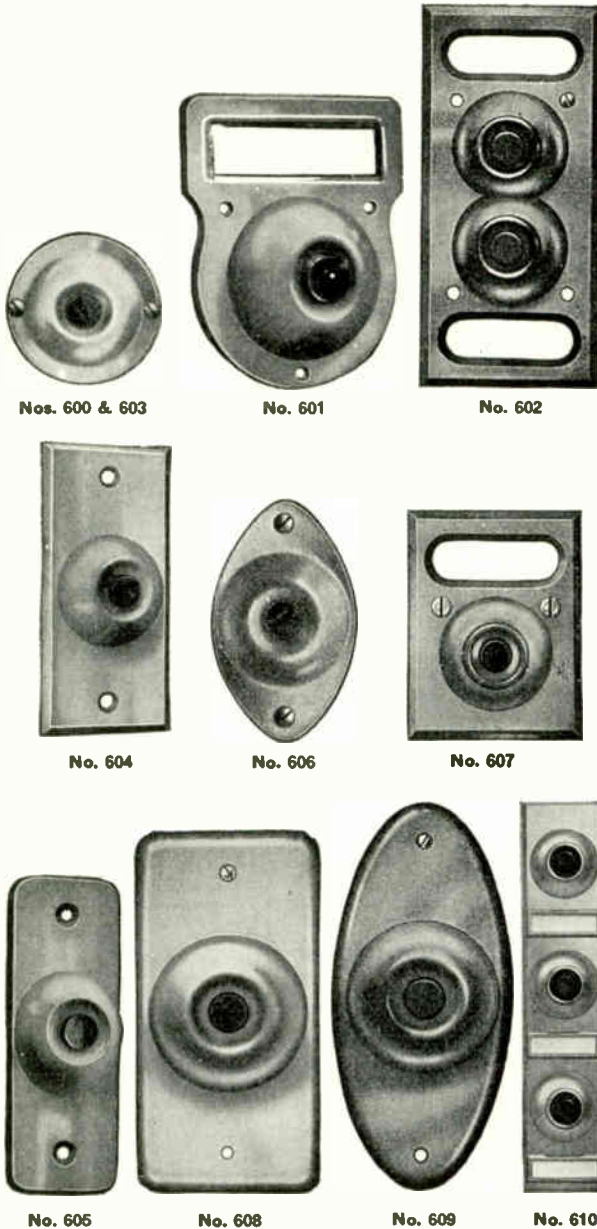
No. G11S, Uses 7/8-Watt Tungsten Lamp.....each 1.65

No. S14S, Uses 2 or 3-Watt Neon Lamp or 10-Watt Tungsten Lamp.....each 1.65

Ask for catalog for complete information on all Bulls-I Units.

Edwards Bronx Entrance Push Buttons

Schedule E



Nos. 600 & 603

No. 601

No. 602

No. 604

No. 606

No. 607

No. 605

No. 608

No. 609

No. 610

One piece type entrance push designed to cover all general needs. Sturdy mechanism is fully insulated. Binding posts and screws are large enough for No. 14 wire.

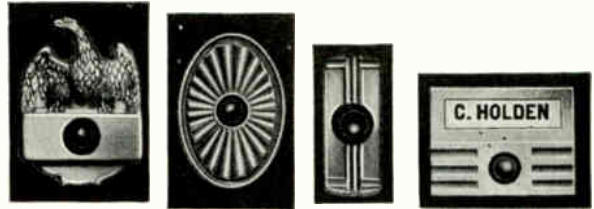
Packed with screws in individual boxes for convenient shelf use. Standard finish satin brass.

No.	Each	Size Inches	Std. Pkg.	Approx. Wt. Lb. Std. Pkg.
600	\$.12	2 5/16	100	8 1/16
601	.20	2 1/4 x 2 1/2	50	3 1/2
602	.36	2 x 4 3/16	20	2 1/2
603	.12	1 3/4	100	4 3/16
604	.28	1 9/16 x 3 15/16	20	2 3/16
605	.28	1 1/4 x 3 1/2	20	1 3/4
606	.20	1 9/16 x 2 3/8	20	1 1/16
607	.20	2 1/16 x 2 5/8	50	4 1/8
608	.32	2 1/16 x 4 1/2	20	2 7/8
609	.32	2 1/16 x 4 1/2	20	2 5/8
610	1.40	1 9/16 x 6 3/4	10	2

Oxidized copper supplied if specified, add 5 cents to price. Other commercial sprayed finishes add 10 cents to price.

Edward Screwless Pushes

Schedule Q



No. 630

No. 631

No. 632

No. 633

Hole can be drilled, wires connected and the flat sub-plate can be fastened to the surface with screws. Finished plate snaps firmly to subplate with no screws to mar the appearance.

Fully insulated; the contact is pure phosphor bronze, self cleaning in operation. The finished plate is heavy brass, not sprayed, but brushed and lacquered.

No. 630 makes an attractive feature for all colonial type doorways. No. 631 is decorative but conservative. It is ideal for plaster walls as well as front entrances. No. 632 is smart and conservative and particularly adapted to narrow spaces. No. 633 is for dentists offices, etc.

No.	630	631	632	633
Each	\$.30	.30	.22	.38
Style	Eagle	Oval	Rectangular	Indicator
Standard Package	10	10	20	10
Approx. Weight	10 oz.	10	14	10

Edwards All-Metal Desk Pushes

Schedule T



A fine desk push for neat appearance and convenient usage.

Heavy gaged steel body, Bonderized. A smaller and neater unit, taking less space on the desk. Molded centers. Completely insulated. One row of buttons for up to 12 buttons, double rows.

Names are almost flush with top plate thus preventing dust ridden crevices and allowing easily readable names.

One complete directory card which is easier to handle than individual cards.

Transparent celluloid keeps names clean.

Black finish is standard with brushed nickel top plate.

Specify exact number of buttons when ordering.

No.	Without Buzzer			With Buzzer			Approx. Wt. Lb.
	No. 192 without Cord Each	No. 192S with 6-Ft. Cord Only Each	No. 192T with 6-Ft. Cord and Connector Each	No. 194 without Cord Only Each	No. 194S with 6-Ft. Cord Only Each	No. 194T with 6-Ft. Cord and Connector Each	
1	\$3.90	\$4.44	\$5.54	5	\$9.90	\$10.44	\$11.54
2	5.30	6.62	7.78	5	11.00	12.32	13.48
3	6.60	8.36	9.60	6	13.00	14.76	16.00
4	8.10	10.30	11.64	6	15.80	18.00	19.34
5	9.40	12.04	13.54	7	19.00	21.64	23.14
6	10.80	13.88	15.64	8	22.50	25.58	27.34
8	13.70	17.66	19.66	9	30.00	33.96	35.96
10	16.40	21.24	23.44	11	37.50	42.34	44.54
12	20.25	25.97	28.27	13	45.00	50.70	53.00
Add per Button							
	2.00	2.48	3.00		2.00	2.50	3.00

No. 195 Edwards Wood Base and Metal Plate Desk Pushes

With Buzzer

Schedule T



Buzzer is included within the push itself. Plate is perforated to allow free emission of sound. This combination eliminates extra wiring for buzzer, and is ideal for offices, banks, etc., where user calls several persons but only one calls him. Black buttons. Furnished in black with black plate as standard and mahogany with brass plate. Walnut and nickel, oak and nickel when specified, no extra charge. Standard package, 1.

No. of Buttons	No. 195 Without Cord Each	No. 195B With 6-Ft. Cord Only Each	No. 195T With 6-Ft. Cord and Connector Each	Approx. Wt. Lb. Push Only
1	\$9.90	\$10.44	\$11.54	1/2
2	11.00	12.32	13.48	9/16
3	13.00	14.76	16.00	5/8
4	15.80	18.00	19.34	3/4
5	19.00	21.64	23.14	7/8
6	22.50	25.58	27.34	1
8	30.00	33.96	35.96	1 5/16
10	37.50	42.34	44.54	1 1/2
12	45.00	50.70	53.00	2 1/4
*	2.00	2.50	3.00	...

*Add per button.

No. 190 Edwards Wood Base and Metal Plate Desk Pushes

Schedule T



Ideal where it is desirable to match desk with wood base of push. Has phosphor bronze scraping contacts, and a sturdily constructed interior mechanism. All current-carrying parts are insulated. Push is weighted, and base is felt covered to prevent scratching. Black buttons. Furnished in oak and walnut

with nickel plates and mahogany with brass plate.

Standard package 1.

No. of Buttons	No. 190 Without Cord Each	No. 190S With 6-Ft. Cord Only Each	No. 190T With 6-Ft. Cord and Connector Each	Approx. Wt. Lb. Push Only
1	\$3.90	\$4.44	\$5.54	7/8
2	5.30	6.62	7.78	1 1/16
3	6.60	8.36	9.60	1 1/2
4	8.10	10.30	11.64	9/16
5	9.40	12.04	13.54	1 1/16
6	10.80	13.88	15.64	3/4
8	13.70	17.66	19.66	1
10	16.40	21.24	23.44	1 3/16
12	20.25	25.97	28.27	1 7/8
*	2.00	2.48	3.00	...

*Add per button.

No. 191 Edwards Directory Plates and Pushes

For flush mounting. Standard finish, nickel; brush brass, if specified, no extra charge.

Same prices as No. 190 without cord. Name cards in both the types are changeable.

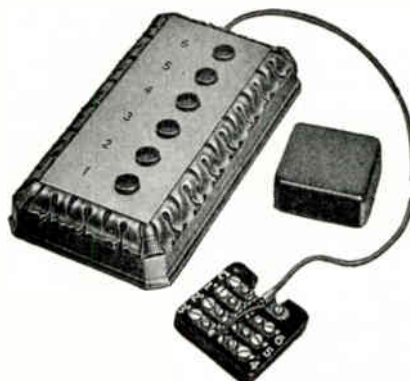
Specify finish when ordering.



Edwards Ornamental Cast Bronze Desk Pushes

Schedule T

No. 142



No. 142 with 6-Foot Cord and Connector

A fine quality cast bronze push for executive's desk in banks and offices. Finely tooled and finished in a conservative ornamental design that will harmonize with any decorative scheme. Supplied as standard with name openings as shown in No. 143. Names are interchangeable. If desired, name openings can be omitted and engravings substituted on face of bronze mat.

Standard finish, bank bronze; statuary bronze or polished bronze when specified. Standard package, one.

Connector Box for Easy Installation

No. 142 connected with 6-foot cord to a surface type connector box, which can be installed under desk, on baseboard, or wherever desired. Each connector plainly marked as to its corresponding push button. Allows quicker installation and a neater job.

No. of Buttons	No. 142 Without Cord Each	No. 142S With 6-Ft. Cord Only Each	No. 142T With 6-Ft. Cord and Connector Each	Wt. Lb. Push Only
1	\$9.90	\$10.44	\$11.80	7/8
2	10.70	12.00	13.26	1
3	13.00	14.70	15.94	1 1/8
4	15.80	17.60	18.94	1 3/16
5	19.00	21.70	23.20	1 5/8
6	22.50	25.50	27.26	1 11/16
8	30.00	33.96	35.96	1 3/4
10	37.50	42.34	44.54	2
12	45.00	50.70	53.00	2 3/16

Prices include engravings up to two letters or figures per button, additional characters, 25 cents.

No. 143—With Buzzer

Ideal for offices, banks, etc., where user calls several persons but only one calls him.

Same as No. 142 except that a buzzer is included within the push itself. This eliminates extra wiring for buzzer, and makes for simpler installation. Standard finishes and engravings same as for No. 142.

Standard package, one.



No. 143 with Buzzer

No. of Buttons	No. 143 Without Cord Each	No. 143S With 6-Ft. Cord Only Each	No. 143T With 6-Ft. Cord and Connector Each	Wt. Lb. Push Only
1	\$15.00	\$15.80	\$16.90	1 5/16
2	16.00	17.10	18.26	1 3/8
3	18.00	19.70	20.94	1 7/16
4	21.00	22.80	24.14	1 5/8
5	23.70	26.40	27.90	1 11/16
6	30.00	33.00	34.76	2
8	37.50	41.46	43.46	2 3/16
10	45.00	49.84	52.04	2 7/16

No. 146 Edwards Push Button Blocks

With Numbered Pushes

Schedule E

Of genuine molded bakelite, with a removable weighted base and a sponge rubber pad. Flush, numbered, midget pushes are supplied with block. Can be mounted on the side of a desk with the use of a concealed mounting hole provided for that purpose. Will not mar or deteriorate.

Standard finish, black, mahogany or walnut. Standard package, 5 assorted.



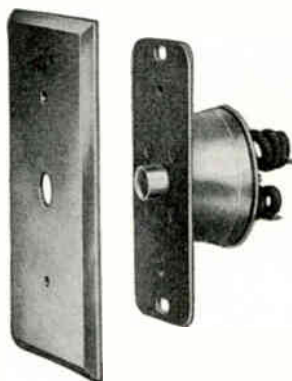
No. of Buttons	No. 146 Without Cord Each	No. 146S With 6-Ft. Cord Each	Wt. Block Only
1	\$2.15	\$2.69	4
2	2.50	3.82	4
3	3.20	4.96	5
4	3.65	5.85	4
5	4.50	7.14	5
6	5.25	8.33	5
	*.90	*1.38	

*Over 6 buttons, add per button. Over 6 buttons, wood construction.

Special engraving, initials or names, 25 cents per letter.

No. 1787 Edwards Flush Type Weatherproof Push Buttons

Schedule T



Complete contact mechanism enclosed in cast brass shell and covered with pig-skin diaphragm. Shell is tightly fastened to sub-plate with bronze plunger (on outside of diaphragm) protruding through sub-plate. Wire leads are brought out through tight bushings. Complete unit is weatherproof.

Fits any standard single gang switchbox or fitting. Furnished complete with face plate for low voltages only.

No. 1787RG rubber gasket for use between plate and wall supplied if specified.

Standard finish, polished bronze. Standard package, one. Approximate weight, 14 ounces.

No. 1787, With Face Plate.....each \$5.60
No. 1787RG, Rubber Gasket Only.....each .50

No. 197 Edwards Bakelite Directory Desk Pushes

Schedule E

Has phosphor bronze scraping contacts and is fully insulated.

Base is covered with soft sponge rubber.

Has changeable name cards.

Standard color, black. Mahogany, oak or walnut, no extra charge.

Standard package, 5 assorted.



No. of Buttons	No. 197 Without Cord Each	No. 197-T With 6-Ft. Cord and Connector Each	No. 197-S With 6-Ft. Cord Only Each	Wt., Oz.
1	\$2.50	\$4.40	\$3.30	4
2	3.00	5.26	4.10	4
3	3.50	6.44	5.20	5
4	4.30	7.44	6.10	6
5	5.80	10.00	8.50	7
6	7.30	12.06	10.30	8

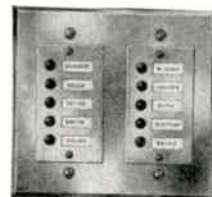
*Weight of push only.

No. 107 Edwards Push Button Panels

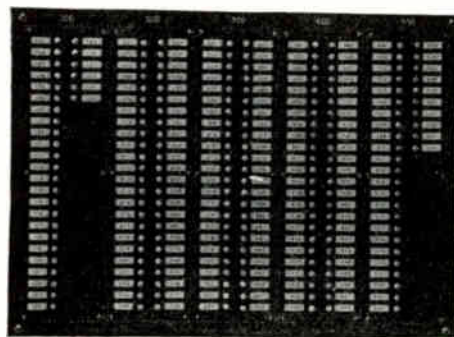
Schedule D



5-Button



10-Button



240-Button

Designed to meet the requirements of small schools, public buildings, offices, etc., where no All or Master push button is required. This panel is ideal where space is limited and where economy is a factor.

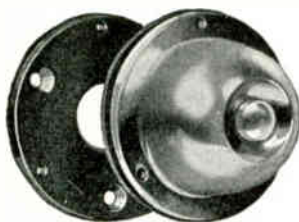
Sizes 6 to 10 buttons inclusive are mounted on a plate which fits a 2-gang switch box; 11 to 15 buttons are mounted on a plate to fit a 3-gang switch box. Price does not include back boxes. Larger sizes are provided with a steel wall box, for flush mounting. Terminal board is provided suitable for mounting in back box and is wired to panel on sizes 16 buttons and larger. A panel 17 1/2 x 13 inches accommodates 240 buttons.

Brushed brass finish is standard.
1 to 15 Buttons.....per button \$2.00
16 Buttons and up with Wall Box.....per button 3.00

Nickel, black or any solid spray finish furnished on request. For chrome finish, add 20%.

No. 1786 Edwards Surface Type Weatherproof Push Button

Schedule T



A neat solid brass push button absolutely dependable for use outside of buildings, residences, etc.

Also recommended for marine work, ice plants, chemical plants, and all places where dampness, exposure, or fumes will corrode and destroy the mechanism of an ordinary push button.

Standard package, one; approximate weight, 9 ounces.

No. 1786.....each \$3.50
No. 1786C, With Plate Threaded for 1/2-Inch Conduit.....each 5.50

Edwards Flush Push Buttons

For Low Voltage
Flat Pearl Center Types



For general utility purposes. Stamped shell, phosphor bronze springs, self-cleaning contacts, self-forming binding posts. Spring clips hold push firmly in mounting hole. Standard finish, nickel; brush brass when specified.

Schedule E

No.	Each	Description	Std. Pkg.	Approx. Wt. Oz.
620	\$.30	Insulated, Fits $\frac{5}{8}$ -Inch Hole.....	50	14
59	.60	Insulated, Fits $\frac{3}{4}$ -Inch Hole.....	20	9
63	.67	Grounded, Fits $\frac{1}{2}$ -Inch Hole.....	50	9

For black center add 12 cents to price. Std. pkg. 20.

Nos. 625 and 626 Raised Center Types



This push has a raised white glass center but is otherwise exactly the same as 620. Can also be furnished with black, red, blue, yellow and other color centers at no extra charge. White center is standard and furnished unless otherwise specified. Standard finish, nickel; brush brass when specified. Standard package may be made of assorted colors.

Schedule E

No.	Each	Description	Std. Pkg.	Approx. Wt. Oz.
*625	\$.44	Insulated, Fits $\frac{5}{8}$ -Inch Hole.....	20	7

Schedule T

626	.60	Indicator, Fits $\frac{5}{8}$ -Inch Hole.....	1	1
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*For luminous center add 50 cents to price.

Protruding Center Type



With solid turned brass shell. Phosphor-bronze springs, self-cleaning contacts.

No. 621 has spring clips to hold push firmly in $\frac{5}{8}$ -inch mounting hole. No. 622 has escutcheon for wood screw mounting in $\frac{1}{2}$ -inch hole. No. 116 is for forced fit in $\frac{1}{2}$ -inch hole.

Standard finish, nickel; brush brass when specified.

Schedule E

No.	Each	Description	Std. Pkg.	Approx. Wt. Oz.
621	\$.65	Insulated, Fits $\frac{5}{8}$ -Inch Hole.....	10	7
622	.90	Insulated, Fits $\frac{1}{2}$ -Inch Hole.....	10	7
623	.80	With Lock Nut, $\frac{5}{8}$ -Inch Hole.....	10	7

Schedule T

116	1.30	Insulated, Forced Fit, $\frac{1}{2}$ -In. Hole...	1	1
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No. 84 Edwards High Voltage Push Buttons

125-25-Volt
Schedule T



Recommended for panel boards, plates, etc. Has only one moving member and two coil springs. Contacts are phosphor bronze of ample area, self-cleaning.

Rated 1 ampere at 125 volts and $\frac{1}{2}$ ampere at 250 volts.

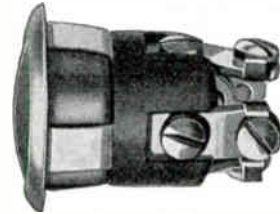
Standard finish, nickel; brushed brass when specified.

Approximate weight, 2 $\frac{1}{2}$ ounces.

No. 84..... each \$2.65

No. 265 Edwards Low Voltage Return Call Push Buttons

Schedule T



For 3-wire return call systems. Also used where a number of pushes are installed, one for each bell, with one push to ring all bells.

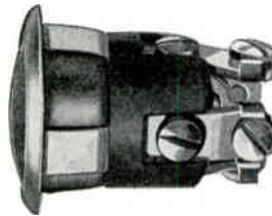
Standard finish, nickel; brush brass when specified.

Standard package, one; approximate weight, 2 ounces.

No. 265, Insulated, Fits $\frac{3}{4}$ -Inch Hole..... each \$1.90

Edwards Low Voltage Multiple Contact Push Buttons

Schedule T



Has four insulated contact springs on which a plunger contacts when depressed. The contacts may be connected to provide three circuits with one common or strapped together to close two circuits with double contact capacity. Phosphor-bronze, wiping contacts.

Standard finish, nickel; brush brass when specified.

Standard package, one; approximate weight, 2 ounces.

No. 260, For Open Circuit, Fits $\frac{3}{4}$ -In. Hole... each \$1.40
No. 260C, For Closed Circuit, Fits $\frac{3}{4}$ -In. Hole... each 2.05

No. 262 Edwards Conduit Push Buttons

Schedule T



Ideal for bathrooms in residences, apartments and all similar places where a small, distinctive conduit push is required.

Furnished complete with attachment to fit $\frac{1}{2}$ -inch conduit coupling.

Inside the threaded brass pipe is a vertical rod which enables the attachment to be screwed

into conduit coupling with a pair of pliers. Push itself is a special adaption of No. 621, with wider flange and other features.

Standard finish, nickel, brushed-brass, when specified, no extra charge. Standard package, one.

No. 262, Conduit Push Comp., Wt., 4 Oz..... each \$4.00
No. 621C, Push Button Only, Wt., 2 Oz..... each 2.00

Edwards Quick-Break Push Buttons

110-220-Volt
Schedule T



No. 85

Sturdy mechanism and heavy contacts so designed that no matter how slowly the finger pressure is released the contact breaks quickly.

Standard finish, nickel; brush brass when specified.

Standard package, one.

No.	Each	Description	Volt- age	Wt. Oz.
85	\$2.40	Forced Fit in 3/4-In. Hole.....	110	2
85A	6.20	Forced Fit in 1 1/8-In. Hole.....	220	4
85P	3.15	Escutcheon Type, for 3/4-In. Hole...	110	4
85AP	6.95	Escutcheon Type, for 1 1/8-In. Hole...	220	6
85L	2.65	Locknut Type, Fits 7/8-In. Hole....	110	3
85C	7.85	Closed Circuit, Forced Fit in 1 1/8-In. Hole.....	110	4

Can be furnished with red or white centers for which, add 70 cents.

No. 650 Edwards Solid Forged Brass Push Buttons

Schedule E



Recommended for better grade apartment and residence work.

Sturdy mechanism is entirely insulated and securely riveted to the solid brass case, making the push all one-piece.

Connections are easily made direct to two large screws on back of the push.

Can be mounted on metal trims without fear of short circuiting.

Oval head wood screws 3/4-inch No. 6 are furnished standard to match finish.

Overall dimensions: Height, 3 1/4 inches; width, 1 1/8 inches; depth, 5/8 inch.

Standard finish, brush brass with antique (black) mat.

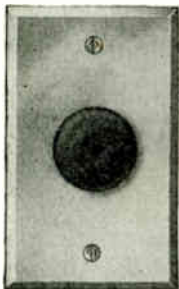
Standard package, 10.

Approximate weight per standard package 2 1/8 pounds.

No.	Description	Each
650	Brush Brass with Antique (Black) Mat.....	\$1.10
650A	Polished Brass.....	1.15
650B	Verde Antique.....	1.20
650C	Bauer Barff (Black).....	1.20
650D	Swedish Iron.....	1.25
650E	Polished Bronze.....	1.25
650F	Polished Copper.....	1.25
650G	Chromium, Polished or Dull as Specified.....	1.75

No. 158-235 Edwards Wall Plates and Plugs

Schedule T



For extension on a signaling circuit to table push, floor push, etc.

Without center pin.

Mounted on a standard switch plate for flush wall installation.

Fits standard switch box.

Standard brushed brass finish.

Standard package, one.

Approximate weight, 5 ounces each.

No. 158-235.....each \$1.60

Nickel finish supplied if specified, no extra charge.

No. 261 Edwards Stone Escutcheons

Schedule T



A plain flanged casting for cementing into stone or tile entrances. Drilled for 3/4-inch push only. Hole to be drilled in cement, stone or tile must be 1 3/8 inches deep and 1 3/8 inches diameter. Standard finish, Bauer Barff (black). No push furnished unless specified. No. 260 push button is recommended. Standard package, 10.

No. 261, Escutcheon Only, Wt., 8 Oz.....each \$3.50
No. 260, Push Button Only, Wt., 2 Oz.....each 1.40

Edwards Flush Type Screwless Push Escutcheons

Schedule E



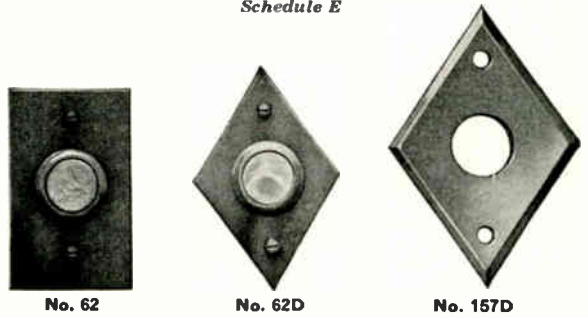
For use on plaster or where larger than the midget push is required. Iron sub-plate is first secured to the wall. There being a number of screw holes, it is always possible to engage a lath. The brass plate is then placed over the iron plate and push button pressed into place. Spring clips on side of the push button grip iron plate securely and hold button and top plate in place.

Standard finish, nickel; brush brass or cadmium, when specified.

Standard package, 10.
No. 60, For 5/8-In. Push, Wt., 5 Oz.....each \$3.30
No. 61, For 3/4-In. Push, Wt., 9 Oz.....each .30
Push buttons not included in price of escutcheons.

Edwards Push Button Escutcheons

Schedule E



Used with either flat pearl center, round glass center or protruding bakelite center push button. Spring clips on side of pushes hold them securely in place. Plates are solid brass.

Nos. 62 and 62D are flat, whereas Nos. 157S and 157D have beveled edges and are heavier gage. State size of push to be used when ordering.

Standard finish, nickel; brush brass or cadmium, when specified.

Standard package, 10. Assortment permitted to make standard package.

No.	For 5/8-In. Pushes		For 3/4 or 3/4-In. Pushes	
	62	62D	157S	157D
Each	\$.25	.25	.60	.60
Type	Rectangular	Diamond	Square	Diamond
Width.....in.	1 1/4	1 1/2	1 1/2	2 1/8
Height.....in.	2	2 1/4	1 7/8	3 1/8
Approx. Weight,				
Std. Pkg..oz.	8	8	13	13

Push buttons not included in price of escutcheons.

Edwards Bakelite Pendant Pushes



Suitable for residence and hospital work. Bakelite finish will not become scratched or marred like wood. Light in weight, but exceedingly strong and will not warp, crack or chip off.

- No. 65 has a raised, rounded center.
- No. 66 has a protruding center.
- No. 67 has a flat pearl center.

Supplied in black, mahogany or white enamel finish. Specify finish when ordering.

Schedule T

- Standard package, 1. Approximate weight, 2 ounces.
- No. 65, Black or Mahogany..... each \$.74
 - No. 65W, White Enamel..... each .85
 - No. 66, Black or Mahogany..... each 1.00
 - No. 66W, White Enamel..... each 1.05

Schedule E

- Standard package, 10 of one color. Approximate weight, 11 ounces.
- No. 67, Black or Mahogany..... each \$.60
 - No. 67W, White Enamel..... each .75
- For 2-conductor brown cord attached, add to price, 16 cents per foot.

No. 206 Edwards Table Pushes

Schedule E



Clamps on table without scratching. Used in connection with floor push or wall plug. Self-contained with button and contact built into spring clamp base. Self-cleaning, phosphor bronze contacts.

- Standard nickel finish. Standard package, 10. Weight, 2 ounces each.
- No. 206 each \$1.25

Edwards French Table and Pendant Pushes



No. 150

For bedrooms in better class residences and apartments. Rims are gold or silver-plated. Centers are cast colored glass matched with precious stone colors. Furnished complete with 8 feet of white silk cord attached.

No. 150 is 2 1/8 inches in diameter; 1 1/8 inches high. No. 70 is 1 1/4 inches in diameter; 2 1/8 inches long.

Add to Schedule T

Cat. No.	Body	Center	Rim
A	Rose Quartz	Blue	Silver
B	Green Quartz	Violet	Silver
C	Green Quartz	Yellow	Silver
D	Yellow Quartz	Violet	Gold
E	Light Onyx	Black	Gold
F	Ivory	Red	Silver

- No. 150, Table Type..... each \$3.50
- No. 70, Pendant Type..... each 3.50



No. 70

No. 234 Edwards Receptaplugs

For Fully Carpeted Floors

Schedule E



Provides a means for extending the dining room call signal to a convenient point. Designed for use where dining room is completely carpeted.

Receptacle mortises into floor so that no part extends above floor line. Sharp pointed spike inserts easily through carpet without harm and into hole in receptacle.

Receptacle and spike are of rugged construction, heavy brass with soft rubber cap. Size of spike, 2 inches long, 1/4-inch diameter. Furnished without cord.

- Satin brass finish is standard.
- Weight, 3 ounces. Standard package, 5.
 - No. 234 Receptaplug with Spike each \$2.50
 - Spike Only for No. 234..... each 1.50

No. 235 Edwards Receptaplugs

For Non-Carpeted Floors or Rugs

Schedule E



A compact attachment plug for use where No. 290 floor tread is used beneath floor covering and can be reached to change its position.

Receptacle mortises into floor. Rubber capped plug is inserted flush into receptacle leaving no bulge.

Plug will not fit standard lighting receptacles, thus preventing the possibility of shorting the line.

Satin brass finish with brown rubber cap.

- Furnished without cord and push.
- Weight, 2 ounces.
- Standard package, 10.

- No. 235..... each \$.95

No. 237 Edwards Floor Pushes

For Uncarpeted Floors

Schedule E



Provides a means of closing a signaling circuit at a fixed location on the floor. Receptacle mortises into floor and allows pin only to extend above floor line. Slight pressure on pin causes contact.

Weight, 2 ounces. Standard package, 10.

- No. 237 Floor Push with Pin..... each \$.75
- Pin Only for No. 237..... each .15

No. 290 Edwards Dixie Floor Tread

Schedule E



Recommended as a dining room push for calling servant during meals. Contact easily made by pressure at any point. Rubber covered base prevents push from sliding. The connectors are firm and reliable and whole device is designed for quick, easy installation. Cord enters through brass strap which holds it securely. Standard finish is satin brass.

Standard package, 10.

- No. 290, Approx. Wt., 5 Oz. Each each \$1.20

No. 235-290 Edwards Complete Floor Tread Combination

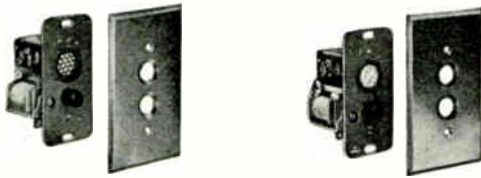
Schedule E



Consists of No. 235 receptaplug completely wired with five feet of brown rubber covered cord to No. 290 floor tread.

- Weight, 9 ounces. Standard package, 5.
- No. 235-290 Combination..... each \$2.70

Edwards Answercalls
For Return Call Push Button Stations
8-12 Volts A.C. Standard
Schedule T



It fits any standard single gang switch box 2 3/8 inches deep and takes any standard push button switch plate.

No. 139 has buzz audible signal with no contacts or pivots and requires no adjustment. May be varied after installation, from loud low tone to a soft high tone through hole in sub-plate. Marked binding posts easily accessible.

No. 140 has annunciator type drop, which leaves a visual signal. Operation of push button, when call is answered, automatically resets drop. Recommended for use in Y.M.C.A. buildings, dormitories, and other places where it is desirable to leave an indication that a call has been made to the room during the occupant's absence.

No. 139, Flush Non-Indicating, Wt., 8 Oz. each \$4.80
No. 140, Flush Indicating, Wt., 9 Oz. each 9.30
Up to 24 volts a.c. no extra charge. Price does not include plate.

No. 136 Edwards Surface Type Return Call Push Button Stations

D.C. or A.C.
Schedule T



Designed particularly for installation in existing buildings.

Provides a neat appearing plate mounted on a shallow cast box, which provides entrance for conduit or open wires as desired.

The audible signal is an Edwards Double Adjustment Lungen Buzzer, and station is completely wired for installation with Edwards Return Call Push.

The cast box is rubberoid black, the plate brushed brass or nickel.

Standard package, 1; approximate weight, 1 1/2 pounds.
No. 136, With Metal Plate each \$6.00
No. 136, With Bakelite Plate, If Specified..... each 6.25

No. 137 Edwards Flush Type Return Call Push Button Stations

D.C. or A.C.
Schedule T



A flush plate for mounting on a standard single gang switch box.

The audible signal is an Edwards Double Adjustment Lungen Buzzer, and the station is completely wired for installation with Edwards Return Call Push.

Standard finish, brushed brass or nickel.
Standard package, one.
Approximate weight per standard package, 1/2 pound.

No. 137, With Metal Plate each \$5.00
No. 137, With Bakelite Plate, If Specified..... each 5.25

No. 138 Edwards Flush Indicating Type Return Call Push Button Stations

D.C. or A.C.
Schedule T



For use in college dormitories and other places where it is desirable to leave an indication that a call has been made to the room during the occupant's absence.

Fits any standard two-gang switch box. The audible signal is an Edwards Double Adjustment Lungen Buzzer. The visible signal is a white arrow, which is sharply outlined through a small round glass window. One push button is for the return call, the other to reset the indicating arrow.

Standard package, one.
Approximate weight per standard package, one pound.
No. 138, With Metal Plate each \$12.00

Faraday Perfection Midget Push Buttons

Fully insulated. With self-cleaning wiping contacts of phosphor-bronze and terminal lugs. Shells of buttons carry no current, permitting mounting in metal.

Buttons have 4 spring clips, guaranteeing firm locking in proper size holes—either 5/8 or 3/4 inch.

Flat-Top Pattern, 5/8-Inch Standard

Standard finishes, polished nickel or satin-brass, as specified.



Cat. No.	Each	Description	Std. Pkg.	Sched.
5-A	\$.38	Pearl Centers	50	E
5-B	.50	Black Centers	20	E

Raised-Center Pattern, 5/8-Inch Standard

Extreme height of center above level of edge is 1/8 inch, and from that, sloping off to level of rim.



Cat. No.	Each	Description	Std. Pkg.	Sched.
8-A	\$.44	White Centers	20	E
8-B	.44	Black Centers	20	E
8-C	.44	Blue Centers	20	E
8-D	.44	Red Centers	20	E
8-E	.94	Luminous Centers	1	T
9-A	.65	Black Centers, Protruding 3/16"	10	E



3/4-Inch Standard

Cat. No.	Each	Description	Std. Pkg.	Sched.
7-A	\$.75	Pearl Centers	20	E
7-B	.87	Black Centers	20	E

3/4-Inch Size, with Bakelite Body, Extra Heavy Contacts

With solid molded bakelite bodies in which metal inserts are securely anchored.

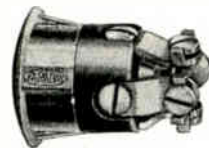
Cat. No.	Each	Description	Std. Pkg.	Sched.
16-A	\$ 1.40	Black Centers	1	T
16-B	1.40	White Centers	1	T
16-C	2.05	Black Centers, Closed-Circuit	1	T

3/4-Inch Size, Special Purpose, with Bakelite Body, Extra Heavy Contacts

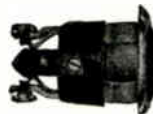
No. 11-A buttons will close 3 circuits at once; useful where bells, annunciators, and other devices are to be operated at same time, but where it is not desired to operate them in multiple. By strapping the contacts it is often used on single circuits to obtain the additional current carrying capacity of multiple contacts.

No. 15-A buttons are made so that they open one circuit and close another. For return-call systems using 2 common wires and 1 return they are invaluable.

With black centers. Standard package, 1.



Cat. No.	Each	Description	Sched.
11-A	\$ 1.40	4-Contact Open-Cir	T
12-A	2.05	4-Contact Closed-Cir	T
13-A	2.05	3-Contact Closed-Cir	T
14-A	1.40	3-Contact Open-Cir	T
15-A	1.90	Return-Call	T



3/4-Inch Chime Call Repeater

Cat. No.	Each	Description	Std. Pkg.	Sched.
1556	\$ 1.40	2-Contact, Flush	1	T

Small Plates for Midget Pushbuttons

Standard finish, sprayed satin-brass. Nickel or cadmium at no additional cost, if so specified.

Cat. No.	Each	Description	Std. Pkg.	Sched.
945	\$.25	Diamond Shape, 1 1/2 In. Wide and 2 1/4 In. High, for 5/8-In. Button Only	10	E
*946	.60	Diamond Shape, 2 1/8 In. Wide and 3 1/8 In. High	10	E
*947	.60	Square Shape, 1 3/8 In. Square	10	E
948	.25	Rectangular Shape, 1 1/4 In. Wide and 2 In. High, for 5/8-In. Button Only	10	E

*Specify size hole desired.

Faraday Pear-Shape Pushbuttons

Pendant Type

Schedule E



No. BP-5

Pushbuttons are made of bakelite.

Packed in individual cartons; standard package, 10.

No. BP-5, Black or Mahogany Finish as Specified each **\$.60**
 No. BP-6, White Enamel Fin. each **.75**

For raised rounded-center pushes, add 30 cents. For protruding black center pushes, add 30 cents (Schedule T; standard package, 1).

Faraday Combination Floor-Pushes and Plugs

Schedule E



Nos. CFP-2 and CFP-3 are the same, except that No. CFP-3 has plates that are extra large in diameter, and have mounting holes to fit all standard makes of floor outlet boxes. Widely used on installations where circuits are run in conduit or armored conductor.

Floor box is not included. When ordering, the make of floorbox should be specified.

Standard finish: satin brass.

Packed in individual cartons; standard package, 10.

No. CFP-2..... each **\$.95**
 No. CFP-3..... each **1.50**

No. FT-1 Faraday Floor Treads

Schedule E



Standard finish: satin brass.
 Packed in individual cartons; standard package, 10.
 No. FT-1, without Cord... each **\$1.50**
 For 6-Foot Flexible Cord
 Attached..... add **.54**

No. 968 Faraday Flush Disc Floor Connectors

Schedule E

Flush Disc Floor Connector consists of a fiber disc 2 inches in diameter for convenient insertion in dining room floor so as to be flush with its surface.

The battery and bell connections are made to the binding posts on the under side of the disc. The floor tread or pushbutton connections are attached to the two screws near the outer edge on top.

Packed in individual cartons; standard package, 10.

No. 968..... each **\$1.50**

No. 940 Faraday Pull-Cord Bell Switches

Schedule T

Pull-cord switches are designed to allow the use of silk bell ropes or tapestry ribbons rather than push buttons, for bell and annunciator systems in fine residences and apartments following Old Colonial, Italian or English style of interior. They are mounted in the wall near the ceiling. Fit standard switch boxes.

Pull-cord is attached to ring on connection arm. Pulling cord raises arm to make connection; when cord is released spring restores arm and breaks connection.

No face plate is furnished, permitting the use of any standard single-gang toggle switch plate of brass, glass, bakelite, etc.

Standard finish: satin brass.

Standard package, 1.

No. 940, without Plate..... each **\$7.50**

Faraday High Voltage Quick-Break Pushbuttons

National Code Standard Schedule T

Quick-Break Pushbuttons are essential for momentarily opening or closing electrical circuits where the amperage is more than the ordinary pattern of slow-break pushbuttons can handle without destructive arcing at contacts.

Recommended for use on circuits up to 250 volts within non-inductive load ratings specified below. Invaluable for controlling signal gongs, horns, sirens, X-Ray, medical and therapeutical devices; also for cutting-in voltmeters and ammeters. Will be found necessary for many low-voltage circuits where the number of devices on the lines draw more than ordinary pushbutton mechanisms can break without destructive arcing. Two buttons can be mounted in a single-gang plate, or four on a double-gang at an additional price.

Type C Gas-Filled Lamps have an instantaneous heavy current surge. If pushbuttons are to be used to control Type C Gas-Filled Lamps, send full data on number of lamps, wattage, and voltage to be used.

It is recommended that these pushbuttons be installed in standard switch or outlet boxes (for which the plates are designed) as National Electric Code requires this character of installation.

Insulation is bakelite throughout. Pushbutton-centers on the Watertight models are covered by waterproof pigskin diaphragms making it impossible for water or fumes to penetrate the mechanisms.

No. 885 Round Pushbuttons—Midget Pattern



Round, quick-break pushbuttons are furnished with flexible wire-leads complete with locknuts for mounting. They require a 1 3/8-inch hole for mounting on a plate—thickness of plate may be up to 3/4 inch.

Mechanisms are bakelite insulated throughout, and are entirely enclosed by one-piece, metal casings with insulated linings.

Standard finish: nickel. Satin brass will be furnished at no additional charge if so specified.

Maximum carrying capacity, 6 amperes at 120 volts.

Diameter of flange, 1 1/16 inches.

No. 885, with Locknuts for Mounting..... each **\$2.65**

Rectangular Pushbuttons—Flush Pattern



No. 133

Can be mounted on standard switch box. Furnished with metal plate.

Standard finish: statuary bronze. For polished chromium, add \$1.00.

Maximum carrying capacity, 15 amperes at 10-12 volts; 6 amperes at 125 volts; and 3 amperes at 250 volts.

Size plate, 2 3/4 x 4 1/2 inches.

No. 132, Open Circuit, Non-Watertight, 10 to 125 V. each **\$3.00**

No. 133, Open Circuit, Watertight, 10 to 125 Volts.... each **5.60**

No. 134, Closed Circuit, Non-Watertight, 10 to 125 V. each **4.50**

No. 135, Closed Circuit, Watertight, 10 to 125 Volts.... each **7.10**

Faraday Oval Pushbuttons

Surface Type

Schedule T

This pushbutton will stand up under most severe service conditions such as busy elevator signaling, etc. With molded bakelite base and center, and double contact, phosphor bronze contacts.

Height, 2 1/4 inches; width, 1 1/4 inches.

With Metal Shell

No. 933-A, Black Oxid. Finish... ea. **\$1.44**

No. 933-B, Brush Brass Finish... ea. **1.44**

No. 933-C, Pol. Nickel Finish... ea. **1.44**

No. 933-E, Pol. Chrom. Finish... ea. **1.80**

With Bakelite Shell

No. 933-D, Pol. Brown Finish... ea. **\$1.80**



No. 933-A

Faraday Woodbase Directory Pushbuttons
With Metal Plates
Schedule T



No. 2-A

These directory pushbuttons have a wood, felt-covered base with a metal face-plate. Cardholders are provided for easy insertion or removal of name plates.

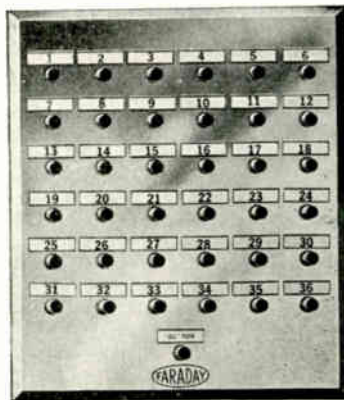
Buttons cannot be accidentally pressed. Standard finishes: base—walnut, mahogany or golden oak; face plate—polished nickel or satin brass.

No. of Buttons	No. 1-A Surface, Wall or Desk Type			No. 2-A Inclined Desk Type			Flush Type	
	Without Cord Each	With 6-Ft. Cord Each	With 6-Ft. Cable and Conn. Box Each	Without Cord Each	With 6-Ft. Cord Each	With 6-Ft. Cable and Conn. Box Each	No. 3-A, without Cord Each	No. 77 Highest Grade, without Cord Each
1	\$3.90	\$4.44	\$5.54	\$3.90	\$4.44	\$5.54	\$3.90	\$5.90
2	5.30	6.62	7.78	5.30	6.62	7.78	5.30	7.30
3	6.60	8.36	9.60	6.60	8.36	9.60	6.60	12.00
4	8.10	10.30	11.64	8.10	10.30	11.64	8.10	14.00
5	9.40	12.04	13.54	9.40	12.04	13.54	9.40	15.00
6	10.80	13.88	15.64	10.80	13.88	15.64	10.80	16.50
7	12.20	16.85	17.60	12.20	16.85	17.60	12.20	18.00
8	13.70	17.66	19.66	13.70	17.66	19.66	13.70	19.00
10	16.40	21.24	23.44	16.40	21.24	23.44	16.40	22.00
12	20.25	25.97	28.27	20.25	25.97	28.37	20.25	26.00

For larger sizes, add the following prices for each additional button:

\$2.00	2.48	3.00	2.00	2.48	3.00	2.00	2.00
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Faraday Pushbutton Panels
Flush Type
Schedule D



No. PBP-1

Faraday Pushbutton Plates are for use in schools and other institutions where bells are to be rung individually or all at the same time. Cannot be made for program method of ringing. Buttons are mounted on brass plates.

Can be furnished with any desired number of buttons, for individual ringing of bells, and with or without an "All" push which is used to ring all bells simultaneously. "All" push is charged the same as individual pushes.

Furnished complete with backbox.

Standard finish: sprayed satin brass or nickel.

No. PBP-1, with Cardholders and "All" Push	per button	\$4.35
No. PBP-2, with Cardholders, but without "All" Push	per button	4.10
No. PBP-3, with Engraving under Each Push, and "All" Push	per button	4.35
No. PBP-4, with Engraving under Each Push, but without "All" Push	per button	4.10

Faraday Watertight Push Buttons
Surface and Flush Types
Schedule T



No. WP-25



No. WP-30



No. WP-35



No. WP-40

These push buttons are of the diaphragm pattern having a waterproofed pigskin diaphragm over the center making it impossible for water or fumes to penetrate to the mechanism which is 100 per cent bakelite insulated.

Dependable for outside of buildings and places where dampness and water are a menace.

Nos. WP-25, WP-30, WP-40 and WP-55 furnished with rubber gaskets for mounting.

Standard finish, statuary bronze. For polished chromium, add \$1.00 to list. Other special finishes, on application. Standard package, 1.

Cat. No.	Description	Each
WP-25	Surface Pattern, Polished Bakelite Case . . .	\$3.00
WP-30	Surface Pattern, Heavy Bronze Case with Screw-Top-Front	3.50
WP-35	Surface Conduit Pattern, Solid Brass Front Plate, Heavy Cast Iron Back-Box Drilled and Tapped for 1/2-Inch Conduit	7.50
WP-40	Flush Switch Box Pattern, Solid Brass Front Plate, Fits Standard Single-Gang Switch Box (Switch Box Not Included in Price)	5.60
WP-50	Surface Pattern, Heavy Bronze Case with Screw-Top-Front with Conduit Plate Attached, Drilled for 1/2-Inch Conduit	5.50
WP-55	Surface Pattern, Same as WP-30 but Mounted on Single-Gang Switch Plate	5.60

Faraday Electric Door Openers

*For Maximum of 10 Volts A.C. or 6 Volts D.C. at Terminals



No. 621, Mortise Type



No. 623, Rim Type

Faraday Electric Door Openers have extra heavy frames, and are of the most rugged construction.

Mortise type door opener is recommended for use in apartment houses, offices, etc. Face plate is 5 1/16 inches long, 1 1/4 inches wide, and 1/8 inch thick. Case is 3 1/16 inches high, 2 inches wide, and 1 5/16 inch thick. Latch opening, 1 1/4 inches.

Rim type door opener is designed for surface locks, through locks, through doors, gates, etc. Both casings and face plates are solid bronze. Overall dimensions: height, 4 3/4 inches; width, 2 9/16 inches; thickness, 1 1/4 inches. Latch opening, 1 1/4 inches.

No. and Type	621, Mortise	623, Rim
Each	\$3.00	5.00
Schedule	E	T
Standard Package	24	1

*Higher voltages are recommended on long circuits.

No. 9 Edwards Door Openers

Economy, Mortise Type

Schedule E

4½-6 Volts D.C. or 8-12 Volts A.C.

Face plate and nosing made of solid brass. Used extensively for low cost apartment jobs.

Fits same size mortise as same shape openers of other manufacturers. Height, 3¾ inches; depth, 2½ inches; thickness, 1 inch; nosing opening, 1¼ inches; face plate, 5½x1¼ inches.

May be used on either right or left hand doors.

Standard package, 24.

Approximate weight, one pound.

No. 9.....each \$2.00



No. 154 Edwards Door Openers

Mortise Type, Roller Nose

Schedule T

4½ Volts D.C. or 8-12 Volts A.C.

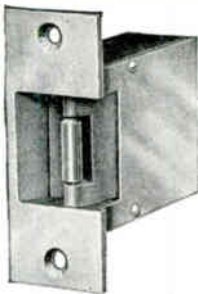
Height, 3¾ inches; depth, 2¾ inches; thickness, 1¼ inches. Nosing opening, 1¼ inches. Face plate, 1¼x3¾ inches. Brass finish.

May be used on either right or left hand doors.

Approximate weight, 14 ounces.

No. 154.....each \$5.65

Can be supplied with a release check permitting the use of door opener where air checks are employed; add to price, \$8.00.



Special voltage up to 12 volts add to list \$1.00; up to 24 volts add \$1.50; up to 32 volts add \$2.50; up to 48 volts add \$4.00.

No. 152 Edwards Door Openers

Commercial, Rim Type, Solid Nose

Schedule T

4½-6 Volts D.C. or 12-16 Volts A.C.



For surface locks, thin frames, etc. Frame is cast iron with brass finish face plate and solid brass nosing.

Height, 2 inches; depth, 3 inches; thickness, 1½ inches; nosing opening, 1¼ inches.

Approximate weight 13 ounces.

No. 152.....each \$5.00

Special voltage up to 12 volts add to list \$1.00; up to 24 volts add \$1.50; up to 32 volts add \$2.50; up to 48 volts add \$4.00.

No. 1541 Edwards Door Openers

Mortise Type—With Dead Bolt Opening

4½-6 V. D.C. or 12-16 V. A.C.

Schedule T

Has roller nose. Face plate is extended to provide space for mortise for dead bolt.

When ordering, a sketch or template must be furnished to show exact location of dead bolt and screw holes. There cannot be less than ⅝ inch space between nosing and dead bolt openings. If no sketch is sent, standard door opener, as illustrated, will be furnished.

Height, 2 inches; depth, 2¾ inches; thickness, 1½ inches. Nosing opening, 1¼ inches; face plate, 1½x6¼ inches.

Finish, brass.

Standard package, 1. Weight, 1½ pounds.

No. 1541.....each \$13.00



No. 1540 Edwards Door Openers

Mortise Type, Roller Nose

Schedule T

4½-6 Volts D.C. or 12-16 Volts A.C.

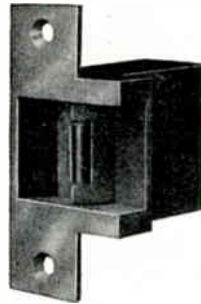
Height, 3¾ inches; depth, 2¾ inches; thickness, 1½ inches. Nosing opening, 1¼ inches. Face plate, 1½x3¾ inches. Brass finish.

Has extended lip to cover ragged edges where wood is mortised for opener. May be used on either right or left hand doors.

No. 1540, Wt., 14 oz.....each \$17.00

Can be supplied with a release check permitting the use of door opener where air checks are employed; add to price, \$4.00.

Special voltage up to 12 volts add to list \$1.00; up to 24 volts add \$1.50; up to 32 volts add \$2.50; up to 48 volts add \$4.00.



No. 1543 Edwards Door Openers

Mortise Type, Roller Nose

Schedule T

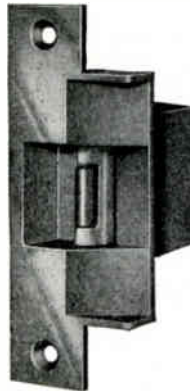
4½-6 Volts D.C. or 12-16 Volts A.C.

For locks having automatic dead-locking bolt. Face plate is so machined that the auxiliary latch on the lock is not pressed in when closing the door until the main latch has engaged the nosing of the door opener.

Closing the door completely causes the auxiliary bolt to ride up on the face plate, thereby dead-locking the latch bolt.

Has extended lip to cover ragged edges where wood is mortised for opener.

No. 1543, Wt., 14 oz.....each \$20.00



No. 1542 Edwards Door Openers

Mortise Type, Roller Nose, with Dead Bolt Opening

Schedule T

4½-6 Volts D.C. or 12-16 Volts A.C.

Face plate is extended to provide space for mortise for dead bolt. Extended lip covers mortised woodwork to permit a neat installation.

Height, 2 inches; depth, 2¾ inches; thickness, 1½ inches. Nosing opening, 1¼ inches; face plate, 1½x6¼ inches. Brass finish.

Approximate weight, 1½ pounds.

No. 1542.....each \$18.00

When ordering, a sketch or template must be furnished to show exact location of dead bolt and screw holes. There cannot be less than ⅝ inch space between nosing and dead bolt openings. If no sketch is sent, standard door opener, as illustrated, will be furnished.



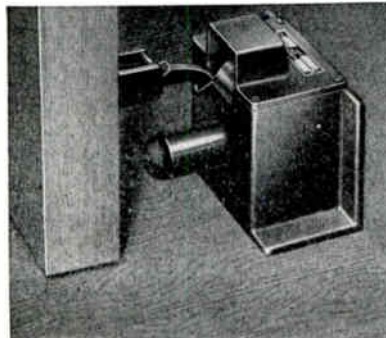
No. 175 Edwards Door Releases

Schedule T

For use in offices, banks, etc. where it is desired to be able to close a door from a remote location. Used in conjunction with a door check, this release keeps the door open until energized from a remote push button. Cast housing. Drilled for floor or wall mounting.

Weight, 5½ lb.

No. 175.....each \$56.00



Edwards Burglar Alarm Springs

Schedule E



No. 28 or 30 Window Spring



No. 34 Door Spring



No. 32 or 32-C Transom Spring



No. 38 Make and Break



No. 236 Door Trip

Window springs should be placed in the frame several inches above the lower end of the upper sash—and the same distance below the upper end of the lower sash. Each sash should be mortised so that the nosing of the spring will be set in the recess

when the window is closed. The mortise should be continued (beyond the necessary point) to permit the opening of the window for ventilation. It is advisable that this system of installation be followed. Without the mortise any one trying to enter the house and knowing of the window springs can easily open the window gradually, and hold the spring depressed with the finger.

The Edwards Springs when used properly as described are classified as follows:

Open circuit window springs—nosing depressed contact is closed.

Closed circuit window springs—nosing depressed contact is open.

Open circuit door springs—plunger depressed contact is open.

Closed circuit door springs—plunger depressed contact is closed.

Assortment of 50, all styles to make standard package.

Open Circuit Spring

No.	Each	Description	Size Plate Inches	Std. Pkg.	Approx. Wt. Lb. Std. Pkg.
28	\$.58	Window	2 1/2 x 1/2	10	5/8
30	.80	Window	3 3/8 x 5/8	10	1 1/8
32	1.10	Transom	2 1/2 x 1 1/16	10	1 1/2
34	.34	Door	2 x 5/8	50	2 13/16
38	.34	Make and Break	2 x 5/8	10	1 1/8
236	1.05	Door Trip	2 1/4 x 1 1/4	10	7/8

Closed Circuit Spring

30-C	\$.80	Window	3 3/8 x 5/8	10	1 3/16
39	.34	Door	2 x 5/8	10	1 1/8
32-C	1.10	Transom	2 1/2 x 1 1/16	10	1 1/2

Insulated Window Springs

Schedule T

Standard package, one.
No. 31 Open Circuit, No. 31-C Closed Circuit...each \$3.00

Insulated Door Springs

Schedule T

Standard package, one.
No. 35 Open Circuit, No. 35-C Closed Circuit...each \$3.00

Edwards All-Purpose Contactors

Schedule E



Designed so pressure from any direction will depress the nosing. The contactor fits a 3/4-inch hole. Ideal for use on doors, windows, drawers, etc. Vulcoid insulation, phosphor bronze contacts of ample capacity for all low voltage work.

No. 44—Pressure on nosing opens the circuit. No. 45—Pressure on nosing closes the circuit. No. 46—Momentary contact; pressure on nosing makes, then breaks the circuit and repeats the operation in returning to normal.

Weight, 1 3/8 pounds. Standard package, 20.

No.	44	45	46
Each.....	\$.40	.40	.40

Edwards Burglar Alarm Traps

Schedule E



Installed with cord or wire stretched across entrances, open spaces or attached to doors, windows, etc. Slightest movement of cord or wire operates trap which makes and holds contact causing continuous ringing of bell without additional devices.

Covered Type

Standard package, 10. Can be assorted.
No. 27, For Open Circuit...each \$1.50
No. 27-C, For Closed Circuit...each 1.50

Uncovered Type

Standard package, 20. Can be assorted.
No. 29, For Open Circuit...each \$.36
No. 29-C, For Closed Circuit...each .36

Edwards Constant Ringing Drops

Schedule T

Especially designed for use in burglar alarm systems. With momentary closing of protective circuit this device causes bells to ring continuously, irrespective of subsequent opening of protective circuit. Plunger resets mechanism.

Recommended for battery systems where alarm may ring for several hours. Cuts own magnet out of circuit. Standard up to 16 V. a.c. or 12 V. d.c. Standard package, 1.

No. 26-B.....each \$2.70



Edwards Burglar Alarm Relays

Schedule T



No. 1238 Open Type For D.C. Only

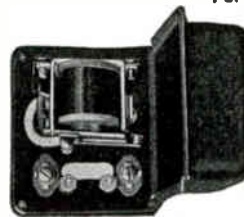
Adjustable for open or closed circuit operation. Pure hard drawn silver contacts. Contacts 1 ampere; 250 ohms recommended for closed circuit systems.

Standard package, 1.

20 Ohms.....	each \$6.00
250 Ohms.....	each 7.00
251 to 600 Ohms.....	each 8.00

No. 1239 Enclosed Type

For A.C. or D.C.



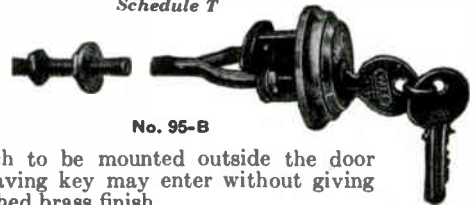
A small, compact, open or closed type as specified. Contacts 3 amperes 110 volts a.c., 6 amperes up to 48 volts a.c. Contacts 1 ampere, 110 volts d.c., 2 amperes up to 48 volts d.c.

Standard package, 1.

8-24 Volts.....	each \$6.00
25-48 Volts.....	each 6.75
110 Volts.....	each 8.00

Edwards Burglar Alarm Lock Switches

Schedule T



No. 95-B

Lock switch to be mounted outside the door so persons having key may enter without giving alarm. Polished brass finish.

No. 95, Comp. with Mounting Plate and Wood Screws, *Wt. 3/8 Lb.....	each \$6.50
No. 95-A, 2 Locks, On Entering Alarm is Turned Off and after Entering Turned on Inside, *Wt. 3/4 Lb. each	13.00
No. 95-B, Same as No. 95, with Rod to Go through Door, Fastened by Nuts Inside, *Wt. 1/2 Lb.	each 7.95
Extra Keys.....	each .80

*Weight is approximate per standard package of one.

Exide Storage Batteries

Exide sealed-glass jar batteries are furnished in types and capacities to meet virtually every requirement. In all types listed the covers have spray-proof vents and are shipped filled and charged for simplified installation and trouble-free life.

The Exide-Chloride type, with its famous Manchester positive and Box negative plates, has proved by many years of actual experience to be the outstanding battery for those installations where absolute dependability and long life are paramount, and where freedom from care and attention are vital factors.

The Exide-Ironclad type has positive plates of the well known Ironclad construction, which differ from all other plates in that the active material is contained in a series of rubber tubes with slots which permit access of the electrolyte, but are too fine to permit the escape of active material.

The Exide Pasted Plate type is offered for those installations where first cost is an important consideration and where space is limited.

Exide-Chloride



Type CTMH

The BTMH, CTMH, PTMH and ETMH units are assembled in crates, filled and charged, and are equipped with the necessary bolt connectors and inter-cell connectors, ready for service. The cells are arranged in one or two rows and are available in sizes from 2 to 12 cells.



Type EM

DMGO, EM and FM cells are assembled in individual blown glass jars, filled and charged, complete with terminals and bolt connectors, ready for service. When two or more cells are ordered, necessary connectors and lugs are included in the cell prices. Strap cell lifters are recommended for FM cells.

With an order of 10 or more FM cells, a strap cell lifter is included in the price. Rubber pads for use beneath the cells are furnished with all FM cells.

Types BTMH, CTMH, PTMH, and ETMH are furnished in painted wooden crates, all but the first two types being equipped with carrying handles.

Cells of greater capacity than listed below are available in sealed glass jar assembly up to 1155 ampere-hours at the 8-hour discharge rate.

Battery is shipped charged and filled with electrolyte.

Type	Each	No. Cells	*Cap. per Cell Amp.-Hr.	OVERALL DIMEN., IN.			Approx. Ship. Wt. Lb.
				Lgth.	Wdth.	Ht.	
BTMH-2	\$32.50	11	6	26 ⁵ / ₈	4 ¹ / ₁₆	10 ¹ / ₈	81
CTMH-2	47.20	11	12	29 ⁷ / ₈	7 ¹ / ₂	12 ¹ / ₈	156
PTMH-2	77.05	11	24	34 ⁵ / ₈	8	16 ⁷ / ₈	249
ETMH-2	102.85	11	36	21 ¹ / ₁₆	20 ¹ / ₂	16 ⁵ / ₈	368
DMGO-5	10.75	1	40	4 ¹ / ₁₆	8 ¹ / ₁₆	14 ³ / ₈	40
DMGO-7	13.85	1	60	5 ¹ / ₁₆	8 ¹ / ₁₆	14 ³ / ₈	50
DMGO-9	16.65	1	80	7	8 ¹ / ₁₆	14 ³ / ₈	62
EM-5	16.65	1	80	5 ³ / ₄	10 ³ / ₄	17 ³ / ₈	72
EM-7	22.90	1	120	6 ⁵ / ₈	10 ³ / ₄	17 ³ / ₈	91
EM-9	29.30	1	160	8 ¹ / ₂	10 ³ / ₄	17 ³ / ₈	119
FM-9	55.35	1	320	9 ¹ / ₄	14 ⁷ / ₃₂	22	220
FM-11	68.05	1	400	10 ¹ / ₁₆	14 ⁷ / ₃₂	22	250
FM-13	80.55	1	480	12 ⁵ / ₁₆	14 ⁷ / ₃₂	22	291

Exide-Ironclad



Type BI

These Exide-Ironclad batteries are assembled in two cell units in moulded glass containers, complete with necessary connectors. They are furnished filled and charged, ready for service.

If desired, a rubber bucket to hold the two cell unit may be ordered separately. These batteries are very popular for telephone PBX service and have earned an established reputation for economy in this application.

Type	Each	No. Cells	*Cap. per Cell Amp.-Hr.	OVERALL DIMEN., IN.			Approx. Ship. Wt. Lb.
				Lgth.	Wdth.	Ht.	
BI-5	\$9.50	2	15	8 ¹ / ₂	3 ¹ / ₈	7 ¹ / ₁₆	22
BI-9	13.95	2	30	8 ¹ / ₂	4 ⁷ / ₈	7 ¹ / ₁₆	30

Exide-Tytex

The Exide-Tytex battery, known as the clamped element type, consists of a new method of assembly, heavy, sturdy flat plates and double separation. This battery will prove more economical in the long run than the usual Flat Plate Types.

Type	Each	No. Cells	*Cap. per Cell Amps.-Hr.	OVERALL DIMEN., IN.			Approx. Ship. Wt. Lb.
				Lgth.	Wdth.	Ht.	
EO-5	\$13.20	1	80	5 ¹ / ₈	10 ³ / ₄	17 ³ / ₈	58
EO-7	18.15	1	120	5 ⁵ / ₈	10 ³ / ₄	17 ³ / ₈	62
EO-9	23.25	1	160	5 ⁵ / ₈	10 ³ / ₄	17 ³ / ₈	73
FO-15	70.55	1	532	9 ¹ / ₄	14 ⁷ / ₃₂	22	214
FO-17	79.75	1	608	10	14 ⁷ / ₃₂	22	234
FO-19	88.75	1	684	10 ¹ / ₁₆	14 ⁷ / ₃₂	22	254
FO-21	97.50	1	760	11 ¹ / ₂	14 ⁷ / ₃₂	22	274
FO-23	106.05	1	836	12 ⁵ / ₁₆	14 ⁷ / ₃₂	22	294

Exide Flat Plate

These batteries are furnished in multi-compartment moulded glass containers, filled and charged, ready for service. The elements are flat plates assembled with both wood and rubber separators. Each container is equipped with pilot balls to give approximate indication of the state of charge. The terminal cells of these units are equipped with the necessary bolt connectors.



Type LXGH 3-Cell Unit

Made in a wide variety of sizes and types to meet requirements of various kinds of power applications. Used where a reliable source of direct current at steady voltage is required either constantly, intermittently, or to tide over occasional interruptions in the normal power supply.

Type	Each	No. Cells	*Cap. per Cell Amp.-Hr.	OVERALL DIMEN., IN.			Approx. Ship. Wt. Lb.
				Lgth.	Wdth.	Ht.	
BTER-5	\$11.10	3	14.4	9 ¹ / ₄	5 ⁵ / ₈	8 ¹ / ₁₆	37
BTER-7	13.30	3	21.6	9 ¹ / ₄	5 ⁵ / ₈	8 ¹ / ₁₆	40
KZHGR-7	14.15	3	25	9 ¹ / ₄	5 ⁵ / ₈	8 ¹ / ₁₆	41
LXGH-7	13.75	2	50	6 ³ / ₈	7 ¹ / ₂	10 ¹ / ₄	40
LXGH-7	18.00	3	50	9 ⁷ / ₃₂	7 ¹ / ₂	10 ¹ / ₄	58
LXGH-13	19.10	2	100	9 ³ / ₄	7 ¹ / ₂	10 ¹ / ₄	68
LXGH-13	26.65	3	100	14 ³ / ₃₂	7 ¹ / ₂	10 ¹ / ₄	102

*Based on 8-hour discharge rate to 1.75 final volts average.

Prices include necessary connectors and lugs. A strap cell lifter is furnished with ten or more cells of Type FO. Rubber pads, No. 22198, are included with shipments of FO cells.

BTMH-2, CTMH-2, and PTMH-2 are assembled in one row. ETMH-2 is assembled in two rows.

Step-type racks are available for mounting the cells listed. Full information is obtainable on request.

Details and prices for all repair parts including thermometers, hydrometers, electrolyte, inter-row and inter-tier connectors, as well as other miscellaneous parts, are available upon request.

Edison Primary Batteries

For either direct operation or as standby batteries where continuous d.c. power supply is extremely important. Standard types adequately and economically meet the low voltage power requirements for: Police, fire and burglar alarms; annunciator systems; elevator signals; stationary engine ignition; industrial, school and scientific laboratory services; marine beacons on fixed structures; program and time clock systems; mine signaling and communication; commercial and railroad telephone services (talking and ringing circuits, operators' transmitters on magneto switchboards, interrupters); telegraph

main line and local sounder circuits.

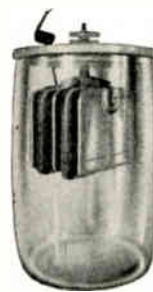
Edison Primary Batteries are applicable anywhere; require no battery charging facilities; deliver rated ampere-hour capacities continuously or intermittently at satisfactory voltage; do not lose capacity on open circuit even over long periods; have very low and constant internal resistance; give accurate visual indications of approaching and complete exhaustion; do not freeze; require no attention or maintenance excepting occasional visual inspections between renewals; are easily installed and renewed without expert help.

A.C. or D.C. Primary Battery System. For low voltage lighting, control and other d.c. circuits normally fed from commercial power sources and requiring standby batteries to insure uninterrupted operation in emergencies. If normal supply fails, a relay instantly transfers the entire load to an independent and extremely reliable primary battery reserve until normal service is restored. Emergency operation can be maintained indefinitely from the standby battery. Visual indications show reserve capacity available. No current or apparatus needed for battery charging. Visual inspection is only battery maintenance required. This system is the ultimate in dependability, simplicity and economy.

Description. Edison Primary Batteries are zinc, copper-oxide, alkaline electrolyte type. A complete cell consists of: Factory-assembled element of positive and negative plates, can of caustic soda for mixing electrolyte, heat-resisting glass or enameled steel jar, porcelain cover, bottle of battery oil, terminal nuts and washers. The 500 amp-hr. cells with steel jars include gasket and three clamps. They are splash-proof.

Renewing active materials restores an exhausted cell to full capacity. This simple operation requires only a new element, can of soda and bottle of oil which constitute a renewal. Other parts are permanent. Panels in zinc plates accurately indicate stage of exhaustion. All cells have liberal safety factor. Operating voltage averages 0.6 to 0.65 depending upon discharge rate. Use chart to select proper cells for load requirements.

Medium Duty Cells with 5-Plate Elements



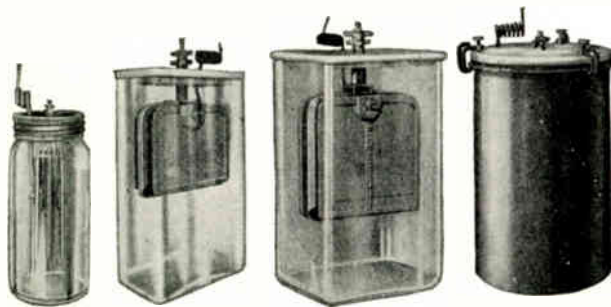
No. M-504



No. M-1002

No.	Complete Each	Re-novels Each	Cap. Amp-hr.	Max. Cont. Disch. Amp.	Kind	JAR Shape	Overall Dimensions Inches
M 502	\$4.60	\$2.35	500	2.6	Glass	Rect.	5 3/4 x 6 3/4 x 12 1/4
M-504	4.20	2.35	500	2.6	Glass	Barrel	7 Diam. x 11 5/8
M-507	4.60	2.35	500	2.6	Steel	Round	6 7/8 Diam. x 12 3/16
M-1002	7.75	4.25	1000	4.5	Glass	Rect.	6 1/2 x 8 1/4 x 14 3/4

Light Duty Cells with 3-Plate Elements



No. S-75 No. S-252 No. S-502 No. S-507

No.	Complete Each	Re-novels Each	Cap. Amp-hr.	Max. Cont. Disch. Amp.	Kind	JAR Shape	Overall Dimensions Inches
S-75	\$0.90	...	75	.650	Glass	Round	3 Diam. x 7 9/16
S-252	3.60	\$1.70	250	1.0	Glass	Rect.	3 3/8 x 5 1/16 x 12 1/4
S-502	4.40	2.15	500	2.2	Glass	Rect.	5 3/4 x 6 3/4 x 12 1/4
S-504	4.00	2.15	500	2.2	Glass	Barrel	7 Diam. x 11 5/8
S-507	4.40	2.15	500	2.2	Steel	Round	6 7/8 Diam. x 12 3/16

Heavy Duty Cells with 9 and 11-Plate Elements



No. HA-252 No. HA-504 No. HA-1002

No.	Complete Each	Re-novels Each	Cap. Amp-hr.	Max. Cont. Disch. Amp.	Kind	JAR Shape	Overall Dimensions Inches
HA-252	\$5.15	\$3.30	250	7.0	Glass	Rect.	6 x 4 x 13 1/4
HA-504	5.95	3.75	500	6.0	Glass	Rect.	5 3/4 x 6 3/4 x 12 1/4
HA-504	5.60	3.75	500	6.0	Glass	Barrel	7 Diam. x 11 5/8
HA-507	5.95	3.75	500	6.0	Steel	Round	6 7/8 Diam. x 12 3/16
HA-1002	9.50	5.60	1000	8.0	Glass	Rect.	6 1/2 x 8 1/4 x 14 3/4

No. 16 Eveready Dry Cell Batteries



A 6-inch cell battery for general utility. Available with screw terminals and round jacket only.

Overall diameter, 2 5/8 inches.

Overall height, 6 5/8 inches.

Volts, 1 1/2.

Standard package contains 12 batteries.

Approximate weight per standard package, 26 pounds.

No. 16.....each \$.25

No. 6 Eveready Ignitor Dry Cells With Screw Connections



Special high grade cell designed for all heavy service. Particularly adapted for motor ignition. Set of ignitors will keep engine running smoothly until every bit of current is exhausted.

Equally satisfactory for motor boats, gas engines, and in fact, any service where a reliable, long life battery is needed.

Carefully packed from fresh stock and guaranteed to reach destination in perfect condition.

Voltage 1 1/2.

Width 2 5/8 inches.

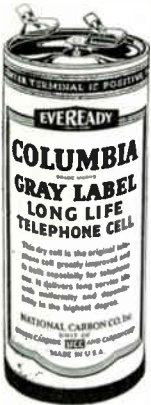
Height 6 5/8 inches.

Packed 12 to standard package.

Weight of standard package 27 pounds.

No. 6.....each \$.40

Eveready Columbia Telephone Cells



Gray Label Long Life Vertical Type, 1 1/2 Volts

Especially designed for telephone service. Long life on light drain service.

Round jackets only.

Fahnestock spring terminals are furnished, unless screw connections are specified.

Overall diameter, 2 5/8 inches.

Overall height, 6 5/8 inches.

Packed 25 in a standard package.

Weight per standard package, 57 pounds.

Each.....\$.40

Eveready Columbia Gray Label Telephone Dry Cells



This battery is especially designed for telephone work and light-drain service.

Fahnestock spring terminals are furnished unless screw connections are specified.

Voltage, 1 1/2.

Diameter, 2 5/8 inches.

Height, 6 5/8 inches.

Quantity in standard package, 25.

Approximate weight of standard package, 57 pounds.

Each.....\$.40

Eveready Special Railroad and Industrial Cells



Combines high amperage, heavy service life and light service life. Designed for railroad and industrial use where a wide range of service conditions from extremely heavy to extremely light are encountered.

Round jackets only. Screw connections unless Fahnestock Spring Terminals are specified.

Voltage, 1 1/2; overall diameter, 2 5/8 inches; overall height, 6 5/8 inches.

Packed 25 in a standard package.

Approximate weight of standard package, 61 pounds.

Each.....\$.40

No. 141 Eveready Hot Shot Batteries



A 4-cell battery for general utility. Available with screw terminals and steel case only. Length, 10 5/8 inches. Width, 2 3/4 inches. Height, 7 1/4 inches. Volts, 6.

Standard package, 6 batteries.

Weight per package, 38 pounds.

No. 141.....each \$1.60

Eveready Hot Shot Batteries



Cells are connected by soldered copper strips and encased in a single metal container. The advantages of this new type covering are the ability to withstand rough usage, water-proof, thoroughly insulated to prevent internal short circuits and a woven fabric handle for convenience in carrying.

Cat. No.	Each	Voltage	DIMENSIONS, INCHES			Std. Pkg. Quantity in Box	Approx. Wt. Lb. Per Pkg.
			Length	Width	Ht.		
1461	\$1.85	6	10 5/8	2 3/4	7 1/4	4	41
1462	1.85	6	5 5/8	5 5/8	7 1/4	4	41
1562	2.35	7 1/2	7 7/8	5	7 1/4	4	52
1667	2.75	9	7 3/4	5 1/4	7 1/4	4	62

No. 614 Eveready Electric Fence Batteries

6 Volts



Composed of specially selected cells assembled in a steel container. Internal connections are securely soldered and the cells are completely insulated against accidental short circuits.

Case is of rugged steel construction.

Especially designed for operation of electric fence controllers.

No.	Each	DIMENSIONS, INCHES			Unit Pkg. Quantity	Wt. Lb. Per Pkg.
		Length	Width	Height		
614	\$2.25	10 5/8	2 3/4	7 1/4	4	45



No. 7111 Eveready Dry Cell Radio A Batteries

Vertical Type, 1½ Volts



A single 6-inch dry cell battery having two screw knurls and put up in an attractive round paper jacket.

Connected in various combinations to meet the requirements of WD-11, UV-199 and all other dry cell tubes.

Furnished in round jackets and with screw knurls.

Width, 2½ inches; and height, 6⅝ inches.

Packed 12 in a standard package.

Weight per standard package, 27 pounds.

No. 7111.....each \$.45

No. 746 Eveready A Batteries



For 1.4 volt portable receivers.

For use with Eveready Mini-Max B battery.

A compact power supply unit for portable receivers.

Contains 3 Radio A cells.

Has 2-prong, 4½ volt socket.

Length, 3⅜ inches; width, 1⅝ inches.

Length, 3⅜ inches; width, 1⅝ inches; height, 4⅞ inches.

Packed 2 in a carton.

Weight per carton, 2½ pounds.

No. 746.....each \$.45

Eveready Portable Radio A Batteries

1½ Volts



For 1.4 volt radio receivers.

Gives more than double the service of the conventional battery of equal size.

Plug-in socket.



No. 742

No.	741	742	743
Each.....	\$.95	.50	.75
Size.....	3⅞x2⅞x5⅞	2⅞x2⅞x4	3⅞x2⅞x3⅞
Contains Radio A Cells.....	8	4	6
Weight....pounds	3¼	1¾	2¼

Eveready Portable Radio A Batteries



For use with Eveready Mini-Max B battery.

Make a most compact power supply unit for portable receivers of minimum size.

Each battery contains 8 Radio A cells.

Two prong socket.

The No. 747 is for A.C. or D.C. portable receivers.

No.	745	747
Each.....	\$.95	\$1.00
Volts.....	1½	6
Size.....inches	10¾x3⅞x1⅞	10¾x3⅞x1⅞
Weight.....pounds	3¼	3¼

No. 482 Eveready Mini-Max Portable Radio B Batteries

45 Volts

For 1.4 volt portable receivers.

Mini-Max gives more than double the listening hours of a conventional battery of equal size or about the same service life as a conventional battery of twice the size.

Equipped with duplex socket.

Size; length 3½ inches, width 1¾ inches; height 5⅞ inches.

Packed 2 in a unit package.

Weight per package, 4⅞ pounds.

No. 482.....each \$1.50



Eveready Portable Radio B Batteries

45 Volts

For 1.4 volt radio receivers.

Gives more than double the service of the conventional battery of equal size.



No. 738



No. 762

No.	738	762
Each.....	\$1.50	\$1.50
Size.....inches	2⅞x2⅞x4⅞	4⅞x2⅞x5⅞
Socket.....	Standard	Duplex
Weight.....pounds	1½	4⅞

Eveready Layerbilt Radio B Batteries

Vertical Type, 45 Volts



Standard



Long Life



Super

Made of flat layers of current producing elements compressed one against the other, so that every cubic inch inside the battery case is completely filled with electricity producing material.

No air gets through the holes to dry out the cells.

Plug-in type terminals.

Packed 6 in a carton.

For superior performance, real economy at a low price.

For those who want a better battery than the Standard. Gives more hours of service, longer life and performance.

For those who want the best. Extra long life, best performance.

No.	386	485	486	585	586
Each.....	\$2.45	1.69	2.10	1.39	1.85
Kind.....	Super	L. Life	L. Life	Std.	Std.
Size.....	Large	Medium	Large	Medium	Large
Length.....in.	8½	8½	8½	8½	8½
Width.....in.	4⅞	3⅞	4⅞	3⅞	4⅞
Height.....in.	7⅞	7⅞	7⅞	7⅞	7⅞
Wt. Per Pkg.lb.	91½	57	85	55	80

Eveready Air Cell Radio A Batteries



A-2300



A-2600



A-1300

A battery originally developed for owners of radios not on a power line. Has low ampere-hour cost, long service life, no recharging, constant voltage, and no shelf depreciation.

The Nos. A-2300 and A-2600 are for receivers drawing no more than 0.66 (660 milliamperes). No. A-1300 for receivers drawing no more than 0.2 (200 milliamperes).

Uses a liquid electrolyte but is shipped dry. In the dry state it undergoes no shelf depreciation.

No.	A-1300	A-2300	A-2600
Each	\$2.45	4.25	6.70
Voltage	1 1/4	2 1/2	2 1/2
For Receivers	1.4	2	2
Capacity	300	300	600
Length	5 1/4	8 7/32	9 15/16
Width	4 15/16	5 1/4	6 5/8
Height	8 7/32	8 7/32	10 7/8
Weight Each	7	12 1/2	24

Eveready Air Cell Batteries



No. T-1600



No. T-2600

For railroad, telephone and industrial use. The low ampere hour cost, long life and sustained voltage make these batteries desirable for telephone and signal work.

Available in two conservatively rated capacities—300 ampere hours and 600 ampere-hours.

Made in single cell units, also in batteries consisting of two cells in series. The average voltage per cell is 1.25 volts, falling to 1.0 volts per cell at the end of their capacity. Uses a liquid electrolyte.

Shipped dry. In the dry state it undergoes no shelf depreciation.

No.	T-1300	T-2300	T-1600	T-2600
Each	\$2.45	4.25	4.50	6.70
Volts	1 1/4	2 1/2	1 1/4	2 1/2
Capacity	300	300	600	600
Length	5 1/4	8 7/32	5 1/4	9 15/16
Width	4 3/16	5 1/4	6 1/2	6 5/8
Height	8 7/32	8 7/32	11	11
Weight Dry	6	11	11 1/2	21
Shipping Weight	7	12 1/2	13	24

No. 768 Eveready C Batteries

Horizontal Type, 22 1/2 Volts



Suitable for portable sets where light weight and small size are essential, and for self-contained sets having battery compartments too small to permit the installation of a larger B battery.

Plug-in type terminals. It has plus, minus 3, minus 4 1/2, minus 16 1/2, minus 22 1/2 terminal markings.

Length, 4 1/8 inches; width, 2 1/2 inches; and height, 2 1/2 inches.

Packed 1 in a standard package.

Weight per standard package, 2 pounds.

No. 768.....each \$.98

No. 771 Eveready Radio C Batteries

Vertical Type, 4 1/2 Volts



A 4 1/2-volt unit, containing 3 cells provided with plug-in type terminals.

May be used in either the filament or A circuit, the plate or B circuit or the grid or C circuit.

A 4 1/2-volt C battery is sufficient with most tubes when B battery voltages of not over 80 or 90 volts are used, and the signal is ordinarily

loud. For B battery voltages up to 120 volts, from 6 to 9 volts of C battery gives better results.

Length, 4 1/2 inches; width, 1 3/32 inches; and height, 3 1/2 inches.

Packed 5 in a standard package.

Weight per standard package, 2 1/2 pounds.

No. 771.....each \$.35

No. KS-8089 Dry Battery Gauges



A well made instrument for quickly testing battery life. It is compact, easy to carry and use and is reliable.

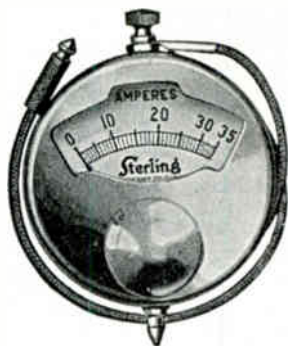
Designed by Bell Telephone Laboratories for use in testing No. 6 dry batteries used in telephone sets. It is manufactured to the specifications of and inspected by Western Electric Company. Has scale markings to show 0, 5, and 50% life remaining in dry batteries with separate scales for 2-cell and 3-cell batteries. Not arranged for testing single cells.

Pocket type, with cloth carrying bag with snap fasteners and equipped with Western Electric W2BM cord. Moving element has jeweled adjustable bearings and also has adjustable stops.

It will be necessary to allow a time interval of at least three minutes between consecutive readings in order to permit the winding to return to approximate room temperature. This instrument will be capable of withstanding a breakdown potential of 110 volts, a.c. applied between the cord clips and the case.

No. KS-8089.....each \$4.25

No. 24 Sterling Pocket Ammeters



This pocket ammeter is universally used for testing dry cells. It has 0-35 ampere scale, 1-ampere divisions.

This is a durable instrument, having correct scale calibration and a clearly marked dial.

Full nickel finish.

Packed in individual boxes and supplied in a standard package containing 10 boxes. Shipping weight, 3 pounds.

No. 24.....each \$1.25

Sterling Pocket Voltammeters



Packed 1 in a box, 10 boxes in standard package. Shipping weight, 3 pounds.

No. 44

Tests amperage of dry cell A batteries and voltage of both dry cell and storage A batteries; 0-35 amp. scale, 1-amp. divisions; 0-10 volt scale, 1/5-volt divisions.

No. 44.....each \$1.75

No. 45

Tests amperage of dry cell A batteries and voltage of either dry or storage B batteries up to 50 volts; 0-35 ampere scale, 1-ampere divisions; 0-50 volt scale, 1-volt divisions.

No. 45.....each \$3.00

No. 38A Sterling Voltmeters For Portable Radio Batteries



For testing 90-volt B batteries and 1.5-volt A batteries.

The flexible terminals, designed to fit any type of socket hole, prevent shorts and permit inclining of meter for convenient reading.

Scale, 0-100 volts, 5-volt divisions. Scale, 0-2 volts, 1/10 volt divisions.

Tests 45-volt and 90-volt B batteries and 1 1/2-volt A batteries.

No. 38A.....each \$2.75

No. 42A Sterling Graphic General Testers

For Portable Radio Batteries



Designed for servicemen and dealers for testing all portable A and B batteries with a single tester.

Red and green color chart for all standard batteries including 45-volt and 90-volt B batteries and 1.5-volt, 4.5-volt, 6-volt and 7.5-volt A batteries.

Flexible terminals for battery protection and convenient reading.

Scale, 0-100 volts for special sizes of B batteries, 5 volt divisions.

No. 42A.....each \$6.00

No. 86 Edwards Doorbell Transformers

Primary 115 Volts, 60-140 or 25-50 Cycles; 230 Volts, 60-140 Cycles
Secondary 10 Volts, 5 Watts

Schedule E



Has mounting feet so transformers may be used without outlet box in districts where such box is not required. May be inserted in either round or square plates and mounted on outlet boxes.

Underwriters' Listed.
Black finish.

No.....	86	86X	86Y
Each.....	\$.72	1.44	.84
Volts.....	115	115	230
Cycles.....	60-140	25-50	60-140
Standard Package.....	50	50	50
Approx. Wt., Std. Pkg.....	pounds 52	52	52

Edwards Tri-Volt Doorbell Transformers

Primary 115 Volts, 60-140 Cycles; 230 Volts, 60-140 Cycles

Secondary 6-12-18 Volts

Schedule E



Permits an exact selection of the secondary voltage required and has a slightly greater capacity than the ordinary bell-ringer.

Particularly adapted for unusually long lines.

No.....	874	874Y
Each.....	\$1.04	1.30
Volts.....	115	230
Cycles.....	60-140	60-140
Standard Package.....	20	20
Approx. Wt., Std. Pkg.....	lb. 27	27

Edwards Signaling Transformers

Primary 110 V., 60 Cycles
Secondary 4-8-12-16-20-24 Volts
Schedule T



Completely enclosed. Binding posts eliminate splicing, soldering, and taping. Nos. 88 and 90 are underwriters' listed. Forms own barrier between high and low voltage.

No.	*110-V. 60 Cy. Each	Watts	Ht. In.	Width In.	Length In.	Approx. Wt. Lb.
88	\$5.00	50	4 1/4	3 3/8	7 3/8	6
90	8.00	100	4 7/16	4 5/8	8 5/8	9 1/2
94	18.00	250	6	5 1/8	9 1/2	17
99	29.00	500	6 1/2	6 1/2	12 1/8	38
7194	38.50	750	6 1/2	7 1/2	14 1/2	42
7195	48.00	1000	6 1/2	9 3/4	14 1/2	58 1/4

*Ratings apply to the 24 volt tap; 110 volt primaries may be used on up to 130 volts. 220 volt primaries add 15% to list. For 25-cycle transformers, and 60% to list.

Prices on other special primary voltages on request.





Jefferson Wizard Bell Ringing Transformers

For residences or small flat buildings. Will operate door bells, buzzers, annunciators, and door openers. For 115 volts; 5 watts. Secondary, 10 volts. Size, 2x2x2½ in. Weight, 1 lb. No. 230-101, 50-60 Cycles.....each \$1.25 No. 230-102, 25-40 Cycles.....each 1.50

Jefferson Nucode Bell Ringing Transformers

With Round or Square Cover

Mounted on an outlet box cover. Round cover fits 3¼ and 4-inch octagon boxes; square cover fits 3¼ and 4-inch octagon and 4-inch square boxes.

Knockout in cover permits hanging a drop cord from same outlet box. Transformer wires do not interfere with lighting wires. Grounded to prevent shocks or possibility of fires.



No. 230-111

Depth, 2¼ inches; width, 2⅝ inches; height, 2¼ inches.

Cat. No.	Each	Style Cover	Capacity Watts	PRIMARY Volts	Cycles	Secondary Voltages	Wt. Lbs.
230-111	\$1.50	Round	5	115	50-60	10 1¼	1¼
230-112	2.00	Round	5	115	25-40	10 1¼	1¼
230-141	1.50	Square	5	115	50-60	10 1¼	1¼
230-142	2.00	Square	5	115	25-40	10 1¼	1¼

Jefferson Tri-Volt Bell Ringing Transformers



For 115 volts a.c. Generates 3 secondary voltages: 6, 12 and 18 and will take care of longer leads than Wizard or Nucode.

Capacity, 5 watts; dimensions 2x2½x3¼ inches. Weight 1½ pounds.

No. 230-121, for 50-60 Cycles...each \$1.50 No. 230-122, for 25-40 Cycles...each 2.00

Jefferson Standard Signaling Transformers

115 Volts, A.C.



Designed to operate all types of a.c. bells, horns, and other signaling systems including relays, lamps, annunciators, etc. Core and windings are hermetically sealed in a heavy metal case for protection against

moisture. Wiring compartments are provided for both primary and secondary connections.

All transformers have 4, 8, 12, 16, 20 and 24 volt secondary voltages.

Listed as standard by Underwriters' Laboratories, Inc.

No.	Each	Cap. V.A.	Cycles	Max. Sec. Current at Any Voltage Amp.	DIMENSIONS, IN.			Weight Pounds
					Depth	Width	Length	
231-101	\$6.00	50	50-60	2	4	4½	7½	7½
231-102	9.50	50	25-40	2	4¾	4½	7½	8
231-111	9.50	100	50-60	4	4¾	4½	7½	11¾
231-112	15.50	100	25-40	4	5½	4½	7½	13
231-141	22.00	250	50-60	10	5½	4½	7½	14¾
231-142	35.00	250	25-40	10	5½	5½	10	28
231-151	35.00	500	50-60	20	5½	5½	10	28
231-152	56.50	500	25-40	20	8½	6½	10¾	59
231-171	46.50	750	50-60	30	7½	5½	10½	35
231-172	75.00	750	25-40	30	8½	6½	10¾	84
231-181	58.00	1000	50-60	40	8½	6½	10¾	59
231-182	93.00	1000	25-40	40	8½	6½	12	99

For 230-volt transformers, add 15 per cent to above prices.

Transformers with primary circuit breaker; prices upon application.

No. 230-131 Jefferson Porcelain-Klad Transformers

115 Volts, 50-60 Cycles



Operates door bells, buzzers, annunciators and door openers in the average residence or small apartment building.

Porcelain covered transformer with a metal base for easy installation without the danger of breaking or chipping the case. Impervious to moisture or chemical fumes.

Size case, 3½x3½x1⅞ inches.

Secondary, 10 volts. Capacity, 5 watts.

Listed as standard by Underwriters' Laboratories, Inc.

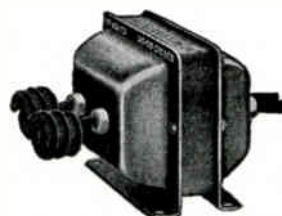
Not made for 230-volt or 25-40 cycles.

Weight, 1¾ pounds.

No. 230-131.....each \$1.50

Jefferson Low Voltage Transformers

115 Volts, 50-133 Cycles, A.C.



Designed for service wherever low voltage a.c. current is necessary, such as the operation of electrically controlled valves, thermostats, magnetic relays, etc.

Approved by the Underwriters' Laboratories, Inc.

Standard Types

No.	Each	Cap. V.A.	Secondary Voltages	Weight Pounds
630-101	\$3.50	15	8	1½
630-104	3.15	10	12	1¼
630-121	3.00	75	8	1
637-101	4.30	25	8, 16, 24	2
637-105	4.10	25	15	2
637-111	5.00	35	8, 16, 24	3½
637-121	6.00	50	8, 16, 24	3¾
637-131	7.35	75	8, 16, 24	4¾
637-161	8.70	100	8, 16, 24	5
637-171	11.60	150	8, 16, 24	7¾
637-181	14.20	200	8, 16, 24	11
637-191	17.20	250	8, 16, 24	12
637-201	4.10	25	24	2
637-211	4.75	35	24	3
637-221	5.70	50	24	3¾
637-231	7.00	75	24	4¾
637-261	8.25	100	24	5
637-271	11.00	150	24	7½
637-281	13.50	200	24	11
637-291	16.30	250	24	12
*637-251	6.50	50	6	4

Automatic Circuit Breaker Types

637-301	\$6.10	25	24	3
637-311	6.75	35	24	3¼
637-321	7.70	50	24	4
637-331	9.00	75	24	5
637-361	10.25	100	24	5½
637-371	13.00	150	24	7¾
637-381	15.50	200	24	11¼
637-391	18.30	250	24	12¾

*Equipped with primary cord and plug.

Jefferson Universal Toy Transformers

115 Volts, 50-60 Cycles, A.C.



No. 535-161

For electrical toy requirements.

The average change in voltage through the Jefferson dial control is approximately .15 volts. This fine regulation of voltage provides a steady flow of power, and while the current is being increased or decreased, this voltage does not drop back to zero to cause unsteady operation of the train or other electric device.

Equipped with an extension cord, separable attachment plug of non-breakable rubber and speedometer type name plate with arrow indicator dials.

Nos. 535-171, 535-181 and 535-191 have separate 9-volt taps for operating train whistles and accessories.

Approved by Underwriters' Laboratories, Inc.

No.	Each	Cap. Switch Watts	Secondary Voltages	Permanent Secondary Voltages	DIMENSIONS, IN.			Wt. Lb.
					Lgth.	Width	Ht.	
535-161	\$2.50	50	6 to 11	None	3 ⁵ / ₈	2 ³ / ₄	2 ³ / ₄	3
535-171	5.00	75	7 to 22	6 and 9	4	3 ⁵ / ₈	3 ¹ / ₄	4
535-181	6.50	100	8 to 25	8 and 9	4 ¹ / ₄	4 ¹ / ₂	3 ³ / ₄	5
*535-191	9.50	150	6 to 30	6-9 and 12	5 ¹ / ₂	5 ¹ / ₂	4	7 ¹ / ₄

*Equipped with thermal type circuit breaker which automatically interrupts the power to the track circuit when shorts or overloads occur.

All models except No. 535-191 can be furnished for 25-40 cycle primary. Prices furnished upon application.

Jefferson Auto Type Power Circuit Transformers

115 Volts, 60 Cycles, A.C.



Also known as single wound transformers, compensators or balance coils.

Application for making voltage transformations is limited.

May be installed in compliance with the National Electrical Code for purposes and under conditions as follows:

1. For derived lighting systems where the system supplied contains an identified ground wire which is solidly connected to a similar identified ground wire of the supply system.
2. For use in motor starters.
3. For supplying circuits wholly within apparatus which also contains the auto transformer.
4. For fixed voltage adjustment on existing unidentified power circuit.

Installations in which auto transformers are used as balance coils for derived lighting systems do not conform to the National Electrical Code.

No.	Each	Cap. Kva.	Secondary Voltages	DIMENSIONS, IN.			Weight Pounds
				Height	Width	Depth	
233-121	\$18.00	.250	230	9 ⁵ / ₈	3 ⁷ / ₈	3 ¹ / ₂	12
233-131	23.00	.500	230	10 ⁷ / ₈	4 ¹¹ / ₁₆	4 ¹ / ₄	19
233-141	28.00	.750	230	11 ¹ / ₂	4 ¹¹ / ₁₆	4 ¹ / ₄	24
233-151	32.00	1.0	230	13 ¹ / ₁₆	5 ¹ / ₈	6 ¹ / ₁₆	28
233-161	40.00	1.5	230	14 ⁹ / ₁₆	5 ¹ / ₈	6 ¹ / ₁₆	35
233-171	48.00	2.0	230	15 ³ / ₄	8 ¹ / ₁₆	7 ³ / ₈	43
233-181	60.00	3.0	230	17 ¹ / ₄	8 ¹ / ₁₆	7 ³ / ₈	50
233-201	84.00	5.0	230	18 ³ / ₄	8 ¹ / ₁₆	7 ³ / ₈	100
233-231	112.00	7.5	230	20	9	9 ³ / ₄	150
233-241	140.00	10.0	230	23	9	9 ³ / ₄	205
233-251	193.00	15.0	230	27	14 ¹ / ₈	11 ³ / ₈	277
233-271	291.00	25.0	230	26 ¹ / ₄	17 ¹ / ₂	15 ⁵ / ₈	375

Jefferson Double Wound Power Circuit Transformers

50-60 Cycles



This type of air cooled transformer has been very commonly used in railway service for lighting and signaling purposes. In addition it is required for signaling systems of schools, factories, mines, etc., for remote control switching, for lighting purposes, to operate low-voltage equipment from power lines, for insulating circuits from power and lighting supply lines, for emergency lighting systems, etc.

Illustration shows the standard type of double wound transformer which is equipped with wiring compartment for housing primary and secondary splices.

Knock-outs are provided for making connections with rigid or flexible steel conduit or for inserting porcelain bushings where open wiring is employed.

Complies with the A.I.E.E. specifications. Transformers complying with the A.R.A. specifications can be furnished on special order.

460-475 Primary Volts; 115-230 Secondary Volts

No.	Each	Cap. Kva.	DIMENSIONS, INCHES			Weight Pounds
			Height	Width	Depth	
240-301	\$13.00	.050	8 ⁵ / ₈	3 ⁷ / ₈	3 ¹ / ₂	4
240-311	15.00	.075	9	3 ⁷ / ₈	3 ¹ / ₂	5
240-321	17.00	.100	9 ⁵ / ₈	3 ⁷ / ₈	3 ¹ / ₂	6
240-331	21.00	.150	9 ¹ / ₂	4 ¹ / ₁₆	4 ¹ / ₄	11
240-341	25.00	.250	10 ⁷ / ₈	4 ¹¹ / ₁₆	4 ¹ / ₄	13
240-351	35.00	.500	13 ¹ / ₁₆	5 ¹ / ₈	6 ¹ / ₁₆	22
240-361	43.00	.750	14 ⁹ / ₁₆	5 ¹ / ₈	6 ¹ / ₁₆	28

230-460 Primary Volts; 115-230 Secondary Volts

240-401	\$51.00	1.0	15 ³ / ₄	8 ¹ / ₁₆	7 ³ / ₈	35
240-411	64.00	1.5	17 ¹ / ₄	8 ¹ / ₁₆	7 ³ / ₈	50
240-421	76.00	2.0	18 ¹ / ₂	8 ¹ / ₁₆	7 ³ / ₈	62
240-431	102.00	3.0	20	9	9 ³ / ₄	100
240-441	148.00	5.0	23	9	9 ³ / ₄	180
240-451	205.00	7.5	23 ³ / ₄	15	12 ³ / ₈	255
240-461	257.00	10.0	26 ¹ / ₄	17 ¹ / ₂	16 ⁷ / ₁₆	376
240-471	359.00	15.0	28 ¹ / ₄	20 ⁹ / ₁₆	16 ⁷ / ₁₆	531

230 Primary Volts; 115 Secondary Volts

240-101	\$12.00	.050	8 ⁵ / ₈	3 ⁷ / ₈	3 ¹ / ₂	7
240-111	14.00	.075	9	3 ⁷ / ₈	3 ¹ / ₂	8
240-121	16.00	.100	9 ⁵ / ₈	3 ⁷ / ₈	3 ¹ / ₂	9
240-131	19.00	.150	9 ¹ / ₂	4 ¹ / ₁₆	4 ¹ / ₄	11
240-141	23.00	.250	10 ⁷ / ₈	4 ¹¹ / ₁₆	4 ¹ / ₄	13
240-151	32.00	.500	13 ¹ / ₁₆	5 ¹ / ₈	6 ¹ / ₁₆	22
240-161	40.00	.750	14 ⁹ / ₁₆	5 ¹ / ₈	6 ¹ / ₁₆	28

575 Primary Volts; 115-230 Secondary Volts

240-601	\$53.00	1.0	15 ³ / ₄	8 ¹ / ₁₆	7 ³ / ₈	35
240-611	67.00	1.5	17 ¹ / ₄	8 ¹ / ₁₆	7 ³ / ₈	50
240-621	80.00	2.0	18 ¹ / ₂	8 ¹ / ₁₆	7 ³ / ₈	62
240-631	107.00	3.0	20	9	9 ³ / ₄	100
240-641	155.00	5.0	23	9	9 ³ / ₄	180
240-651	214.00	7.5	23 ³ / ₄	15	12 ³ / ₈	255
240-661	269.00	10.0	26 ¹ / ₄	17 ¹ / ₂	16 ⁷ / ₁₆	376
240-671	376.00	15.0	28 ¹ / ₄	20 ⁹ / ₁₆	16 ⁷ / ₁₆	531

Jefferson Mercury Lamp Transformers

60 Cycles

For H-1, 400-Watt and H-2, 250-Watt Lamps



Indoor Wall Type

A complete assortment—core and coil, standard indoor, weatherproof wall mounted and weatherproof pole mounted—for single (250 or 400-watt) or two-lamp (400-watt only) installations.

The two-lamp units are high power factor type, available in two styles indoor and weatherproof pole mounting equipped with threaded hubs for three fixture supports. Single lamp types can be supplied for either low or high power factor.

All types equipped with convenient wiring compartments, screw terminals, and simple primary tap changing arrangement for full voltage range—100-107-115 and 123 for 115-volt installations and 200-215-230 and 245 for 230-volt installations.

Tested and approved by Electrical Testing Laboratories; listed by Underwriters' Laboratories, Inc. Carriers the Underwriters' Re-Examination Service Label.



Weatherproof Pole Mounting Type

400-Watt, Indoor Type

For Wall Mounting and Fixture Suspension Installation

No.	Each	Cap. V.A.	Primary Voltages	Description	DIMENSIONS, INCHES			Weight Pounds
					Height	Width	Depth	
232-811	\$11.00	650	100/107/115/123	Normal Power Factor Transformer	12 ⁵ / ₁₆	5 ¹ / ₈	6	25 ¹ / ₄
232-813	11.00	650	200/215/230/245	Normal Power Factor Transformer	12 ⁵ / ₁₆	5 ¹ / ₈	6	25 ¹ / ₄
232-821	15.00	450	100/107/115/123	High Power Factor Transformer	12 ⁷ / ₁₆	5 ¹ / ₈	6	27 ³ / ₄
232-823	15.00	450	200/215/230/245	High Power Factor Transformer	12 ⁷ / ₁₆	5 ¹ / ₈	6	27 ³ / ₄

400-Watt, Weatherproof Outdoor Type

For Wall Mounting

232-611	\$12.00	650	100/107/115/123	Normal Power Factor Transformer	10 ³ / ₄	*6 ⁵ / ₁₆	...	29 ¹ / ₂
232-613	12.00	650	200/215/230/245	Normal Power Factor Transformer	10 ³ / ₄	*6 ⁵ / ₁₆	...	29 ¹ / ₂
232-621	16.00	450	100/107/115/123	High Power Factor Transformer	10 ³ / ₄	*6 ⁵ / ₁₆	...	30
232-623	16.00	450	200/215/230/245	High Power Factor Transformer	10 ³ / ₄	*6 ⁵ / ₁₆	...	30

400-Watt, Weatherproof Outdoor Flood Lighting Type

For Pole Mounting

232-711	\$15.00	650	100/107/115/123	Normal Power Factor Transformer	15	*6 ⁵ / ₁₆	...	31 ¹ / ₂
232-713	15.00	650	200/215/230/245	Normal Power Factor Transformer	15	*6 ⁵ / ₁₆	...	31 ¹ / ₂
232-721	19.00	450	100/107/115/123	High Power Factor Transformer	15	*6 ⁵ / ₁₆	...	32
232-723	19.00	450	200/215/230/245	High Power Factor Transformer	15	*6 ⁵ / ₁₆	...	32

With Fixture Mounting Support

232-741	\$18.00	650	100/107/115/123	Normal Power Factor Transformer	15	*6 ⁵ / ₁₆	...	33
232-743	18.00	650	200/215/230/245	Normal Power Factor Transformer	15	*6 ⁵ / ₁₆	...	33
232-751	23.00	450	100/107/115/123	High Power Factor Transformer	15	*6 ⁵ / ₁₆	...	34
232-753	23.00	450	200/215/230/245	High Power Factor Transformer	15	*6 ⁵ / ₁₆	...	34

400-Watt, Unenclosed Type

For Mounting in Ventilated Canopy or Cabinet

232-311	\$8.50	650	100/107/115/123	Normal Power Factor Transformer	5 ¹ / ₈	2 ⁷ / ₈	...	17 ¹ / ₂
232-313	8.50	650	200/215/230/245	Normal Power Factor Transformer	5 ¹ / ₈	2 ⁷ / ₈	...	17 ¹ / ₂

250-Watt, Indoor Type

For Wall Mounting and Fixture Suspension Installation

No.	Each	Cap. V.A.	Primary Voltages	Description	DIMENSIONS, INCHES			Weight Pounds
					Height	Width	Depth	
232-841	\$11.00	600	100/107/115/123	Normal Power Factor Transformer	12 ¹ / ₁₆	5 ¹ / ₈	6	25
232-843	11.00	600	200/215/230/245	Normal Power Factor Transformer	12 ¹ / ₁₆	5 ¹ / ₈	6	25
232-851	15.00	300	100/107/115/123	High Power Factor Transformer	12 ⁵ / ₁₆	5 ¹ / ₈	6	27 ¹ / ₂
232-853	15.00	300	200/215/230/245	High Power Factor Transformer	12 ⁵ / ₁₆	5 ¹ / ₈	6	27 ¹ / ₂

250-Watt, Unenclosed Type

For Mounting in Ventilated Canopy or Cabinet

232-341	\$8.50	600	100/107/115/123	Normal Power Factor Transformer	5 ¹ / ₁₆	4 ⁷ / ₈	2 ⁵ / ₈	17 ¹ / ₄
232-343	8.50	600	200/215/230/245	Normal Power Factor Transformer	5 ¹ / ₁₆	4 ⁷ / ₈	2 ⁵ / ₈	17 ¹ / ₄

Two-Lamp Transformers for H-1, 400-Watt Lamp

No.	Each	Cap. V.A.	Primary Voltages	Description	DIMENSIONS, INCHES			Weight Pounds
					Height	Width	Depth	
232-901	\$24.00	875	100/107/115/123	High Power Factor Transformer	20 ¹ / ₁₆	5 ¹ / ₈	6	46
232-903	24.00	875	200/215/230/245	High Power Factor Transformer	20 ¹ / ₁₆	5 ¹ / ₈	6	46
232-911	30.00	875	100/107/115/123	High Power Factor Transformer	23 ¹ / ₁₆	*6	...	56
232-913	30.00	875	200/215/230/245	High Power Factor Transformer	23 ¹ / ₁₆	*6	...	56

*Diameter.

Transformers for operation on 400-watt 50-cycle source available in full range of types.

Transformers for 440-volt 60-cycle source supplied to special order.

Transformers for operation on 250-watt 50-cycle source available in full range of types.

Jefferson Ferro-Tube Mercury Contacts



Showing Mounting Arrangement, Minimum Degree of Travel from "Off" to "On" Positions, and Method of Arranging Leads

Jefferson Ferro-Tube Mercury Contacts widen the field of application for mercury switches because of their sturdy construction and their ability to withstand severe mechanical operating conditions. Made of metal. The barrel of each contact is made of specially processed pure metal to prevent amalgamation with the mercury. Shock resisting ceramic insulators are used, so constructed as to insure mercury to mercury contact. Each tube is vacuumized to a high degree and charged with an inert gas under great pressure to quench any arc within the tube, and to promote cool operation under all conditions.

No.	Each	Type	RESISTIVE LOAD		D.C.		TYPE C LAMP LOAD		A.C.		D.C.		**A.C. INDUCTIVE LOAD		MINIMUM OPERATING ANGLE	Type of Barrel	No. of Leads	Diam. Inches	Length Inches				
			A.C.		Watts		Amp.		Watts		Amp.		Watts at 48% P. F.							Amp. at 125 Volts		Amp. at 250 Volts	
			Watts	¶Amp.	Watts	¶Amp.	Watts	¶Amp.	Watts	¶Amp.	Watts	¶Amp.	Watts	¶Amp.						Watts	¶Amp.	A°	B°
610-001	\$2.00	†SPST	1875	15	930	7.5	1250	10	625	5	900	15	7.5	5	8	Grounded	1	3/16	2				
610-002	2.10	†SPST	1875	15	930	7.5	1250	10	625	5	900	15	7.5	5	8	Grounded	2	3/16	2				
610-007	2.20	†SPST	1875	15	930	7.5	1250	10	625	5	900	15	7.5	5	8	Insulated	2	2 1/32	2 1/8				
*610-008	2.25	†SPST	1875	15	930	7.5	1250	10	625	5	900	15	7.5	5	9	Insulated	2	2 1/32	2 1/8				
610-011	1.95	†SPST	1250	10	625	5	925	7.5	450	3.5	600	10	5	9	9	Grounded	1	3/16	1 3/4				
610-012	2.00	†SPST	1250	10	625	5	925	7.5	450	3.5	600	10	5	9	9	Grounded	2	3/16	1 3/4				
610-013	3.40	†SPDT	1875	15	930	7.5	1250	10	625	5	900	15	7.5	6	6	Grounded	2	2 1/32	3 1/16				
610-014	3.60	†SPDT	1875	15	930	7.5	1250	10	625	5	900	15	7.5	6	6	Insulated	3	2 1/32	3 1/16				
610-015	4.40	‡CDT	1875	15	930	7.5	1250	10	625	5	900	15	7.5	9	9	Insulated	4	2 1/32	3 5/8				
610-017	2.10	†SPST	1250	10	625	5	925	7.5	450	3.5	600	10	5	9	9	Insulated	2	2 1/32	1 7/8				
*610-018	2.20	†SPST	1250	10	625	5	925	7.5	450	3.5	600	10	5	6	11	Insulated	2	2 1/32	1 7/8				
610-021	1.30	†SPST	500	4	250	2	.....	.....	.....	.....	240	4	2	8	13	Grounded	1	3/8	1 3/8
610-022	1.40	†SPST	500	4	250	2	.....	.....	.....	.....	240	4	2	8	13	Grounded	2	3/8	1 3/8
610-023	2.20	†SPDT	500	4	250	2	.....	.....	.....	.....	240	4	2	11	11	Grounded	2	3/8	2 1/4
610-024	2.35	†SPDT	500	4	250	2	.....	.....	.....	.....	240	4	2	11	11	Insulated	3	7/16	2 1/2
610-025	2.90	‡CDT	500	4	250	2	.....	.....	.....	.....	240	4	2	13	13	Insulated	4	7/16	3
610-027	1.45	†SPST	500	4	250	2	.....	.....	.....	.....	240	4	2	8	13	Insulated	2	7/16	1 1/2
610-031	1.35	†SPST	875	7	435	3.5	500	4	250	2	420	7	3.5	12	9	Grounded	1	7/16	1 1/16				
610-032	1.45	†SPST	875	7	435	3.5	500	4	250	2	420	7	3.5	12	9	Grounded	2	7/16	1 1/16				
610-033	2.30	†SPDT	875	7	435	3.5	500	4	250	2	420	7	3.5	12	12	Grounded	2	7/16	2 7/8				
610-034	2.45	†SPDT	875	7	435	3.5	500	4	250	2	420	7	3.5	12	12	Insulated	3	1 1/2	2 7/8				
610-035	3.00	‡CDT	875	7	435	3.5	500	4	250	2	420	7	3.5	13	13	Insulated	4	1 1/2	3 1/4				
610-037	1.50	†SPST	875	7	435	3.5	500	4	250	2	420	7	3.5	12	9	Insulated	2	1 1/2	1 1/16				

*Equipped with baffle to prevent splashing of mercury.

†Single pole single throw.

‡Single pole double throw.

§Two-circuit double throw.

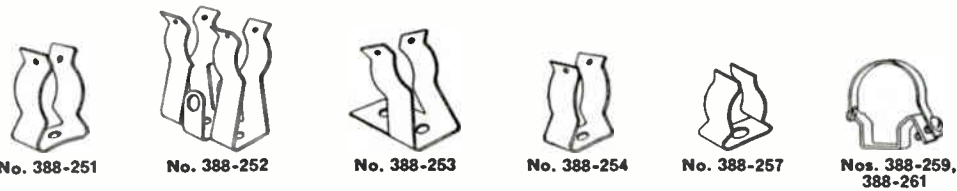
||Maximum operating voltage—440 volts a.c.; 250 volts d.c.

¶At 125 volts.

**Stalled rotor current of a.c. motors can be taken as eight times normal running current.

††Lowest power factor commonly experienced.

Mounting Clips and Clamps



No.	For Use with Contact	Per 100
388-251	610-007, -008, -014, -015, -017, -018	\$3.00
388-252	610-001, -002, -007, -008, -011, -012, -013, -014, -015, -017, -018	15.00
388-253	610-001, -002, -007, -008, -011, -012, -013, -014, -015, -017, -018	15.00
388-254	610-001, -002, -011, -012, -013	3.00
388-257	610-034, -035, -037	3.00
388-259	610-007, -008, -014, -015, -017, -018	15.00
388-261	610-037	15.00

Jefferson Luminous Tube Sign Transformers

Designed for use in all types of portable or fixed, indoor or outdoor neon signs. The complete assortment of models provides a transformer to meet the most exacting requirements, both as to electrical and mechanical details.

Mid-point grounded, balanced design patented construction and many other improvements insure perfect secondary current regulation regardless of length of tubing operated, high efficiency permitting long



Nos. 721-111 and 721-121

tube lengths, cool operation, quietness, long life, neat appearance, and lightness in weight.

The case in which transformer is assembled is made of extra heavy rust-resisting steel, flanged construction and with substantial brackets, insuring rugged construction. Binding posts and nuts are cadmium-plated to guard against corrosion, while the case is black enameled, baked thoroughly to present a tough and durable finish.

115 Volts, 60 Cycles

Binding Posts Standard (One at Each End of Case)

No.	Each	Cap. V.A.	SECONDARY Volts	MA.	Length	Width	Height	Approx. Ship. Weight Pounds
721-811	\$17.50	650	15000	45	16 1/4	5 7/16	7 3/16	56
721-111	14.00	450	15000	30	14 3/4	4 3/4	6 1/2	31
721-311	13.20	270	15000	18	14 3/4	4 3/4	6 1/2	27 1/2
721-821	15.00	500	12000	45	14 3/4	4 3/4	6 1/2	34
721-121	13.20	360	12000	30	14 3/4	4 3/4	6 1/2	30
721-221	11.10	250	12000	24	13 1/4	4 3/4	3 3/2	19 1/2
721-321	11.10	200	12000	18	13 1/4	4 3/4	3 3/2	20
721-841	13.40	375	9000	45	14 3/4	4 3/4	6 1/2	34
721-141	10.70	250	9000	30	13 1/4	4 3/4	3 3/2	19 1/2
721-341	8.80	190	9000	18	11 5/8	3	4 1/2	14
721-851	13.00	330	7500	45	12 7/8	4	4 5/8	25
721-151	10.40	225	7500	30	13	4 3/4	3 3/2	19
721-351	8.10	150	7500	18	11 5/8	3	4 1/2	13
721-831	10.70	250	6000	45	12 7/8	3 1/4	4 5/8	18 1/4
721-131	8.60	180	6000	30	11 5/8	3	4 1/2	14
721-331	7.70	140	6000	18	11 5/8	2 3/4	4 1/2	12
721-861	10.40	235	5000	45	12 7/8	3 1/4	4 5/8	18 1/2
*721-161	8.40	150	5000	30	9	4 3/8	5	13
*721-361	6.10	100	5000	18	9 1/4	3 1/2	4 3/4	9 3/4
721-871	8.60	190	4000	45	11 5/8	3	4 1/2	17
*721-171	6.10	140	4000	30	8 3/8	3 3/2	4 3/4	9 1/2
*721-371	5.70	90	4000	18	8 3/8	3 3/2	4 3/4	8 1/2
*721-891	8.00	150	3000	45	9	4 3/8	5	13
*721-191	5.80	100	3000	30	8 3/8	3 3/2	4 3/4	9
*721-391	5.60	75	3000	18	8 3/8	3 3/2	4 3/4	8
*721-381	5.20	50	2000	18	8 3/8	3 3/2	4 3/4	7

Binding Posts Standard (Both at One End of Case)

721-111X	\$14.00	450	15000	30	12 1/2	5 5/8	5 5/8	31
721-121X	13.20	360	12000	30	12 1/2	5 5/8	5 5/8	30
721-221X	11.10	250	12000	24	13	4 3/4	3 7/8	19 1/2
721-141X	10.70	250	9000	30	13	4 3/4	3 7/8	19 1/2

115 Volts, 25 Cycles

Binding Posts Standard (One at Each End of Case)

721-112	\$22.40	450	15000	30	16 1/4	5 7/16	7 3/16	53
721-122	21.10	360	12000	30	16 1/4	5 7/16	7 3/16	47
721-222	17.80	250	12000	24	14 3/4	4 5/16	6 1/2	31
721-142	17.10	250	9000	30	14 3/4	4 5/16	6 1/2	34
721-162	13.40	150	5000	30	11 5/8	4 3/16	5 1/16	21

Thin Types

115 Volts, 60 Cycles

Binding Posts Standard (One at Each End of Case)

725-121	\$13.20	360	12000	30	12 7/8	4	4 5/8	25
725-221	11.10	250	12000	24	12 7/8	3 1/4	4 5/8	19
725-141	10.70	250	9000	30	12 7/8	3 1/4	4 5/8	18 1/2
725-341	8.80	190	9000	18	12 7/8	3 1/4	4 5/8	16 1/2
725-151	10.40	225	7500	30	12 7/8	3 1/4	4 5/8	18

High Intensity Types

115 Volts, 60 Cycles

Binding Posts Standard (One at Each End of Case)

721-411	\$19.60	825	15000	60	16 1/4	5 7/16	7 3/16	60
721-421	18.00	720	12000	60	16 1/4	5 7/16	7 3/16	56
721-441	15.00	500	9000	60	14 1/2	5 3/4	6 3/8	38
†721-451	13.70	450	7500	60	14 3/4	4 3/4	6 1/2	31
†721-431	13.20	360	6000	60	14 3/4	4 3/4	6 1/2	30
†721-461	11.70	300	5000	60	14 3/4	4 3/4	6 1/2	28 1/2
721-471	10.50	250	4000	60	13 1/4	4 3/4	3 3/2	19 3/4
721-491	8.60	180	3000	60	13 1/4	4 3/4	3 3/2	17

*These are not mid-point grounded balanced design.
†Stream lined case.

High Power Factor Types

115 Volts, 60 Cycles

Binding Posts Standard (One at Each End of Case)

No.	Each	Cap. V.A.	SECONDARY Volts	MA.	Length	Width	Height	Approx. Ship. Weight Pounds
724-411	\$27.60	450	15000	60	16 1/4	5 7/16	7 3/16	60
724-421	26.00	400	12000	60	16 1/4	5 7/16	7 3/16	59
724-441	20.00	275	9000	60	14 1/2	5 3/4	6 3/8	37
†724-451	18.10	250	7500	60	14 3/4	4 3/4	6 1/2	31 1/2
†724-431	17.40	200	6000	60	14 3/4	4 3/4	6 1/2	31
†724-461	16.10	150	5000	60	14 3/4	4 3/4	6 1/2	32
724-471	14.70	120	4000	60	14 1/4	4 3/4	4 3/8	19 3/4
724-491	12.80	100	3000	60	14 1/4	4 3/4	4 3/8	19 3/4
724-811	25.50	360	15000	45	16 1/4	5 7/16	7 3/16	56
724-111	18.00	250	15000	30	14 3/4	4 3/4	6 1/2	31 1/2
724-311	17.20	175	15000	18	14 3/4	4 3/4	6 1/2	31 1/2
724-821	22.80	275	12000	45	14 1/2	5 3/4	6 3/8	38
724-121	17.20	200	12000	30	14 3/4	4 3/4	6 1/2	31
724-221	15.10	150	12000	24	13 1/4	4 3/4	4 3/8	22
724-321	15.10	150	12000	18	13 1/4	4 3/4	4 3/8	19 3/4
724-841	18.00	210	9000	45	13 1/4	4 3/4	6 3/16	31 1/2
724-141	14.70	150	9000	30	13 1/4	4 3/4	4 3/8	22 1/2
724-341	12.80	110	9000	18	13 1/4	4 3/4	4 3/8	22
724-851	17.20	180	7500	45	13 1/4	4 3/4	6 3/16	31 1/2
724-151	14.10	125	7500	30	13 1/4	4 3/4	4 3/8	27
724-351	11.50	90	7500	18	13 1/4	4 3/4	4 3/8	18
724-831	14.90	140	6000	45	13 1/4	4 3/4	4 3/8	19 3/4
724-131	12.30	100	6000	30	13 1/4	4 3/4	4 3/8	22
724-331	11.10	75	6000	18	13 1/4	4 3/4	4 3/8	18
724-861	14.60	125	5000	45	13 1/4	4 3/4	4 3/8	19 3/4
*724-161	12.10	90	5000	30	8 7/8	4 1/2	5	16 1/2
*724-361	9.50	60	5000	18	9 1/4	3 1/2	5 3/4	13
724-871	12.30	105	4000	45	13 1/4	4 3/4	4 3/8	19 3/4
*724-171	9.60	75	4000	30	9 1/4	3 1/2	5 3/4	11
*724-371	8.90	55	4000	18	9 1/4	3 1/2	5 3/4	10
*724-891	11.70	85	3000	45	9 1/4	3 1/2	5 3/4	14
*724-191	9.30	60	3000	30	9 1/4	3 1/2	5 3/4	11
*724-391	8.80	45	3000	18	9 1/4	3 1/2	5 3/4	10

Weatherproof Types

115 Volts, 60 Cycles

722-411	\$23.60	825	15000	60	6 1/4	6 1/4	15	72
722-811	21.50	650	15000	45	6 1/4	6 1/4	15	68
722-111	18.00	450	15000	30	6 1/4	6 1/4	15	52 1/2
722-421	22.00	720	12000	60	6 1/4	6 1/4	15	70
722-821	19.00	500	12000	45	6 1/4	6 1/4	15	68
722-121	17.20	360	12000	30	6 1/4	6 1/4	15	51
722-221	15.10	250	12000	24	6 1/4	6 1/4	15	46
722-441	19.00	500	9000	60	6 1/4	6 1/4	15	51
722-841	17.40	375	9000	45	6 1/4	6 1/4	15	52 1/2
722-141	14.70	250	9000	30	6 1/4	6 1/4	15	48 1/2
722-451	17.70	450	7500	60	6 1/4	6 1/4	15	51
722-851	17.00	330	7500	45	6 1/4	6 1/4	15	51
722-151	14.40	225	7500	30	6 1/4	6 1/4	15	47

Core and Coil Types

115 Volts, 60 Cycles

Unenclosed (6-Inch Primary and Secondary Leads)

720-351	\$6.00	150	7500	18	8 1/4	2 1/16	3 1/8	7 1/2
720-331	5.50	140	6000	18	3 3/4	2 1/16	4 5/8	6
*720-361	4.80	100	5000	18	3 3/4	2 1/16	4 5/8	6
*720-371	4.50	90	4000	18	3 3/4	2 1/16	4 5/8	5
*720-391	3.25	75	3000	18	3 1/16	2 1/2	3 3/4	4
*720-381	2.85	50	2000	18	3 1/16	2 1/8	3 3/4	3

Jefferson Indoor Luminous Tube Sign Transformers

115 Volts, 60 Cycles



Type 726 with Hanging Bracket

Designed to meet the requirements of the National Electric Code and Underwriters' Laboratories, Inc. The compactness of the streamlined case and the convenient end compartments make this line adaptable to every type of indoor luminous sign.

Two groups of transformers are available—Series No. 728 having secondary spring contact electrode housings, and Series No. 726 with secondary cables. Transformers in either series are furnished with or without 3-conductor cord and 2-prong plug with means for grounding, and primary pull switch.

There are no exposed live metal parts in the high tension secondary circuit. Primary connections are screw terminals, panel-mounted, inside the end compartment. No soldering is required. Removal of end caps exposes the wiring compartments for easy and quick wiring. A combination knock-out and bushing in top of case provides for primary current entry through cord and plug, or through flexible or rigid conduit.

Hanging brackets, which prevent swinging movement of transformer and tubing, are furnished as standard equipment. Mounting supports for Series No. 728 are also available when it is desired to use the transformer and tubing in standing position.

Furnished in gray finish, hammered metal in appearance.

Jefferson Oil Burner Ignition Transformers

115 Volts, 60 Cycles, A.C.



Nos. 638-171, 638-251, 638-261 and 638-271



No. 638-281

The introduction of various types of burners has required the development of different types of transformers. This is a transformer for every specific application—5000, 10000, 12000 and 15000-volt ratings; for intermittent and continuous service; grounded, mid-point grounded, balanced mid-point grounded, and insulated secondaries; and in core and shell type designs.

The cool operation is accomplished by exacting requirements, liberal design throughout, plus the use of quality materials of adequate size which results in long transformer life.

Equipped with built-in radio barrier to eliminate the possibility of objectionable radio interference.

Nos. 638-251, 638-261, 638-271 and 638-171 are assembled in the new streamlined case. This case is of heavy drawn steel of exceptional durability, treated to resist rust and finished in a high lustre long-wearing black enamel. All other types are assembled in similarly rugged and attractive cases of standard design. Universal mounting brackets of sturdy design are provided.

A junction box of liberal proportions is built into the top of the case. Knockouts are provided in two sides and in the end of the case for convenient entrance. Quick and easy splicing results and there is ample space for additional wiring which any installation may require. Primary leads 24 inches long are standard on all types.

With Electrode Housings

No.	Each	Cap. V.A.	SECONDARY Volts	MA.	DIMENSIONS, IN.			Weight Pounds
					Length	Width	Height	
728-221	\$15.10	250	12000	24	15½	3¾	6	31
728-141	14.20	250	9000	30	15½	3¾	6	31
728-341	13.20	190	9000	18	15½	3¾	6	19
728-151	14.10	225	7500	30	15½	3¾	6	18
728-351	12.10	150	7500	18	15½	3¾	6	15
728-131	13.10	180	6000	30	15½	3¾	6	15
728-331	11.50	140	6000	18	15½	3¾	6	14
728-161	11.70	150	5000	30	15½	3¾	6	15
728-361	10.40	100	5000	18	15½	3¾	6	14

With 3-Foot Secondary Cables

No.	Each	Cap. V.A.	SECONDARY Volts	MA.	Length	Width	Height	Weight Pounds
726-221	\$15.10	250	12000	24	15½	3¾	6	31
726-141	14.20	250	9000	30	15½	3¾	6	31
726-341	13.20	190	9000	18	15½	3¾	6	19
726-151	14.10	225	7500	30	15½	3¾	6	18
726-351	12.10	150	7500	18	15½	3¾	6	15
726-131	13.10	180	6000	30	15½	3¾	6	15
726-331	11.50	140	6000	18	15½	3¾	6	14
726-161	11.70	150	5000	30	15½	3¾	6	15
726-361	10.40	100	5000	18	15½	3¾	6	14

With Electrode Housings

No.	Each	Cap. V.A.	SECONDARY Volts	MA.	Length	Width	Height	Weight Pounds
728-111	\$16.60	450	15000	30	16½	6¼	7½	33
728-121	15.60	360	12000	30	16½	6¼	7½	32

With 3-Foot Secondary Cables

No.	Each	Cap. V.A.	SECONDARY Volts	MA.	Length	Width	Height	Weight Pounds
726-111	\$16.60	450	15000	30	16½	6¼	7½	33
726-121	15.60	360	12000	30	16½	6¼	7½	32

Series No. 728 may be used as hanging or standing type—standing brackets No. 728-001 supplied at slight additional cost. Series No. 726 is for hanging only, with eyelet supports for glass tubing.

For transformers of High Power-Factor type, add numeral "4" to catalog number—example: 728-4111 for 15000 volt 30 M.A. type.

No.	Each	Cap. V.A.	SECONDARY Volts	MA.	Type of Core	Max. Gap Setting of Inches	No. Sec.	Weight Pounds
Grounded								
*638-281	\$9.25	125	5000	18	Shell	¼	1	9
Insulated								
*638-191	\$9.25	125	5000	18	Shell	¼	2	9
Grounded								
638-171	\$11.25	250	10000	23	Core	¾	1	14
Mid-Point Grounded								
638-251	\$11.25	250	10000	23	Core	¾	2	14
Mid-Point Grounded								
638-231	\$11.25	250	10000	23	Core	¾	2	15
Insulated								
638-261	\$11.25	250	10000	23	Core	¾	2	14
Mid-Point Grounded								
638-271	\$12.15	250	12000	20	Core	¼	2	14
Mid-Point Grounded (2)								
638-291	\$15.30	450	15000	30	Shell	⅛	2	22
Mid-Point Grounded								
638-321	\$11.25	250	10000	23	Core	¾	2	12½
Mid-Point Grounded								
638-211	\$11.25	250	10000	23	Core	¾	2	14
Dual								
638-221	\$15.30	250	12000	20	Shell	⅛	2	14
Grounded								
638-181	\$10.10	150	6000	20	Core	¼	1	9

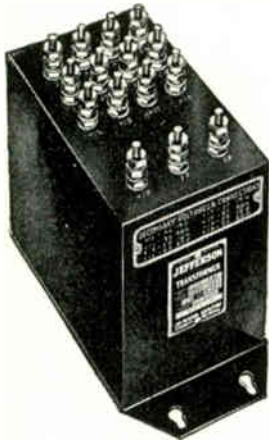
*Not equipped with radio filter.

These transformers are obtainable in other voltages and frequencies at extra cost. Prices upon application.

Jefferson Railway Transformers

Indoor Type

For Signal, Lighting and Rectifier Service



Designed to conform to the testing and constructional specifications of the American Railway Association. Intended for use in the operation of electrical equipment incidental to railway signal systems such as signal lights, battery rectifiers, relays and associated requirements.

This is an air cooled unit designed for wall or shelf mounting.

Windings developing or carrying 115 volts or less are brought out to standard A.R.A. terminals mounted on an attractive bakelite panel. Windings carrying in excess of 115 volts are brought out

of the housing in the form of flexible leads which are terminated in connecting lugs.

Generally, compensating taps are supplied on the primaries, although for some services, special auto transformer taps are furnished. When compensating taps are furnished, they are full of capacity rating.

Primary windings of 115 volts or less and all secondary windings are insulated to withstand a dielectric strength test of 3000 volts. Primary windings in excess of 115 volts are designed to withstand a dielectric strength test of 10000 volts.

Name plates and winding diagrams are furnished with each transformer which give the complete information required by the A.R.A. standards.

The following table outlines a number of the more popular types of transformers furnished for these services. These transformers fulfill practically all signalling system requirements, although in many cases transformers of special specifications are supplied.

50-100 Cycles; 115-100 Primary Volts

Lighting Type

Cat. No.	*Each	Cap. V.A.	No. of Sec.	SECONDARY Voltages and Tap Positions	Cap Amps.	APPROX. DIMEN., IN. APPROX.			
						Ht.	Wall Space	Wt. Lbs.	
236-101	\$8.00	50	1	16(12-1-3)	3.0	5 1/2	5	x5	12
236-111	12.25	100	1	16(12-1-3)	6.0	7 1/4	9 1/4	x3 3/4	20
236-121	16.50	160	2	15(6-6-1-1-1)	5.3	7 1/4	9 1/4	x4 3/4	25
236-131	15.75	200	1	15(5-7-3)	14.0	7 1/4	9 1/4	x4 3/4	26

Universal Rectifying Type

236-141	\$17.50	200	4	26(19-1-5)	2.0	7 1/4	9 1/4	x4 3/4	26
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Universal Rectifying and Lighting Type

236-151	\$18.65	2-40	1	15(4-8-1-1-1)	10.7	7 1/4	9 1/4	x4 3/4	27
			1	25(19-1-5)					
			2	6(5-1)					

Track Type

236-161	\$17.85	300	1	.37-17 in	17.9	7 1/4	9 1/4	x4 3/4	29
				45 Equal Steps					
236-171	19.35	300	2	.37-17 in	9.0	7 1/4	9 1/4	x4 3/4	30
				45 Equal Steps					
236-181	27.50	600	2	.37-17 in	17.9	9 1/4	10	x7 1/2	47
				45 Equal Steps					
236-191	31.25	600	4	.49-17 in	9.0	9 1/4	10	x7 1/2	51
				35 Equal Steps					

*For 230-200, 460-400 or 575-500 primary volts, add 20%. Can also be furnished in 25-40 cycles. Prices and data upon application.

G-E Tungar Rectifier Bulbs



No. 289881



Nos. 195528 and 206501



Nos. 277465 and 12x825



Nos. 189048 and 189049



No. 217283



No. 199698



No. 20x672



No. 76x13



No. 45x674

These bulbs are filled with 99.8% pure Argon gas. This gas undergoes five different additional treatments to remove impurities. Silver-colored magnesium coating on the inside absorbs impurities given off during operation.

Half Wave, Argon

No.	Each	RECOMMENDED MAXIMUM OUTPUT		Socket No.	Approx. Ship. Weight Pounds
		D.C. Amps.	D.C. Volts		
289881	\$4.00	0.5	7.5	278768	5/16
195528	4.00	2.0	60	Std. Edison	5/16
277465	4.00	2.0	60	278768	5/16
12x825	4.00	2.0	75	278768	5/16
206501	4.00	2.0	75	Std. Edison	5/16
189048	5.00	6.0	60	217967	9/16
189049	5.00	6.0	90	217967	9/16
217283	10.00	15.0	60	217967	1 3/16
199698	\$5.00	2/0.5	7.5/30	Std. Edison	5/16
Half Wave Mercury, Argon					
20x672	\$5.00	5.0	15	K3778926	3/8
76x13	15.00	20.0	60	217967	1 1/4
Full Wave, Mercury					
16x897	\$8.00	2.0	250	M5556072G1	1 3/16
45x674	15.00	6.0	250	M5556072G1	1 3/16

G-E Small Tungar Battery Chargers

For the Home Garage
60 Cycles, 115 Volts, A.C.

Nos. 6RB26A1 and 3126530



No. 6RB26A1

No. 3126530

No. 6RB26A1.—At average rates this charger charges a 6-volt battery overnight for a few cents. Furnished with a c. cordset and special receptacle which can be attached to steering post of car. To charge the battery simply plug into a.c. outlet and steering post receptacle.

No. 3126530.—For 6-volt battery charging applications where heavy-duty model is required. Furnished with a.c. and d.c. leads.

Cat. No.	Each	Cat. No. Bulb	Amps. D.C.	DIMENSIONS, INCHES			Ship. Wt. Lb.
				Height	Width	Depth	
6RB26A1	\$10.50	20X672	5	9 $\frac{5}{8}$	4 $\frac{3}{4}$	5 $\frac{3}{4}$	13
3126530	18.50	189048	6	18 $\frac{3}{4}$	5 $\frac{11}{16}$	5	28

No. 3049336



Cat. No.	Each	Cat. No. Bulb	Amps. D.C.	DIMENSIONS, INCHES			Ship. Wt. Lb.
				Height	Width	Depth	
3049336	\$9.50	289881	$\frac{1}{2}$	6	6 $\frac{1}{4}$	2 $\frac{1}{2}$	10

Nos. 277153 and 3049323, Radio Type



No. 277153

Nos. 277153 and 3049323, Radio Type.—For charging wet A or B radio batteries. Equipped with taps for several lower charging rates. Furnished with a.c. and d.c. leads.

Cat. No.	Each	Cat. No. Bulb	Amps. D.C.	DIMENSIONS, INCHES			Ship. Wt. Lb.
				Height	Width	Depth	
277153	\$13.50	277465	2	7 $\frac{1}{2}$	5 $\frac{1}{2}$	7 $\frac{1}{4}$	17
3049323	18.50	189048	5	8 $\frac{1}{4}$	7	8 $\frac{3}{4}$	33

All chargers furnished with proper Tungar bulb; price includes bulb.

Similar outfits for other voltages and frequencies are available.

G-E Tungar Battery Chargers

Form A—Autotransformer—Garage Type
A.C., Volts: Normal, 115—Limits, 105/125

Nos. 6RB33B1 and 6RB33B2—Half Wave
60 Cycles



No. 6RB33B1

Recommended for the use of repair shops, car dealers, garages, service stations, and tire dealers.

Single dial switch control turns on a.c. and regulates charging rate. Silver-plated a.c. switch contacts for long life and trouble-free service. Fuse protection for battery and Tungar bulb.

Overall dimensions: height, 10 $\frac{1}{2}$ inches; depth, 7 $\frac{5}{8}$ inches; width, 18 $\frac{1}{2}$ inches.

Finished in red and white acid-resisting finish.

Shipping weight, 36 pounds.

Cat. No.	6RB33B1	6RB33B2
Each	*\$29.50	†\$36.00
Capacity No. of Batteries	6	12

*Includes one No. 189048 Tungar bulb.
†Includes one No. 189049 Tungar bulb.

No. 6RB6B1—6-12—Full Wave

50/60 Cycles

Recommended for the use of garages, service stations and repair shops.

This tungar charges six 6-volt batteries at 12 amperes or twelve 6-volt batteries at 6 amperes or the equivalent.

New, easy-to-read meters. Two plug-in control panels regulate the charging rate to permit charging at a fast or slow rate or a combination of both.

Overall dimensions: height, 20 $\frac{7}{8}$ inches; depth, 9 $\frac{5}{8}$ inches; width, 11 $\frac{1}{2}$ inches.

Finished with red lacquered case and ivory enameled panel.

Shipping weight, 63 pounds.
Price includes two No. 189048 Tungar bulbs.

No. 6RB6B1.....each \$66.00

No. 6RB6B5—12-24—Full Wave

50/60 Cycles

Recommended for the use of large garages, fleet owners and super service stations.

This tungar charges twenty-four 6-volt batteries at 6 amperes or twelve at 12 amperes or the equivalent. Provides fast, one-day charging service.

New, easy-to-read meters. Charges at a fast rate, slow rate, or a combination of both.

Overall dimensions: height, 20 $\frac{7}{8}$ inches; depth, 9 $\frac{5}{8}$ inches; width, 11 $\frac{1}{2}$ inches.

Finished with red lacquered case and ivory enameled panel.

Shipping weight, 88 pounds.
Price includes two No. 189049 Tungar bulbs.

No. 6RB6B5.....each \$79.50

Similar outfits for other voltage and frequencies are available.

G-E Half Wave Tungars

For Charging Clock, Signal, Control Batteries, Etc.

Form B—Insulated Transformer
60 Cycles, 115 Volts, A.C.

No. 204170—24-30-Volt, 0.5-2.5-Ampere



Nos. 204170 and 199717

A simple, compact, half-wave outfit designed to charge from 9 to 12 cells at an adjustable rate 0.5 to 2.5 amperes. Adjustment is obtained by means of two secondary taps used in conjunction with a 6-ohm resistance.

Supplied in a neat casing arranged for wall, panel, or bench mounting. A hinged cover allows easy access to bulb, resistance and transformer. No instruments are provided, since

they are not generally required on applications where this outfit is used.

Full-load efficiency, 55%. Power-factor, 50%.

Approximate dimensions: height, 9 $\frac{1}{8}$ inches; width, 6 $\frac{3}{8}$ inches; depth, 8 $\frac{3}{4}$ inches.

Uses one No. 195528 bulb.

Approximate shipping weight, 25 pounds.

No. 204170.....each \$36.00

No. 199717—40-50-60-Volt, 0.5-2.5-Ampere

This tungar is similar in construction to No. 204170, except it has a wider d.c. voltage range. Three taps on the secondary, in conjunction with an adjustable resistance, provide full adjustment of charging rate from 0.5 to 2.5 amperes at 40, 50, or 60-battery volts. Very liberally designed throughout. Will charge up to 75 volts at 1.5 amperes.

Full-load efficiency, 60%. Power-factor, 50%.

Approximate dimensions: height, 9 $\frac{1}{8}$ inches; width, 6 $\frac{3}{8}$ inches; depth, 8 $\frac{3}{4}$ inches.

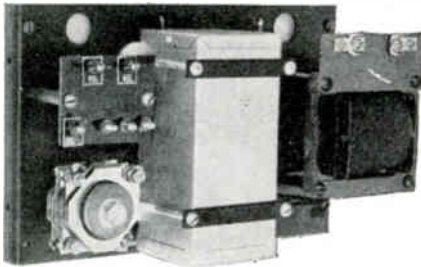
Uses one No. 189049 bulb.

Approximate shipping weight, 29 pounds.

No. 199717.....each \$41.00

G-E Copper Oxide Rectifiers

For Telephone Service



Designed to deliver a noiseless d.c. of 6 volts, 0.350 amperes. There is a multitude of applications that come within this rating. A few of them are as follows:

New apartment house interphone systems; replace batteries (dry cell or storage batteries) on existing apartment house interphone systems; school interphone systems that come within rated output of this outfit; to supply power for way station telephones on railroad telephone lines; to supply power for local sounders on railroad telegraph lines—the smooth, humless d.c. obtained from this outfit (oscillograph shows no ripple) is praised by Morse code operators—any general application where d.c. not in excess of the rated output is desired.

This rectifier consists of a copper oxide rectifying unit, transformer and necessary specially constructed filter (condenser and choke coil) all mounted on a steel base plate and enclosed in a rugged casing. Casing has an attractive crystallized green finish, which will not chip or mar.

Terminals are provided to supply a small amount of a.c. at 6, 12 or 18 volts for bell ringing.

Rating: 115 volts a.c.; 60 cycles; 6 volts d.c., 0.350 ampered.c.

Approximate shipping weight, 21 pounds.

No. 6RC61D4.....each \$33.00

G-E Full-Wave Tungars

For Charging Telephone Batteries

Form B—Insulated Transformer—Noiseless Type
50/60 Cycles, 115 Volts, A.C.

No. 6RB6B17—6-65-Volt, 2-12-Ampere



With External Filter Reactance

This tungar when used in conjunction with No. 3126680 external filter reactance makes an excellent combination for float charging telephone batteries. The wide range of charging obtainable with this combination has made it popular for small, medium, and large size telephone exchanges.

In small and medium size exchanges where motor-generator sets are now in service, this combination tungar and reactance

is often used to supplement the motor-generator set especially during low load periods. This combination is particularly desirable for this purpose during week ends in those exchanges where a charging rate of 12 amperes or less is sufficient. This enables shutting down the motor-generator set and operating during this period at the much higher efficiency obtained from the tungar.

Employs the plug type control which simplifies balancing both sides of the outfit, as a visual indication of the settings on each side is given. An ammeter is provided on each side which further simplifies operation of the outfit.

Two or more outfits are often connected in parallel to obtain charging rates above 12 amperes. The full load efficiency is approximately 74% when used in conjunction with No. 3126680 reactance.

Approximate dimensions: height, 19 $\frac{7}{8}$ inches; width, 11 $\frac{1}{2}$ inches; depth, 11 $\frac{3}{8}$ inches.

Uses two standard 6-ampere tungar bulbs, No. 189049.

Approximate shipping weight, 103 pounds.

No. 6RB6B17.....each \$110.00

No. 3126680 External Filter Reactance for Use with 12-Ampere Full-Wave Tungars

Used with 12-ampere full-wave tungars.

Height, 10 $\frac{1}{2}$ inches; width, 6 $\frac{1}{2}$ inches; depth, 7 $\frac{3}{4}$ inches.

Shipping weight, 73 pounds.

No. 3126680.....each \$33.00

No. 6RB6B14—6-36-Volt, 2-12-Ampere



No. 6RB6B14.....each \$81.00

This tungar is similar to No. 6RB6B17, the only difference being in the rated output voltage. When used in combination with No. 3126680 reactance it is adaptable to charging telephone batteries of 3 to 16 cells at an adjustable rate of 2 to 12 amperes. The plug type of control is used and two ammeters are provided. Incorporates all the features of the No. 6RB6B17 outfit.

Approximate dimensions: height, 19 $\frac{7}{8}$ inches; width, 11 $\frac{1}{2}$ inches; depth, 9 $\frac{5}{8}$ inches.

Uses two No. 189048 bulbs.

Approximate shipping weight, 69 pounds.

G-E Full-Wave Tungars

For Charging Telephone Batteries

Form B—Insulated Transformer—Noiseless Type
60 Cycles, 115 Volts, A.C.

No. 244708—30-Volt, 0.3-0.5-Ampere



A small compact charger designed primarily for continuous trickle charging in a small PBX. A filter reactance is incorporated to eliminate objectionable hum from the telephone circuit.

Designed to charge 11 or 12 cells and a variable resistance permits adjusting the charging rate from 0.3 to 0.5 amperes. Full load efficiency, 28%. Power-factor, 78%.

Approximate dimensions: height, 9 $\frac{1}{16}$ inches; width, 6 $\frac{3}{16}$ inches; depth, 8 $\frac{3}{4}$ inches.

Uses one No. 199698 bulb.

Approximate shipping weight, 20 pounds.

No. 244708.....each \$40.00

No. 3049455—19-52-Volt, 1-3-Ampere



This Tungar was designed primarily to meet the requirements of intercommunicating systems and PBX's. Extreme flexibility is a feature of this outfit. It can be used wherever a full-wave filtered output is required up to 3 amperes from 19 to 52 battery volts. Six sets of secondary taps brought to a terminal board located just inside the left-hand door, in conjunction with a rheostat controlled from the front panel permit a simple and easy method of adjusting the output over the entire range.

A high grade D'Arsonval ammeter, mounted on the front panel, gives accurate indication of the charging rate. A suitable filter reactance is incorporated in the design, to give quiet operation on telephone batteries.

Will give full 3.0-ampere charging rate at 52 battery volts, and taper to 1.75 amperes at 65 battery volts. Full load efficiency, 48%. Power-factor, 92%.

Approximate dimensions: height, 17 $\frac{1}{2}$ inches; width, 12 $\frac{1}{8}$ inches; depth, 14 $\frac{3}{8}$ inches.

Uses 2 No. 12X825 bulbs.

Approximate shipping weight, 78 pounds.

No. 3049455.....each \$96.00

G-E Mercury Tungars

For 60-Cell Batteries

60 Cycles, 115 Volts, A.C.

These instruments are designed specially for float charging 60-cell control batteries in central stations, sub-stations, industrial plants, etc.

Designed to meet the exacting requirements of central station engineers, making it possible to replace present charging equipment for control batteries with highly efficient, quiet operating chargers.

No. 6RB22Y2



This Tungar incorporates micrometer adjustment of the charging rate, which is easily controlled from front panel.

The maximum charging rate of 2.0 amperes may be obtained at 120 or 150-battery volts, and tapers off slightly at 175-battery volts. A charging rate as low as 0.4 amperes at 120-battery volts can be obtained.

Battery volts, 120/150/175. Charging amperes, 2.0/2.0/0.75. Overall dimensions: height, 14 inches; width, 10 $\frac{7}{8}$ inches; depth, 11 $\frac{7}{8}$ inches.

Renewal tungar bulb: No. 16X897.

Cat. No. 6RB22Y2.....each \$125.00
Renewal Tungar Bulb, Cat. No. 16X897.....each 8.00

No. 6RB14Y1



This tungar is used primarily for trickle charging where there is a very small load or no load on the battery. It is arranged for wall, panel, or bench mounting.

Where this charger is to be used, the charging rate is usually predetermined; and once the charging rate has been set, no further adjustments are necessary, consequently, the outfit is supplied without instruments. It is designed to deliver a tapering charge which tapers from 0.8 amperes at 120-battery volts to 0.4 amperes at 175-battery volts. A cover on the top gives easy access to the bulb.

Battery volts, 120/150/175. Charging amperes, 0.8/0.6/0.4. Overall dimensions: height, 9 $\frac{1}{16}$ inches; width, 6 $\frac{3}{16}$ inches; depth, 7 $\frac{3}{16}$ inches.

Renewal tungar bulb: No. 16X897.

Cat. No. 6RB14Y1.....each \$42.00
Renewal Tungar Bulb, Cat. No. 16X897.....each 8.00

No. 6RB10Y3



This tungar is of simple, sturdy construction and provides an outfit for applications, which do not require extra refinements or capacity.

It is usually used where there is a voltmeter available on the switchboard for indicating the battery voltage, and consequently is supplied without a voltmeter.

Although there is some adjustment of the charging rate provided, this is primarily a tapering charger. The charging rate starts at 6 amperes at

120-battery volts and tapers to 1.75 amperes at 175-battery volts.

Battery volts, 120/150/175. Charging amperes, 6.0/3.0/1.75. Overall dimensions: height, 17 $\frac{1}{2}$ inches; width, 12 $\frac{1}{8}$ inches; depth, 14 $\frac{3}{8}$ inches.

Renewal tungar bulb: No. 45X674.

Cat. No. 6RB10Y3.....each \$120.00
Renewal Tungar Bulb, Cat. No. 45X674.....each 15.00

Similar outfits for other voltages and frequencies are available.

G-E Full-Wave Mercury Tungars

For Charging Telephone Batteries

Form B—Insulated Transformer—Noiseless Type
50/60 Cycles, 115 Volts, A.C.

No. 6RB23C1—19/52-Volt, 2.0-Ampere



This mercury tungar has slightly lower ampere capacity. It will give full 2.0-ampere charging rate up to 52 battery volts, and tapers to 0.9 amperes at 65 battery volts. Adjustment of the charging rate is obtained by secondary taps brought to a terminal board, in conjunction with a rheostat. A high grade D'Arsonval ammeter is provided to indicate the charging rate. A filter reactance is incorporated as an inherent part of the outfit.

Full-load efficiency, 53%. Power-factor, 86%.

Approximate dimensions: height, 16¹¹/₁₆ inches; width, 9⁹/₁₆ inches; and depth, 10³/₈ inches.

Uses one No. 16X897 bulb.

Approximate shipping weight, 45 pounds.

No. 6RB23C1.....each \$75.00

No. 6RB10C5—19/52-Volt, 6 Ampere



This outfit is similar to No. 6RB23C1 except for higher current output. It will give full-rated output of 6 amperes from 19 to 52 battery volts. Adjustment of charging rate is by means of secondary taps brought to a terminal board, used in conjunction with a rheostat. An ammeter is provided to indicate charging rate. A smoothing filter reactance is incorporated.

Particularly desirable for small and medium sized exchanges and PBX's which are too large for two or three-ampere outfits and too small for twelve-ampere outfits. It is sometimes recommended for installations where a three-ampere continuous float charge is required, because of the extra capacity that a six-ampere rate allows for boost charging.

Approximate dimensions: height, 17¹/₂ inches; width, 12¹/₈ inches; depth, 14¹/₄ inches.

Uses one No. 45X674 bulb.

Approximate shipping weight, 90 pounds.

No. 6RB10C5.....each \$110.00

G-E Constant Potential Full Wave Mercury Tungars

Form B—Insulated Transformer

No. 6RB3E4, 115-Volt, 2.0-Ampere and

No. 6RB3E8, 230-Volt, 2.0 Ampere

60 Cycles, 115 Volts, A.C.



No. 6RB3E4

This mercury Tungar is a constant potential device, designed specifically for operating electro-magnetic devices, such as solenoids, magnetic clutches, magnetic brakes, magnetic chucks, etc. It is also used extensively to operate small d.c. motors, card punching machines and innumerable other d.c. devices where power requirements are 2 amperes or less at 115 volts, d.c.

Furnished in a neat, strong, welded steel casing with two hinged doors allowing easy access to bulb and transformer. A double-pole tumbler switch mounted on the front panel breaks both sides of the a.c. line. Outfit is arranged for wall or panel mounting.

Approximate dimensions: height, 11 inches; width, 9³/₁₆ inches.

Uses one No. 16X897 bulb.

Approximate shipping weight, 60 pounds.

Cat. No.	6RB3E4	6RB3E8
Each.....	\$50.00	65.00
Depth.....inches	11 ¹ / ₄	14 ¹ / ₄

No. 6RB10E1, 115-Volt, 6-Ampere and

No. 6RB10E3, 230-Volt, 6-Ampere

50/60 Cycles, 115 Volts, A.C.



No. 6RB10E1

This outfit is similar to the above outfit, except that it has a capacity up to 6 amperes. The applications are about the same. The output voltage regulation is well within the usual commercial allowance of 10% from no load to full load.

Approximate dimensions: height, 17¹/₂ inches; width, 12¹/₈ inches; depth, 14¹/₈ inches.

Uses one No. 45X674 bulb.

Approximate shipping weight, 95 pounds.

Cat. No.	6RB10E1	6RB10E3
Each.....	\$90.00	150.00

G-E No. 6RC88Y2 Copper Oxide Rectifiers

For General Purpose Applications

3-Phase, 60 Cycles, 230 Volts, A.C.



This type rectifier has been used successfully for several years in motion picture projection service.

Conservatively rated 1 kw. continuous output at 110 to 115 volts, d.c. For intermittent duty, where the duty cycle does not exceed 20 minutes per hour, it may be safely rated 1.5 kw. at 110 to 115 volts, d.c.

Line taps are provided for a range of line voltage from 190 to 250. May be operated in parallel where the load conditions exceed the rating of a single unit.

Rated d.c. output: 110-115 volts, 10 amperes.

Dimensions: height, 33 $\frac{3}{8}$ inches; width, 21 $\frac{1}{2}$ inches; depth, 16 inches.

No. 6RC88Y2.....each \$250.00

G-E No. 6RB10Y5 Mercury Barium Tungars

For 55/66-Cell Batteries

60 Cycles, 115 Volts, A.C.



Recommended for charging 5 $\frac{5}{6}$ -cell control batteries in central stations, sub-stations, etc.

The charging rate is adjustable from 3 to 6 amperes at 120-battery volts; 1.5 to 6 amperes at 150-battery volts; and tapers to 3 amperes at 175-battery volts.

May be mounted on switchboard, above or behind it, or in any out-of-the-way corner.

The full-wave Mercury Barium Tungar bulb requires only a short period of time for heating the filament and then it starts

rectifying as soon as the load is placed on the outfit.

Can be depended on to operate 24 hours a day with practically no attention. There are no moving parts to wear, which minimizes maintenance costs. The battery cannot discharge through the bulb in the event of power failure; and these outfits will automatically start charging again when a.c. power returns.

Battery volts, 120/150/175. Charging amperes, 6/6/3. Overall dimensions: height, 17 $\frac{1}{2}$ inches, width, 12 $\frac{1}{8}$ inches; depth, 14 $\frac{1}{8}$ inches.

Renewal tungar bulb: No. 45X674.

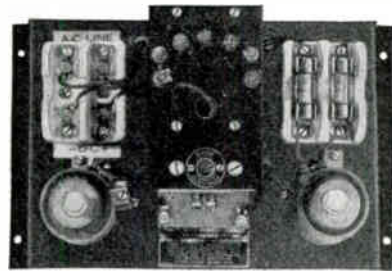
No. 6RB10Y5.....each \$140.00
Renewal Tungar Bulb, No. 45X674.....each 15.00

Similar outfits for other voltages and frequencies are available.

G-E Copper Oxide Battery Chargers

For Fire Alarm Systems

60 Cycles, 115 Volts, A.C.



No. 6RC42D7

This charger was developed to meet a demand for dependable trickle chargers for fire alarm batteries. The full capacity of the battery is always in reserve in case of a.c. line failure.

Dry type. No moving parts, nothing to wear out. Full fuse protection. No standby batteries required. Can be mounted in any convenient out-of-the-way location.

A relay with circuit-closing contacts may be added at slight additional cost. Since the relay mechanism is actuated by the current, the contacts may be connected to an alarm circuit to indicate when batteries are not being charged, a desirable feature that insures proper maintenance of batteries.

Horizontal Mounting

Cat. No.	Each	D.C. RATING			DIMENSIONS, INCHES		
		Amps.	Volts	No. of Cells	Height	Width	Depth
6RC42D7	\$48.00	.150	30/60	12/24	8 $\frac{5}{16}$	13 $\frac{1}{4}$	6 $\frac{3}{4}$
6RC42D5	75.00	.150	60/120	24/48	8 $\frac{5}{16}$	13 $\frac{1}{4}$	6 $\frac{3}{4}$
6RC42D6	80.00	.200	60/120	24/48	8 $\frac{5}{16}$	13 $\frac{1}{4}$	7 $\frac{3}{8}$

Vertical Mounting

6RC54D2	\$48.00	.150	30/60	12/24	11	5	6 $\frac{7}{8}$
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G-E Full Wave Tungars

For Charging Clock, Signal, Control Batteries, Etc.

Form B—Insulated Transformer
60 Cycles, 115 Volts, A.C.

No. 6RB19Y2—12-Volt, 6 or 12-Ampere



A charger used for charging 6-cell (12-volt) batteries, or it may be used to charge two 3-cell batteries. A snap of the tumbler switch changes the charging rate from 6 to 12 amperes. No other adjustment of the charging rate is provided, since it is generally not required on applications where this outfit is used. Two of these outfits are often connected in parallel to obtain a charging rate of 24 amperes at 12 volts.

Highly recommended for use in fire stations for fire apparatus batteries. Also used with No. 3126680 reactance to float charge telephone batteries.

Approximate dimensions: height, 11 inches; width, 9 $\frac{1}{8}$ inches; depth, 11 $\frac{1}{4}$ inches.

Uses two No. 189048 bulbs.

Approximate shipping weight, 40 pounds.

No. 6RB19Y2each \$50.00

**G-E Copper Oxide Battery Chargers
For Telephone Service**



This copper oxide rectifier for telephone service obtains output adjustment over an extremely wide range in very small steps. A new type of variable transformer replaces the conventional transformer taps and resistance commonly used for adjusting. The dial mounted on the front of the cabinet gives perfectly uniform adjustment from zero to full load.

The rectifying unit is a copper oxide assembly, a permanent rectifying device of proven reliability and safety. After the charging rate is adjusted, no other attention is required.

The life of this copper oxide rectifier is practically unlimited. There are no parts to replace. A large number of units have been running on test continuously since 1925.

The efficiency of the rectifier is high since all the adjustment is made with a transformer. This eliminates the losses which occur when a resistance is used to obtain output adjustment.

An internal filter gives quiet operation. The filter choke coil and the transformer are vacuum-impregnated with Glyptal. The properties of Glyptal provide maximum mechanical and electrical durability. The rectifier is equipped with a D'Arsonval instrument which gives an accurate indication of the output current.

An attractive black wrinkle-finish casing is designed for maximum practicability and lasting beauty. Because the lower section is perforated it allows free air circulation to cool the unit.

Several different ratings have been standardized so that it is possible to provide a trickle charge for large batteries or a full charge for small batteries.

Model No.	Each	Cells	Amps.	DIMENSIONS, INCHES		
				Height	Width	Depth
6RC98D1	\$43.20	12	1.0	19	13 ³ / ₈	14 ⁷ / ₈
6RC98D2	72.00	12	2.0	19	13 ³ / ₈	14 ⁷ / ₈
6RC98D3	91.20	12	3.0	19	13 ³ / ₈	14 ⁷ / ₈
6RC99D3	110.00	12	4.0	25	13 ³ / ₈	14 ⁷ / ₈
6RC99D2	120.00	12	5.0	25	13 ³ / ₈	14 ⁷ / ₈
6RC99D1	130.00	12	6.0	25	13 ³ / ₈	14 ⁷ / ₈
6RC95D2	144.00	12	8.0	25	20 ³ / ₈	14 ⁷ / ₈
6RC96D1	192.00	12	12.0	31	20 ³ / ₈	14 ⁷ / ₈
6RC98D4	42.80	24	0.5	19	13 ³ / ₈	14 ⁷ / ₈
6RC98D5	52.80	24	1.0	19	13 ³ / ₈	14 ⁷ / ₈
6RC98D6	62.80	24	1.5	19	13 ³ / ₈	14 ⁷ / ₈
6RC99D4	120.00	24	2.0	25	13 ³ / ₈	14 ⁷ / ₈
6RC99D6	144.00	24	3.0	25	13 ³ / ₈	14 ⁷ / ₈
6RC100D1	160.00	24	4.0	31	13 ³ / ₈	14 ⁷ / ₈
6RC96D2	177.00	24	5.0	31	20 ³ / ₈	14 ⁷ / ₈
6RC96D3	192.00	24	6.0	31	20 ³ / ₈	14 ⁷ / ₈

**G-E Copper Oxide Battery Chargers
For General Applications**

*60 Cycles, 115 Volts, A.C.



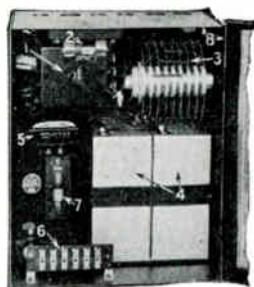
This battery charger is available for charging all types of storage batteries, large or small. Once the charger is installed no other attention is required except an occasional adjustment to the charging rate.

Can be used wherever there is a battery to be charged: central and sub-station control batteries; emergency lighting batteries in central stations, hospitals, stores, theaters and manufacturing plants; telephone batteries in schools, industrial plants, offices, small exchanges and annunciator systems; alarm batteries for police and fire alarms, burglar alarms, industrial protective alarms and call systems; batteries operating starters on gasoline and diesel engines; industrial truck batteries, etc.

No.	Each	No. of Cells	Battery Voltage	D.C. AMPERES		APPROX. DIMENSIONS, IN.		
				Max.	Min.	Height	Width	Depth
6RC75A1	\$32.00	6-9	12-22.5	0.1	0.01	13	6 ¹ / ₂	8 ³ / ₄
6RC49A15	38.00	6-9	12-22.5	0.5	0.04	10 ⁷ / ₈	11 ⁷ / ₈	9 ¹ / ₄
6RC49A16	40.00	6-9	12-22.5	1.0	0.08	10 ⁷ / ₈	11 ⁷ / ₈	9 ¹ / ₄
6RC49A20	70.00	6-9	12-22.5	2.0	0.08	10 ⁷ / ₈	11 ⁷ / ₈	9 ¹ / ₄
*6RC98A1	60.00	2-12	4-30	1.0	0	19	13 ³ / ₈	14 ⁷ / ₈
*6RC98A2	80.00	2-12	4-30	2.0	0	19	13 ³ / ₈	14 ⁷ / ₈
*6RC98A3	96.00	2-12	4-30	3.0	0	19	13 ³ / ₈	14 ⁷ / ₈
*6RC99A3	110.00	2-12	4-30	4.0	0	25	13 ³ / ₈	14 ⁷ / ₈
*6RC99A2	120.00	2-12	4-30	5.0	0	25	13 ³ / ₈	14 ⁷ / ₈
*6RC99A1	130.00	2-12	4-30	6.0	0	25	13 ³ / ₈	14 ⁷ / ₈
*6RC95A2	140.00	2-12	4-30	8.0	0	25	20 ³ / ₈	14 ⁷ / ₈
*6RC96A1	180.00	2-12	4-30	12.0	0	31	20 ³ / ₈	14 ⁷ / ₈
6RC75A2	40.00	10-16	20-36	0.1	0.01	13	6 ¹ / ₂	8 ³ / ₄
6RC49A17	44.00	10-16	20-36	0.5	0.05	10 ⁷ / ₈	11 ⁷ / ₈	9 ¹ / ₄
6RC49A18	50.00	10-16	20-36	1.0	0.08	10 ⁷ / ₈	11 ⁷ / ₈	9 ¹ / ₄
*6RC98A4	60.00	13-24	26-60	0.5	0	19	13 ³ / ₈	14 ⁷ / ₈
*6RC98A5	80.00	13-24	26-60	1.0	0	19	13 ³ / ₈	14 ⁷ / ₈
*6RC98A6	96.00	13-24	26-60	1.5	0	19	13 ³ / ₈	14 ⁷ / ₈
*6RC99A4	110.00	13-24	26-60	2.0	0	25	13 ³ / ₈	14 ⁷ / ₈
*6RC99A6	130.00	13-24	26-60	3.0	0	25	13 ³ / ₈	14 ⁷ / ₈
*6RC100A1	140.00	13-24	26-60	4.0	0	31	13 ³ / ₈	14 ⁷ / ₈
*6RC96A2	160.00	13-24	26-60	5.0	0	31	20 ³ / ₈	14 ⁷ / ₈
*6RC96A3	180.00	13-24	26-60	6.0	0	31	20 ³ / ₈	14 ⁷ / ₈
6RC75A3	54.00	17-25	34-52	0.1	0.01	13	6 ¹ / ₂	8 ³ / ₄
6RC49A19	60.00	17-25	34-52	0.5	0.04	10 ⁷ / ₈	11 ⁷ / ₈	9 ¹ / ₄
6RC74A3	68.00	17-25	34-52	1.0	0.08	11 ³ / ₈	18	11 ¹ / ₄
6RC74A8	78.00	25-35	50-88	1.0	0.08	11 ³ / ₈	18	11 ¹ / ₄
6RC75A5	54.00	44-66	88-165	0.1	0.01	13	6 ¹ / ₂	8 ³ / ₄
6RC74A2	74.00	44-66	88-165	0.5	0.04	11 ³ / ₈	18	11 ¹ / ₄

*These numbers are for 50/60 cycles, 115 volts, a.c.

Edwards Telephone Rectifiers



No. 902

Permanent battery replacement unit offering a most efficient means of obtaining uniform and constant direct current from an alternating current source.

Consists of the highest quality transformer, full wave copper oxide rectifier, filter condensers, chokes and fuses, completely assembled in a compact metal cabinet where all connections are plainly marked.

For installations where very rare or brief interruptions of service cannot be tolerated, unit can be equipped with a variable charging resistor, and where it is necessary, an auxiliary relay to automatically transfer from rectifier to an emergency d.c. source during an interruption.

The illustration on the right shows numerals on the open cabinet: 1, a specially designed transformer with double secondary to allow for a reduced a.c. supply for accessory uses; 2, two ampere cartridge fuse; 3, long life copper oxide rectifying stacks; 4, dry electrolytic condensers of the highest type; 5, choke coil; 6, bakelite insulated terminal strip; 7, one ampere cartridge fuse for a.c.; and 8, steel stamped case of heavy gage steel, reinforced.

Voltage required is obtained by multiplying number of cells in battery by the following figures: Dry cell, 1.5 volts per cell in series; ordinary storage battery, lead acid type, 2 volts per cell; and Edison storage battery, alkali type, 1.1 volts per cell.

In order to designate proper rectifier, the following definitions apply to tables listed below: Heavy traffic means that during peak periods more than 50% of cord pairs are in use simultaneously; average traffic means that during peak periods less than 50% of cord pairs are in use simultaneously.

For Intercommunicating Systems

No.	924	925	926
D. C. Required for Talking..... volts	6	12	24
A. C. Required for Ringing..... volts	6-12-18-24	6-12-18-24	6-12-18-24

For Manual Switchboard Telephone Systems

Cord Pairs in Use..... No., Average Traffic..... Heavy Traffic.....	D.C. Required for Talking and Ringing					
	12 Volts			24 Volts		
	1-5	5-10	10-20	1-5	5-10	10-20
	925			926	907	908

No.	Each	D.C. VOLTS				D.C. AMPERES				A.C. WATTS			
		No Load	Continuous	Intermittent	Continuous	No Load	Continuous	Intermittent	Continuous	No Load	Continuous	Intermittent	Continuous
902	\$60.00	13.0	6.0	3.0	1.0	1.5	8-12-16-20-24	50	100				
907	145.00	30.0	20.0	16.0	.5	1.0	8-12-16-20-24	50	100				
908	165.00	30.0	20.0	16.0	1.0	1.5	None						
909	248.00	54.0	44.0	36.0	.5	1.0	None						
923	79.00	7.5	3.5	2.5	1.0	1.5	8-12-16-20-24	50	100				
924	32.00	9.5	7.5	6.0	.35	.5	8-12-16-20-24	50	100				
925	58.00	16.6	14.0	12.0	.35	.5	8-12-16-20-24	50	100				
926	76.00	31.0	26.0	24.0	.35	.5	8-12-16-20-24	50	100				

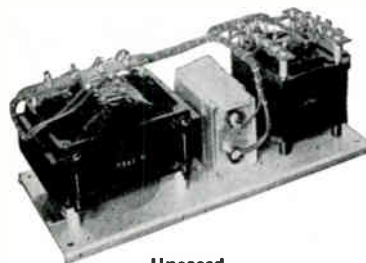
*Volts and amperes shown are for filtered section of unit.

Raytheon Voltage Stabilizers

Input, 95-130 Volts, 60 Cycles, Single Phase;
Output, 115 Volts, Plus or Minus 1/4%



Cased



Uncased

Constant a.c. voltage is essential for effective operation of many electrical devices. When voltage stabilizer is built into products as original equipment, its simplicity and unique freedom from adjustments eliminate manual voltage adjustments in completed assembly.

Well suited for laboratory use. Its ability to eliminate the variables introduced by changing line voltage makes it a vital necessity in well-equipped laboratories.

All branches of the electrical communications industry use the voltage stabilizer extensively. Amplifiers used in talking motion pictures, radio transmitters, sound recording equipment, and telephone apparatus operate most effectively with a constant voltage input.

May be made for any output voltage or for several different output voltages, all stabilized, either single or 3-phase. Also made for operating devices where inherent limitations of standard type may not be suitable.

Wherever correct operation of synchronous electric clocks is obtained, the voltage stabilizer will meet its specifications. If frequency varies, so that correct operation of synchronous electric clocks is not obtained, write for recommendations giving the change in frequency expected. Standard stabilizer is adjusted to operate with a unity power factor load. If load is materially less than unity, adjustment can be made at factory to suit.

No.	Each	Watts	Cased			
			Length Overall Inches	Width Inches	Height Inches	Weight Pounds
VR-1	\$19.50	30	9	3 1/2	4 1/2	8
*VR-1-A	19.50	30	9	3 1/2	4 1/2	8
VR-2	27.00	60	11 3/8	5 7/8	5 5/8	18
VR-3	36.00	120	15	6	6 1/8	26
VR-4	57.50	250	18 5/8	7	8 7/8	46
VR-5	81.00	500	22 1/4	9 3/4	8 3/8	70
VR-6	160.00	1000	23 3/4	11 5/8	12 3/4	140
VR-7	†270.00	2000	31 3/8	12 3/4	13 3/4	200
Uncased						
VR-107	\$17.50	30	9	3 1/8	4	6
*VR-107-A	17.50	30	9	3 1/8	4	6
VR-207	24.00	60	11 3/8	5 3/8	5 1/4	16
VR-307	33.00	120	15	5 1/2	5 7/8	22
VR-407	52.50	250	18 5/8	6 1/2	8 5/8	36
VR-607	140.00	1000	23 1/4	11	12	130
VR-707	†240.00	2000	31 3/8	12	13 1/4	190

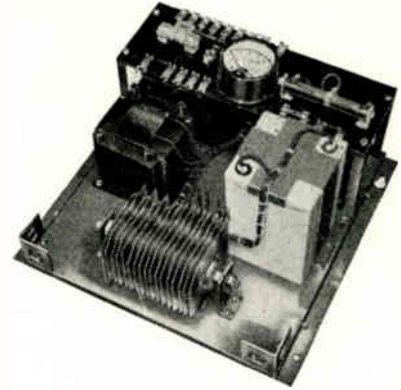
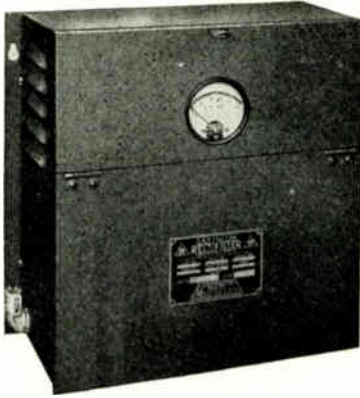
*Output 6.0 or 7.5 volts, plus or minus 1/2%.

†Add a \$7.50 set-up charge for any quantity each time ordered.

Also made to order in other sizes up to 25 KVA.

Raytheon RectiFilter

(Battery Eliminators for Telephone Service)



An economical way of obtaining telephone direct current power direct from an alternating current source.

The Raytheon RectiFilter improves telephone service by providing full direct current power for the best operation of the telephones.

A satisfactory way of supplying direct current power to PBX and PAX boards.

Features

1. Outlasts many sets of batteries.
2. Eliminates the trouble and expense of routine service for battery inspection.
3. Releases wires carrying charging current from the central office to subscribers' PBX boards for revenue producing service.
4. Minimizes power cost because of high efficiency in converting a.c. to d.c.

Steady D.C. Voltage

The PBX and PAX boards require a stabilized d.c. voltage to insure proper operation under the conditions of changing load normally encountered.

No. 1044-E RectiFilter and larger sizes include an exclusive d.c. stabilizing circuit which operates magnetically and, therefore, requires neither adjustment nor maintenance.

Continuous D.C. Power During an A.C. Interruption

The usual a.c. source is generally dependable. Consequently, a continuous d.c. supply is normally assured from the RectiFilter. However, for applications where even a rare interruption of service cannot be countenanced a RectiFilter is equipped to furnish d.c. during an a.c. interruption. For such applications recommendations will be furnished upon receipt of full particulars including d.c. voltage, maximum d.c., and length of time the auxiliary d.c. power is required.

Ratings

The established RectiFilter current ratings are conservative and the user will not find it necessary to de-rate any of them by adding a safety factor. Each RectiFilter will operate a telephone system for 24 hours a day as long as the maximum current demand does not exceed the rating.

However, it should be remembered that RectiFilter ratings are based on two assumptions: first, on their being installed in live air; second, on being placed where the maximum ambient temperature does not exceed 95° F. If ambient conditions exist which differ from the above, write for suggestions before selecting RectiFilter.

Specifications of RectiFilter Using Copper Oxide Rectifying Units Input, 110-125 Volts A.C., Single Phase

No.	Each	DC OUTPUT FOR TALKING		No Load Output Volts	Full Load Output Volts	A.C. Supply Frequencies	60-CYCLE OUTPUT FOR RINGING			Shipping Weight Pounds		
		Volts	Amperes				Volts	Amperes	Width		Depth	Height
1024	\$33.00	6	0.5	8.5	5.5	50/60	6-12-18-24 A.C.	4.0	7	6 1/4	10 1/2	17
1026	51.00	12	0.5	15.5	11.5	50/60	6-12-18-24 A.C.	4.0	7	6 1/4	10 1/2	19
1027	72.00	24	0.5	28	20	50/60	6-12-18-24 A.C.	4.0	7	6 1/4	10 1/2	34
1027-R	78.00	24	0.5	28	20	50/60	6-12-18-24 A.C.	1027 with Change of Source Relay			34	
1044-E	150.00	24	1.0	26	24	60	6-12-18-24 75-100 A.C.	4.0	14 1/2	7 5/8	14 1/8	84
1044-ER	156.00	24	1.0	26	24	60		1044-E with Change of Source Relay			84	
1043	171.00	24	1.5	26	24	60	6-12-18-24 75-100 A.C.	0.15	14 1/2	7 5/8	14 1/8	90
1043-R	177.00	24	1.5	26	24	60		1043 with Change of Source Relay			90	
1040	219.00	24	3.0	26	24	60	24 D.C.	14 1/2	9 5/8	14 1/8	100	
1040-R	225.00	24	3.0	26	24	60	24 D.C.					1040 with Change of Source Relay			100
1041	270.00	24	4.5	26	24	60	24 D.C.	19	12	14 1/8	120	
1042	315.00	24	6.0	26	24	60	24 D.C.	19	12	21 1/2	145	
1081	261.00	48	2.0	52	48	60	48 D.C.	19	12	14 1/8	160	
1082	315.00	48	3.0	52	48	60	48 D.C.	19	12	21 1/2	190	
1079	360.00	48	4.0	52	48	60	48 D.C.	19	15 3/8	28	210	
1080	450.00	48	6.0	52	48	60	48 D.C.	19	15 3/8	28	275	
*1057-R	30.00	4	0.23	..	4	50/60	None	7	6 1/4	10 1/2	17	

*Operates one or two magneto telephone operators' headset transmitters. Change of source relay included.

RectiFilter made to order for other wanted a.c. inputs and d.c. outputs.

Change of source relays can be supplied on all models at an extra cost of \$15.00. When not listed, order by adding suffix R to catalogue number.

MG-125 Holtzer-Cabot Magneto Ringing Sets For Telephone Exchanges



A quiet operating ringing set which causes no interference with radio reception, and has close voltage regulation.

Consists of a two-bearing frame with stationary windings for both motor and generator. This design eliminates the use of slip rings, brushes, circuit closing devices, and relays.

Floor space, 11 $\frac{1}{2}$ x7 $\frac{1}{2}$ inches.

Approximate shipping weight, 62 pounds.

Item No.	1	2	3	4
Motor.....volts	110	220	110	220
.....cycles	60	60	50	50
.....rpm.	1140	1140	1400	1400
Generator.....watts	15	15	15	15
.....volts	80	80	110	110
.....cycles	19	19	23	23

Holtzer-Cabot Equipment

We have available complete information on Holtzer-Cabot Ringing Dynamotors or Rotary Converters, Ringing Magneto Motor Generators, and Frequency Ringing Motor Generator Sets.

Write your nearest Graybar Service Warehouse.

Model S Lorain Sub-Cycles



The Sub-Cycle ringing machine is a static type of frequency converter which operates without moving parts to produce 20-cycle ringing current from 105-125 volts, 60-cycle a.c. supply, or 16 $\frac{2}{3}$ -cycles when the input is 50 cycles. For offices up to 1600 stations.

Output, approximately 20 watts at 90 volts.

Cabinet finished in black wrinkle lacquer.

Size, 8x11 $\frac{1}{2}$ x5 inches.

Shipping weight, 30 pounds.

Model S.....each \$45.00

Other models for larger capacity are available.



Model H Telering Ringing Machines

For A.C.



Used by telephone companies, industrial plants, railroads, and cities in the police and fire signaling service.

This machine is free from radio interference. Operating cost is nominal.

Reed and contact screw are mounted on a stamping as one unit. Reeds are baked in an electric oven to relieve stresses set up in manufacturing operations; will remain constant structurally.

Assembly is given a 24-hour running test after adjustment to insure proper operation. Contacts are located in compartment behind plate on face of cabinet.

Contact point in screw has slightly radius face. Contact point in reed has larger face diameter and has a flat face.

A standard receptacle is located in bottom of cabinet. Fuses are standard 3-ampere tubular glass fuses. They are in a standard fuse block on back of cabinet.

The 50-watt vibration-proof lamp lights up in case of a short or heavy load on machine. This is reflected from red pilot light in face of cabinet. This is located directly in front of this lamp.

Cabinet is an aluminum casting sprayed in a gray-green baked lacquer crackle finish. Ribs are natural aluminum with clear lacquer. Plate covering compartment for contacts in face of cabinet, is also crackle finish with edges natural aluminum.

A removable plate covers back of cabinet.

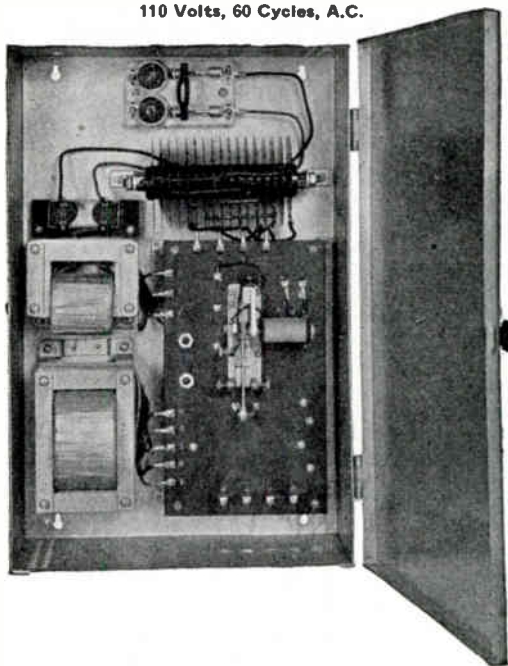
Supplied with cord 36 inches long.

Standard machine operates on 60-cycle input, giving 20-cycle output. Also built for use with 50-cycle input.

Model H, for 50 or 60-Cycle Input.....each

Leich Ringing Frequency Converters

110 Volts, 60 Cycles, A.C.



This converter utilizes the principle of rectifying an alternating current into two pulsating currents of unlike polarity and interrupting them through the primary windings to produce a 20-cycle ringing current in the secondary winding of a transformer.

Harmonic converters are also available.

For complete information, write your nearest Graybar Service Warehouse.

Edwards General Purpose Relays

Schedule D



Made in two sizes with magnets, bases, contacts, etc., proportioned according to use.

All even numbers are the senior relays, approximately 3 inches wide, 5 inches high and 3 inches deep.

All odd numbers are junior relays, approximately 2 inches wide, 3 inches high and 2 inches deep.

On a.c., relay will be found free from hum and efficient in operation. The contacts are pure hard drawn silver

of the wiping type and liberally proportioned.

When ordering give: Exact operating voltage of coil and whether d.c. or a.c. (give cycles); voltage and current to be connected to contacts and whether inductive such as solenoids, motors, etc., or non-inductive such as lamps, heaters, etc. If there is any question a brief description or sketch of its intended use should be furnished with order.

Single Pole, Front Contact

No.	Each	MAXIMUM COIL VOLTS		CONTACT RATINGS					
		A.C.	D.C.	UP TO 48 VOLTS A.C.	UP TO 10 D.C.	UP TO 130 VOLTS A.C.	UP TO 6 D.C.	UP TO 250 VOLTS A.C.	UP TO 3 D.C.
*950-F	\$10.50	440	230	30	10	30	6	20	3
951-F	6.00	130	90	6	3	6	1	3	

Single Pole, Back Contact

*950-B	\$10.50	440	230	10	3	10	2	8	
951-B	6.00	130	90	6	3	6	1	3	

Single Pole, Front and Back Contact

*950-FB	\$12.30	440	250	8	6	8	2	6	
951-FB	7.60	130	85	6	3	6	1	3	

Double Pole, Front Contact

*952-F	\$13.70	440	250	30	15	30	4	25	2
953-F	7.60	130	85	6	3	6	1	3	

Double Pole, Back Contact

*952-B	\$15.50	440	250	30	15	30	4	25	2
953-B	7.60	130	85	6	3	6	1	3	

Double Pole, Front and Back Contact

*952-FB	\$18.80	440	250	30	15	30	4	25	2
953-FB	8.50	130	85	6	3	6	1	3	

Single Pole, Single Throw, Double Break, Mechanical Latch, Electric Reset

*954	\$14.00	440	130	30	20	30	6	20	1
†955	6.00	75	48	5	2				

*All senior relays can be equipped with blow out coils which increases the contact ratings to 30 amperes, 250 volts a.c. or d.c. for \$4.80 additional.

†Low voltage relay, approximately 1½ inches wide, 2½ inches high, 1⅜ inches deep. Bronze contacts. Suitable for lamp annunciators, etc.

Unless otherwise indicated in price information a box and cover is not furnished, but can be supplied if specified at \$4.80 additional. Weatherproof cast boxes can also be furnished at \$20.00 additional.

Edwards Telephone Relays

For the operation of loud ringing extension bells or horns on any desired voltage. The relay operates on all standard telephone ringing circuits, 70 to 90 volts a.c., 16 to 20 cycles. Supplied complete in metal hinged cover box with condenser.

No. 962

Schedule D

For momentary operation as long as telephone ringing circuit is closed. Contact ratings—10 amperes a.c. or 5 amperes d.c. up to 48 volts, 10 amperes a.c. or 3 amperes d.c. up to 130 volts, 5 amperes a.c. or 1 ampere d.c. up to 250 volts.

No. 962.....each \$24.20

No. 26-T

Schedule T

For continuous ringing until reset. Contact ratings, 2 amperes a.c. or d.c. up to 48 volts.

No. 26-T.....each \$20.00

Brach WJZ Potheads for Pedestals



8-Wire

In pedestal locations and other places where space is extremely limited it is desirable to have a terminal pothead that is extremely small and at the same time offers the advantages of high insulation, accessibility and a number of circuits.

The design includes a bakelite panel mounted on a heavy cast zinc box. Cable enters through a rubber sealed stuffing box. Provision is made for completely filling the pothead with pitch after cable is installed. The pothead is suspended by soft lead links so that any undue stress on cable will cause it to fall without breaking cable.

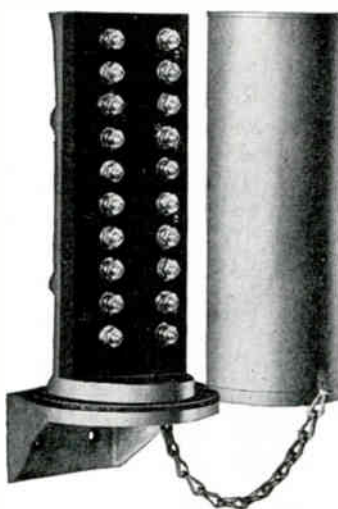
Bakelite panel on front of pothead and back cover are both removable. Panel is backed with waterproof paper.

Size, width and depth approximately 2⅞ inches. The height depends upon the number of wires.

No.	WJZ-8	WJZ-10	WJZ-12	WJZ-19
No. of Terminals.....	16	20	24	38

NOTE: It is important to advise the diameter of the lead cable so that we can furnish the correct size watertight gland bushing.

Brach Pole Top Potheads



No. PT-20

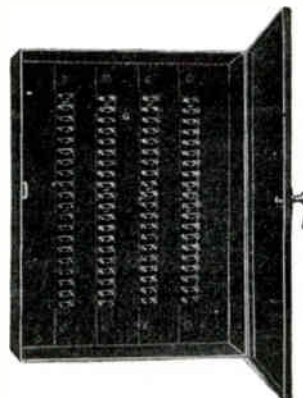
The purpose of this pothead is to provide either a sealed cable end with accessible terminals for testing and interconnecting, or a junction terminal to facilitate the connecting of cables to cables and open wires.

Cables brought up behind the terminal panel are skinned and passed out through the hollow studs of the binding posts and soldered. The enclosed chamber behind the terminal panel can then be entirely filled with compound. Cables or wires brought up in front of the terminal are connected to the binding posts in the

usual manner and can be sealed with compound in a well provided for this purpose. Compounding chamber, compounding well, base, and mounting bracket are castings. Panel is of solid ⅝ inch bakelite. Solid copper cover is permanently chained to base.

No.	PT-10	PT-20
No. of Terminals.....	10	20
Height.....inches	7½	12½
Diameter Overall.....inches	4½	4½

Brach Terminals In Sheet Metal Cabinets



Terminals in sheet metal cabinets are furnished to order.

Specify the type of terminal and the number of circuits required.

Be sure to advise size and location of entrance holes.

Brach Universal Terminal Strips

Type 2500



Each terminal strip is made in ten units moulded in one piece. Terminal strips may be sawed apart into smaller groups or single units. Each unit has its own mounting hole.

Sliding links are flanged to lock the nuts in place. Strips are made of bakelite. Each section of a strip may be further isolated by means of removable barriers. Insulated covers can be provided to fit over strips. Wires may be transferred or loops cut out without opening main circuit.

Size, 9½ inches long, 1¾ inches wide, 1¾ inches high.

Type 2500T



The same general description as Type 2500, but in addition carries Auxiliary Transfer Terminals, permitting two or more wires to be connected to each side of the terminal. These transfer terminals are desirable where temporary connections are needed without disturbing the permanent connections.

Size, 9½ inches long, 2¾ inches wide, 1¾ inches high.

ORDERING REFERENCE NOTE: By the addition of the letters B and C to any of the above ordering references we will understand that barriers and covers are to be included; or by adding B only that barriers only are required in addition to the terminals. For example: 2500TBC would be the 2500 terminal with extra transfer terminals, barriers and cover.

Type 1500



A smaller and a more compact unit than the Type 2500 Terminal Strip, but since silicon bronze screws are used throughout with heavy specially designed nuts they are far stronger than their size would normally indicate. Each terminal is made of eight units molded in one piece and may be separated into smaller groups or single units. Its design includes the same features as the 2500 strip including slide links, large creepage distance and resistance to the effects of gases, water or chemical action. Insulating cover can be furnished.

Size 6 inches long, 1¼ inches wide, 1⅝ inches high.

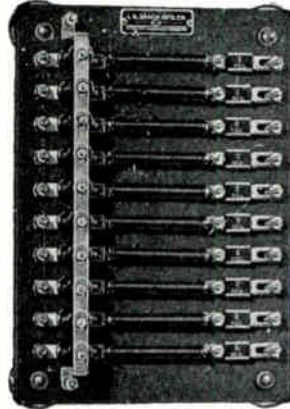
Type 1500T



Same general description as Type 1500, but in addition carries auxiliary transfer terminals, permitting two or more wires to be connected to each side of the terminal. These transfer terminals are also desirable where temporary connections are needed without disturbing the permanent connections.

Size 6 inches long, 2⅜ inches wide, 1⅝ inches high.

Brach Entrance Panels For Telephone Wire and Cable



Meets the demand for a rugged, combined protection and test panel for indoor mounting where cables or wires enter headquarters or fire houses.

Panel provides for each wire a heavy duty Rare Gas Lightning Arrester, a 3-ampere 2000-volt line fuse, a slide test link and a common ground buss with terminal posts top and bottom so that ground wires can be connected in two places, all assembled on a ¼-inch ebony asbestos panel mounted upon four porcelain insulators.

The slide test link permits opening a circuit without disturbing or injuring any

connected wire. The test links are marked to distinguish the circuit.

Panels can be mounted directly to the wall and set off from wall by porcelain knobs. Furnished mounted in sheet metal cases which may be fastened to the wall, these cases being provided with suitable doors and locks; or they can be furnished in weatherproof housings for mounting outdoors.

The arrester cartridges are heavy duty No. 272 Thermal Element Rare Gas Cartridges and are non-grounding. One is provided for each wire and meets the National Fire Protection Association requirements.

Fuses are nipped type rated at 2000 volts. One is provided for each wire.

Other size panels than those listed can be built to specifications.

Designation tags marked to specifications by stamp die markings on black fibre, filled in white are provided. They are shipped blank if no specification accompanies order.

Sneak current fuses, if not otherwise provided, may be had on protective panels embodying this additional equipment.

Standard Entrance Panels for Open Mounting with Arresters, Line Fuses and Terminals Complete

No.	1072	2072
Each .....	.....	.....
Number of Wires	10	20
Size Panel	inches 15½x11¼x5	28x11¼x5

Standard Entrance Panels Enclosed in Cabinet with Arresters, Line Fuses and Terminals Complete

No.	1072-H	2072-H
Each .....	.....	.....
Number of Wires	10	20
Size Panel	inches 18½x16x6½	31x16x6½

Standard Entrance Panels for Open Mounting with Sneak Fuses, Arresters, Line Fuses and Terminals Complete

No.	1072-S	[2072-S
Each .....	.....	.....
Number of Wires	10	20
Size Panel	inches 15½x12¾x5	28x12¾x5

Standard Entrance Panels Enclosed in Cabinet, With Sneak Fuses, Arresters, Line Fuses and Terminals Complete

No.	1072-SH	2072-SH
Each .....	.....	.....
Number of Wires	10	20
Size Panel	inches 18½x17x6½	31x17x6½
No. 272, Cartridge Only	each	.....
No. 53, Fuse Only	each	.....

*Unless otherwise specified, 3-ampere fuses are furnished.
NOTE: Should any of the above be desired in weather-proof housings, place the letters HWP before the order number.

Entrance Panel in Sheet Metal Cabinets

The above entrance panels are frequently furnished in sheet metal cabinets with brass hinges and locks.

As the number of circuits vary we will be glad to quote if advised the arrangement preferred and the number of circuits required. Be sure to advise size and location of entrance holes.

Brach Switchboard Arresters



No. 27SB



No. 29SB

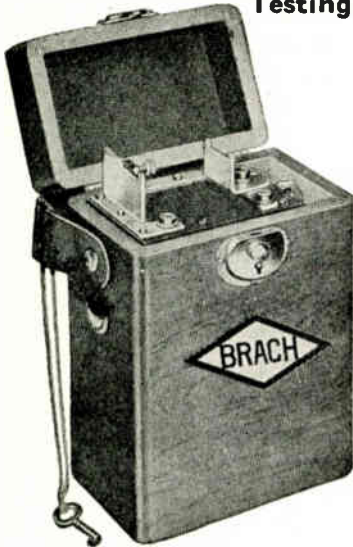
The switchboard is the logical location for lightning arresters in central offices. It not only facilitates in the wiring but it is also the preferred location in conjunction with fuses so that they may be readily maintained.

These arresters can be furnished in any finish desired—polished or satin chromium, lacquered brass and gold plated ferrules, cadmium, or black bakelite. The fuses can be furnished in polished bakelite with chromium or brass terminals.

- Underwriters' Laboratories approved.
 Can be used with horizontal or perpendicular mounting.
 No. 27SB casing 2 inches long, overall, 3 1/2 inches.
 No. 29SB casing 2 7/8 inches long, overall, 4 inches.
 No. 27SB, Cartridge Only..... each
 No. 29SB, Cartridge Only..... each
 No. 53 Line Fuse..... each
 No. 53-S, Sneak Current Fuse..... each

Be sure and specify type of finish desired on cartridges When ordering.

Brach Portable Rare Gas Arrester Testing Sets



The Brach Portable Testing Set is a small compact instrument and is capable of testing all types and makes of vacuum and rare gas lightning arresters.

This testing set can be used in determining the effectiveness of air-gap arresters as well.

It is good practice to make periodic tests of lightning arresters, or after a series of bad storms, to obtain uniform protection.

- No. R2605, Set Complete. ea.
 No. R2605-55 Batteries only each

Type RTC-2 Vincent Rare Gas Relays For Noise Elimination on Telephone Lines



In metallic telephone circuits the use of divided ringing to ground in order to simplify code or harmonic ringing on party lines has often resulted in noisy transmission. When a RTC-2 Vincent Rare Gas Relay is connected in series with each grounded bell circuit the line is automatically freed from ground during voice transmission and ground current noises are eliminated. The higher ringing voltages, however, pass through the relays and ring the bells. The relay is also applicable to the central office drop ground connection.

Furnished with an ingenious clip requiring a single bolt to mount it within the bell box or at any other convenient location.

The relay has no moving parts and is unaffected by atmospheric or temperature changes. Lines equipped with the relay are

free from grounds in normal operation and therefore free from noises which would ordinarily be picked up through ground connections. Can be used on magneto or common battery lines with either harmonic or code ringing. Ringer load is removed from voice circuit, improving transmission. Length, 2 1/2 inches. Height, when mounted, 1 1/2 inches.

Brach Rare Gas Lightning Arresters

The sensitivity and uniformity of Rare Gas Lightning Arresters, together with their ability to absorb extremely heavy surges without permanently grounding has caused their wide spread acceptance for the protection of Telephone, Railway Signalling, and Municipal Fire and Police Alarm Circuits. The arrester gap is hermetically sealed in an atmosphere of inert rare gases and is not subject to moisture, corrosion, insects or dirt.

No. 402

A two wire outdoor arrester to protect a single pair of wires by two type MCD arrester units without fuses.

The housing includes the arrester units mounted between heavy phosphor bronze clip terminals supported by a porcelain base and protected by a weatherproof galvanized iron can type cover. These units are interchangeable with the standard carbon mica blocks.

- A mounting bracket is provided.
 Size, 3 inches diameter, 4 1/2 inches high.
 No. 402, Arrester Complete..... each
 No. MCD, Cartridge Only..... each



No. 502

No. 502

A two wire outdoor arrester to protect a pair of wires by two type MCD cartridges units and two 2,000 volt nutted end fuses.

The housing includes the arrester units and fuses mounted upon a porcelain base. The entire arrester is covered by a weatherproof zinc can type cover. A mounting bracket is provided. Uses No. 53 Fuses. Size 3 1/2 inches wide, 2 1/4 inches deep, 5 3/4 inches high.

- No. 502, Arrester Complete..... each
 No. MCD, Cartridge Only..... each
 No. 53, Fuse Only..... each

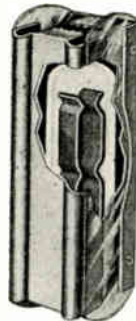
Type MCD Brach Rare Gas Lightning Arrester Cartridges

The cartridge unit supplies the demand for a small size thermal element lightning arrester which fits the clips of standard carbon mica block units with which it is interchangeable.

Will operate under conditions where humidity is high. Gives good protection.

Size 3/4 inch wide, 1 3/4 inches long, mounted on 1/2 inch centers.

- No. MCD-2 MCD-4 MCD-6
 Each.....
 Breakdown volts 200-400 400-600 600-900



Brach Rare Gas Heavy Duty Lightning Arresters

Where space is not at a premium the larger Heavy Duty Rare Gas Arresters are recommended. A few of the many available types are listed. In the triple path types, two line electrodes and a ground electrode are contained in the same arrester cartridge facilitating the equalization of surge voltages between twisted pair conductors and cable conductors.

Standard voltage breakdown ranges 200-400, 350-600 volts a.c. Special ranges available from 90 volts to several thousand volts.

Type 27-A Arresters—Single Line

Has external saw gap plates. Is recommended for fire alarm circuits, telephone and telegraph circuits.

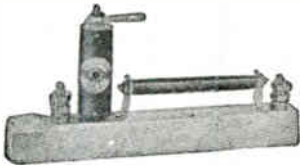
Equipped with an auxiliary air-gap under the cartridge to provide an additional path for any discharge in excess of the capacity of the cartridge.

The base is made of Bakelite, and carries two binding posts, one for line and one for ground. Uses No. 27-M cartridge only.

- Size 5 inches long, 1 1/4 inches wide and 2 inches high.
 No. 27-A, Arrester Complete..... each
 No. 27-M, Cartridge Only..... each



Brach Rare Gas Heavy Duty Lightning Arresters



Type 272 Arresters
Designed for telephone and telegraph circuits, where a Rare Gas Arrester is desired in combination with a line fuse.

The arrester is also largely used on single or grounded telephone lines.

Fuses are of the nutted end type, 5 ampere unless otherwise specified. Uses No. 272 Cartridge only and No. 53 Fuse only. Underwriters' Laboratories approved. Size 8 1/4 inches long, 4 3/8 inches high, 1 inch wide.
Type No. 272, Arrester Complete.....each
No. 272, Cartridge Only.....each
No. 53, Fuse Only.....each

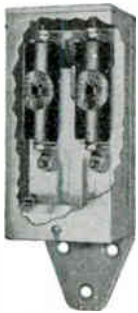


Type 184 Arresters
Single Line, 2,000 Volts

Underwriters' Laboratories approved for fire alarm and other signal services.

Especially designed to fulfill the requirements of the Red Book with respect to location at the entrance of headquarters.

Consists of three operating portions: The lightning protective cartridge No. 272; The sneak current fuse No. 53-S; The regulation 2,000 volt fuse No. 53, 5 ampere unless otherwise specified.



Type 284-C Housed Arresters
Double Line Outdoor

A lightning arrester suitable for use where a single pair of wires is to be protected by heavy duty arrester cartridges arranged to be mounted outdoors without fuses. The housing for the arrester cartridges consists of a porcelain base with heavy phosphor bronze clip terminals and the entire unit is covered by a can type weatherproof cover.

A mounting bracket is provided. The arrester cartridges are heavy duty Type 272 Thermal Element Neon Cartridges and are non-grounding.

Meets the latest requirements of the National Fire Protection Association.

Type No. 284-C, Housed Arrester Complete.....each
No. 272, Cartridge Only.....each
Size 9 1/2 inches long, 4 1/2 inches high, 1/2 inch wide.
Type No. 184, Arrester Complete.....each
No. 272, Cartridge Only.....each
No. 53, Fuse Only.....each
No. 53-S, Sneak Current Fuse Only.....each



Type 60 Arresters
Double Line

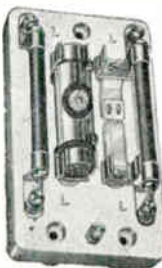
Recommended for all low voltage protection.

The base is arranged for two cartridges taking care of a pair of circuit wires.

Auxiliary saw tooth gaps are provided. Uses No. 27-M cartridge only.

Size 5 1/2 inches long, 3 1/8 inches wide, 2 1/4 inches high.

No. 60, Arrester Complete.....each
No. 27-M, Cartridge Only.....each



Type 40-B Arresters
Double Line with 2,000 Volt Fuses

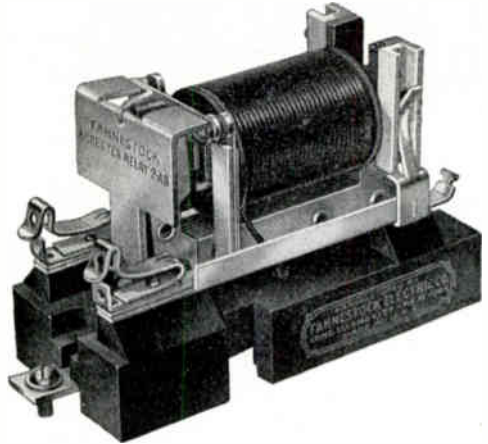
Recommended for all telephone and train dispatching circuits. Designed to accommodate the usual two wires or pairs of such circuits. Auxiliary air gaps are included.

Arrester is equipped with line fuses rated for 2,000 volts complying with the requirements of the National Board of Fire Underwriters.

Uses No. 27-M cartridge only and No. 53 fuse only. Size 6 7/8 inches long, 4 inches wide, 2 1/4 inches high.

No. 40-B, Arrester Complete.....each
No. 27-M, Cartridge Only.....each
No. 53, Fuse Only.....each

No. 3-A Fahnestock Arrester Relays



Used to replace standard cable or office protectors where the latter operate too often due to induction. Relay may be located within a cable box or in a switchboard cabinet.

Carries continuously, currents in excess of 10 amperes, and unfaithfully restores itself when inductive discharge or cross is over. Each relay provides for the protection of a pair. Consists of a fast a.c. relay fitted with large electrolytic silver contacts which short circuit both arresters when armature is pulled up. Relay will operate within a half cycle of the beginning of a discharge passing over an ampere through either arrester. Unless otherwise instructed the arresters furnished are Nos. 26 and 27 Western Electric Protector Blocks. The coil has a low impedance; never exceeds 1 ohm at 60 cycles.

Bronze and stainless steel armature bearing. All metal parts are phosphor bronze, with the exception of the magnetic portion. Parts plated to prevent rust and corrosion.

Bakelite base, 4 1/2 inches long, 2 inches wide.

Brach Rare Gas Heavy Duty Lightning Arresters

Type 390 Arresters
Triple Path



For signal and telephone work.

Maintains a triple balanced system of protection from lightning and electrostatic charges.

Provides a sensitive and reliable shunt path across the telephone pair.

Consists of an improved cartridge tube filled with Rare Gas having one end equipped with two terminals for the two line wires.

Uses No. 390 cartridge only.

Size 6 1/4 inches long, 1 1/2 inches wide, 2 1/4 inches high.
Type No. 390, Arrester Complete.....each
No. 390, Cartridge Only.....each



Type 440 Arresters

Triple Path with 2,000 Volt Fuses

For telephone protection or for a pair of circuit wires. The use of the single triple-path cartridge gives the advantage of discharge between line and line, and line and ground within one tube.

This type includes fuses. Uses No. 53 fuse only and No. 440 cartridge only.

Size 7 inches long, 3 1/4 inches wide, 2 1/2 inches high.

Type No. 440, Arrester Complete.....each
No. 440, Cartridge Only.....each
No. 53, Fuse Only.....each

Faraday Electric Clocks

Faraday Electric Clocks are used in small schools, hospitals, residences, and commercial establishments. They have self-starting 450-rpm. synchronous motor mechanisms, and are regularly furnished for 24 volts or 110 volts, 60 cycles a.c. Clocks require approximately 2 watts (at 50 per cent power factor) for normal operation.

Red sweep second hands are furnished on 8 to 15-inch single-motored clocks, but not on dual-motored clocks.

On a dual-motored clock, one motor operates clock on regular time; the second motor, used for resetting only, is controlled by a manual or automatic resetting device, either of which must be used with a dual motor clock system. If the supply of current from the central station fails, the clock stops. When normal supply of current is resumed, the second motor (when actuated by the manual reset switch) advances the clock hands at ten times regular time-speed until the period of current interruption is compensated for. In this way, a current interruption of one hour can be made up within six minutes.

Buzzers for signaling purposes can be mounted in any of the clocks listed below at an additional charge.

Surface Wall Type—Round

This surface wall type clock in a metal case has long been favored for practically every type of industrial and institutional application.

Standard finish, statuary bronze lacquer.



Dial Diameter Inches	No. 1650, Single-Motored Each	No. 1653, Dual-Motored Each
8	\$9.75	\$13.75
10	10.50	14.50
12	10.75	14.75
15	18.00	22.00
18	30.00	34.00

Semi-Flush Type—Round

A semi-flush wall clock in a metal case; furnished complete with wall box.

Standard finish, statuary bronze lacquer. Other finishes available as specified.



Dial Diameter Inches	No. 1652, Single-Motored Each	No. 1655, Dual-Motored Each
8	\$10.50	\$14.50
10	11.25	15.25
12	11.50	15.50
15	18.75	22.75
18	30.75	34.75
24	70.00	75.00

Surface Wall Type—Square

This wood clock is regularly furnished with an oak, walnut or mahogany finish; special finishes can be furnished.



Dial Diameter Inches	No. 1656, Single-Motored Each	No. 1657, Dual-Motored Each
8	\$15.00	\$19.00
10	16.00	20.00
12	17.00	21.00
15	23.00	28.00
18	36.00	41.00
24	74.00	79.00

Double Dial Type—Round

Clock is for either side wall or ceiling mounting. It is a 450-rpm. synchronous-motor double dial clock made of cast aluminum—completely cast.

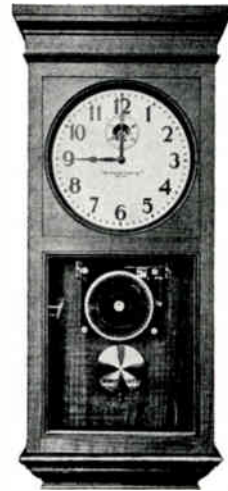
Finished in natural aluminum or dark statuary bronze.



Dial Diam. In.	No. 1660, Single-Motored Each	No. 1661, Dual-Motored Each
10	\$38.00	\$46.00
12	41.00	49.00
15	57.00	67.00
18	82.00	92.00

Type P-160 Self-Winding Adjustable Program Clocks

24-Hour Schedule



An automatic clock combined with a program device. Used as a master clock to control a system of clocks as well as to operate programmed signal system. Can be checked hourly with official time by connection with local Western Union Time Service.

Program device sounds 4-second signals any 5-minute period of the day. Time of sounding signals is easily adjusted by rearranging pins on program disc. Operates a number of different schedules concurrently. Can be equipped with contact for silencing bells. One-bell installations can be furnished in compact units with bell mounted on side of clock case.

Height, 41 1/4 inches; width, 18 1/2 inches; depth, 7 3/8 inches; and dial, 12 inches. Oak or birch case finished to match trim.

Movement; 80 beat, spring-driven, pendulum-controlled. Has 1 hour of reserve power.

Operation; 110 volts, a.c., through transformer rectifier, or dry cell batteries direct.

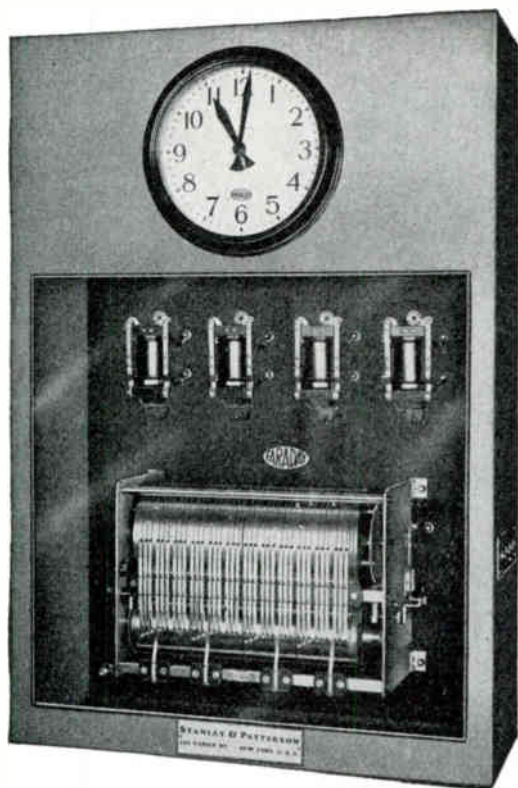
Large installations requiring a number of bells, need additional relay and transformer rectifier to furnish extra power for bells. These are furnished at a slight additional charge.

Prices and complete information upon request.



Faraday Electric Time Systems

Listed as Standard by Underwriters' Laboratories



No. 1634 4-Schedule Program Clock

Faraday Synchronous Motor Operated Time Systems are so far superior to the pendulum master clock and minute impulse secondary clocks (outlying dials), that most architects, electrical engineers and school boards specify them as standard equipment. Year in and year out, these time systems maintain correct time within $2/10$ of a second—an accuracy impossible with the pendulum clock and minute impulse dial systems.

Faraday Single and Dual-Motored Time Systems are especially designed for use in schools, colleges, hospitals, institutions, banks, offices, public buildings, railroad stations, industrial plants, department stores and mercantile establishments. These clocks are furnished in two general types:

Time service only, with any desired number of clock dials from 8 to 30 inches in diameter as standard—larger sizes to order.

Time service with additional program instrument providing audible signals on predetermined schedules.

Program Instruments

Faraday Program Clocks are designed for use in schools, colleges, hospitals, etc. to automatically sound bells, buzzers, chimes, horns, etc. on a predetermined schedule in the classrooms, corridors or playgrounds. Operated by 450-rpm. synchronous motors. Regularly furnished in 1, 2, 4, 6 and 8-circuit capacity. All capacities, except the 1-schedule, are available in the 12, 18 or 24-hour type; the 1-schedule clock is the 24-hour, 5-minute interval type.

Operation of Dual-Motored Electric Time Systems

Dual-motored electric time systems are generally used where no "stand-by" source of current is provided.

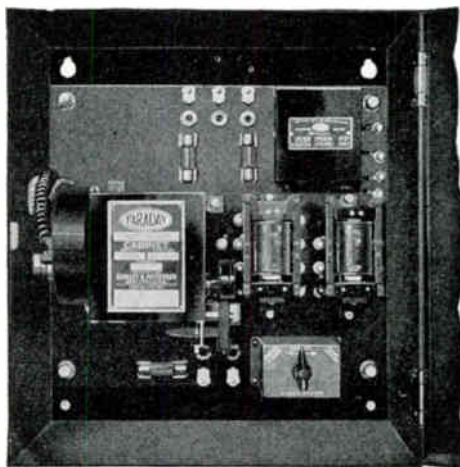
Dual-motored clocks and program instruments require three wire circuits. The re-setting of dual-motored clocks and program instruments, if made necessary by failure of central station current, may be accomplished in two ways: either by manual re-set or by automatic re-set.

Manual Re-Setting

On dual-motored clocks and program instruments, one motor operates clocks and program instruments on regular time. If the supply of current from central station fails, the clocks and other devices stop.

When normal supply of current is resumed, the second motor (when actuated by the manual re-set switch) advances the clock hands and program instrument at ten times regular time-speed until period of current interruption is compensated for. In this way, after central station current has been restored by manually closing switch controlling the second motor, current interruption of one hour can be made up within 6 minutes; of 2 hours, within 12 minutes, etc.

Automatic Re-Setting



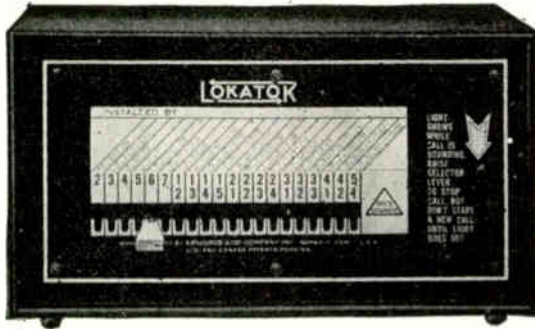
No. 1694 Automatic Re-setting Control

On dual-motored electric time systems, an automatic re-set unit may be substituted for the manual re-set switch. In case of central station failure, this unit will automatically and immediately time the duration of the interruption. When central station supply of current is restored the re-set unit automatically operates, as described above, the re-setting devices for the exact length of time required to compensate for the period of interruption. After that time, the equipment will be restored automatically to normal operation. However, it is more advantageous to use single-motor operated clocks with emergency supply outfits because, when central station current fails, clocks and other devices are kept in continuous operation, whereas without the emergency current supply outfits clocks and other devices stop.

Edwards Lokator Systems

Each unit is carefully designed to operate with every other unit for the utmost efficiency. System is standardized and may be assorted on the same circuit.

Automatic Lokator Schedule T



Standard 20-Call Lokator

This standardized instrument is used for the operation of all types of signals from whatever power unit best suits the installation.

Operated by low voltage irrespective of the voltage operating the signals. Its mechanism is driven by a small, noiseless, synchronous motor. The codes are started automatically when the selector key is pressed in the locked position. The code sounds continuously until the selector lever is flipped up.

The baked black finish relieved in dull chromium harmonizes with all interiors and furniture.

Description	*A.C.		†D.C.	
	No.	Each	No.	Each
20 Calls.....	5020M	\$75.00	5120M	\$75.00
40 Calls.....	5040M	175.00	5140M	175.00
60 Calls.....	5060M	350.00	5160M	350.00

*Unless otherwise specified Lokator will be furnished to operate in conjunction with power units connected to 120 volts, 60 cycles lighting circuit. Other frequency units (25-33-40 etc.) and voltages (up to 250 volts) may be furnished at no extra charge when specified.

†Furnished for operation in conjunction with power units connected to 120 volts d.c. lighting circuit, unless otherwise specified.

Larger sizes on application.

Power Units Schedule T



Connected to standard lighting circuits, it distributes 24 volts a.c. or 120 volts a.c. or d.c. to the signals but allows only low voltage to enter the Lokator itself. Protects the Lokator from undue strain on its contacts and provides a convenient terminal box for centralizing the various factors that make up a complete system. When the signal circuit has reached the limit of the initial power unit, an auxiliary power unit is introduced at that point and so on indefinitely.

No.	Description	Each
5061M	To Operate 24-V. Signals from 120 V. A. C. Lt. Circuit.....	\$36.00
5062M	To Operate 120-V. Signals from 120 V. A. C. Lt. Circuit.....	36.00
§5063M	To Operate 120-V. Signals from 120 V. D. C. Lt. Circuit.....	.....

Auxiliary Power Unit

5061A	To Operate Additional 24-V. Signals on Circuit Using No. 5061M Unit.....	\$36.00
5062A	To Operate Additional 120-V. Signals on Circuit Using No. 5062M Unit.....	36.00
§5063A	To Operate Additional 120-V. Signals on Circuit Using No. 5063M Unit.....	.....

§Prices on application.

Chime Signals Schedule T



No. 5001

This is the most commonly used signal for all systems. It has a pleasant musical tone to which the ear responds subconsciously—but is not annoying. It mounts directly on a wall for open wiring, on a standard switch box, or any fitting designed for a switch or receptacle.

No.	Each	Watts	†Cycles	Volts	From Power Unit No.
5001	\$6.00	6	41-60	24	5061A or 5061M
5003	12.00	6	41-60	120	5062A or 5062M
5004	12.00	6	D.C.	120	5063A or 5063M

Quiet Signals Schedule T



No. 5011

Signal produces a quiet ding which attracts attention in immediate vicinity but is not annoying. Particularly desirable in conference rooms and for the extension of the call system to a remote place where one or two people are interested. For surface wiring it mounts in any wiremold or similar fitting designed for a switch or a receptacle, and for concealed wiring mounts in any standard switch box. It is covered with any standard toggle switch plate.

Price does not include plate.

5011	\$2.00	10	41-60	24	5061A or 5061M
5013	8.00	10	41-60	120	5062A or 5062M
5014	8.00	12	D.C.	120	5063A or 5063M

Bells for 24-Volt Operation from Nos. 5061A or 5061M Power Units

Schedule T



No. 5023

Specially designed for use on Lokator Systems, bell gives a clear crisp tone and will stand many years of hard service. For open wiring it mounts directly on the wall. For use with wiremold and similar surface fittings or with switch box for concealed conduit, an adaptor plate will be furnished when specified at \$1.25 added to list. Specify No. 5029 adaptor plate. The plate mounts on any 4-inch square or 3¼-inch octagon box or on any standard single gang switch box.

No.	Each	Size Gong Inches	Watts	†Cycles	Volts
5023	\$5.00	3	6	41-60	24
5024	6.00	4	6	41-60	24
5026	8.00	6	18	41-60	24
5028	12.00	8	18	41-60	24

A heavier duty bell striking a harder blow and consequently giving more volume is available in 8, 10 and 12-inch sizes. Mounts directly on wall or on various type boxes and fittings.

5008	\$19.00	8	22	41-60	24
5010	30.00	10	24	41-60	24
5012	38.00	12	24	41-60	24

†Unless otherwise specified all a.c. units will be furnished for 60 cycles. Other frequency units (25-33-40 etc.) can be furnished without extra charge but must be specified.

Edwards Lokator Systems

Bells for 120-Volt Operation

Schedule T



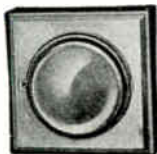
No. 562-6

A back plate mounts on any four-inch square box, standard switchbox, outlet box with single gang cover or any single gang conduit or wiremold type fitting. Wires are brought through entrance hole in plate and connections made to binding posts on front of plate where there is plenty of room to work. The bell is then hung on two strong lugs and pressed home where it snaps solidly into place and is held securely. Underwriters' listed.

No.	From Nos. 5062A or 5062M A.C. Power Unit 120 V., *41-60 Cycles			From Nos. 5063A or 5063M D.C. Power Unit 120 Volts D.C.		
	562-4	562-6	562-8	563-4	563-6	563-8
Each	\$15.00	19.00	23.00	\$15.00	19.00	23.00
Size.....inches	4	6	8	4	6	8
Watts.....	15	22	22	14	14	14

Light Signals

Schedule T



No. 5031

Ideal for locations where no noise is desired and where the call is shown by the flashing light. Protruding glass dome enables it to be seen from all directions. The dome is hinged so that lamps may be replaced easily. Signal comes equipped with a lamp. For surface wiring it fits any standard two-gang wiremold or similar fitting with a depth of two inches. For concealed wiring it fits any two-gang switch box or outlet box with two-gang cover where the two-inch depth is provided.

No.	Each	Watts	*Cycles	Volts	From Power Unit No.
5031	\$6.00	4	41-60	24	5061A or 5061M
5032	6.50	6	{41-60}	120	{5062A or 5062M 5063A or 5063M}

Horns for 24-Volt Operation from Nos. 5061A or 5061M Power Unit

Schedule T



No. 5111

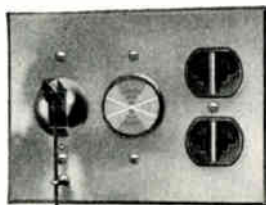
Designed for use on Lokator Systems. Easily adjustable (after installed) for the desired pitch of tone. Underwriters' approved.

Back plate for interior horn mounts directly on wall for non-conduit wiring.

No.	Each	Description	Watts	*Cycles	Volts
5110	\$12.50	Interior, Megaphone	24	41-60	24
5111	11.25	Interior, Grill Front	24	41-60	24
5112	15.00	Exterior, Megaphone	24	41-60	24
5113	20.00	Exterior, Two-Way	24	41-60	24

*Unless otherwise specified all a.c. units will be furnished for 60 cycles. Other frequency units (25-33-40 etc.) can be furnished without extra charge but must be specified.

Bryant Hospital Signal Devices



Bedside Calling Station



No. CS56 Switch



No. CS258 Switch



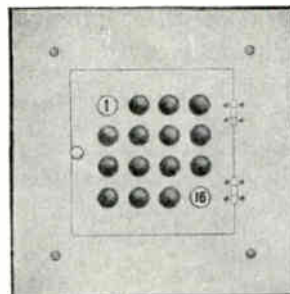
No. 480 Switch



No. 482 Cord



No. 484 Fuse



Annunciator



Dome Light and Buzzer

Bedside Calling Stations

Operated by the patient; calls can only be cancelled at the bedside. Designed for use on 125 volts, but suitable low voltage lamps, buzzers and transformers are available to permit operation at lower voltages when desired.

Furnished single gang or in combination with bull's eye, switch, power and radio outlets, etc.

Station switches, Nos. CS56 and CS256 (2 cords) with audible signal contact; Nos. CS58 and CS258 (2 cords) without audible signal contact; and No. 480, for magnetic system. No. 482 cord used, with JD plug. Fuses, No. 483 for d.c. and No. 484 for a.c.

Annunciators

With 2 to 150 signals in flush, surface or double-face bracket mounting.

Dome Lights

One to four light types, with or without buzzers. Also bedside Roto-Lights.

Audible Signals

Bells and buzzers; either flush or surface mounted, in high and low voltages.

Doctors' In-and-Out Registers

With 20 to 200 signals.

Doctors' Paging Systems

Three signals simultaneously; 120 code calls.

Elapsed-Time Recorders

Four sizes; 5, 10, 15 and 20 pen.

Prices and Complete Information upon Request

Hospital Signaling Systems and Equipment

Hospital signaling systems are an absolute necessity in every modern hospital.

Nurses' Calling Systems

Nurses' calling systems may be of either one of the following three types:

LOCKING-BUTTON TYPE in which the locking push button, suspended from a flexible, rubber-covered cord contains all the mechanism to actuate the audible and visible signals and to reset these when call has been answered.

LOCKING-MAGNETIC SWITCH TYPE in which the contacts of the non-locking push button at the end of a flexible, rubber-covered cord actuate a magnetic switch, protected by a steel case in the wall, the

Nurses' and Maids' Location Systems

These systems indicate the location of nurses and maids in private rooms by an illuminated plug inserted in a receptacle at the door when entering. Upon leaving the room this plug is removed.

Nurses' Home-Calling Systems

These systems provide communication between office and the nurses' and attendants' rooms at their homes. Two types of systems may be used, viz.:

Return-Call Annunciator Type

Intercommunicating Telephone Type

In the return-call annunciator systems, nurses' or attendants' rooms are provided with a combination buzzer and push button-station while at building office, a combination annunciator and push button board is installed. In this way the office may call the nurse and the nurse may answer the call by operating the corresponding push buttons.

switch operating both audible and visible signals; this locking-magnetic switch type may be used on 110-volt circuits, either a.c. or d.c., or on low-voltage circuits if preferred.

PULL-CORD-SWITCH TYPE consisting of special toggle-type switch installed in the wall and operated by a pull-cord. This system is used in hospitals where low initial cost is a deciding factor; the operation of the pull-cord switch requires more effort on the part of the patient, and is sometimes not favored because of this.

Ambulance and Entrance Signaling Systems

Consist chiefly of the necessary push button, located at doors leading out of the building and a lamp-annunciator having a lamp signal for each location with buzzer as audible signal. Useful for night service.

Room stations may be provided with indicating drops which in nurses' absence remains visible until reset, indicating that a call has been made.

In the telephone call system the combination annunciator and push button board is provided with an operator's telephone and the room stations are replaced by telephones. The room telephone may be provided with indicating drop for the same purpose as stated above.

Hospital signaling equipment is approved by Underwriters' Laboratories as well as by the U. S. Government for Veterans' Hospitals, etc.

Engineering Advice

Our engineering department—specialists in this particular field of signaling—will gladly co-operate with architects, engineers, hospital superintendents, etc., in charge of operation to lay out systems and make recommendations.

There is no charge for this service.

Webster Electric Teletalk Amplified Intercommunication Systems

Teletalk is amplified voice intercommunication. It is adaptable to every size and type of business. It is available in six basic models, each obtainable with special features to suit specific conditions. Capacities of individual models range from 5 to 24 stations. Systems based on any one model may be used for departmental operations or they can be combined to provide complete intercommunication for an entire office, plant or building operation.

Teletalk eliminates the countless, unnecessary and time-wasting steps and time consuming conferences that are inherent in any organization activity.

Three series available are M or Master, S or selective and SS or super selective.

Models 105 and 110



Particularly suited for use in small offices, service organizations, retail stores or factory groups, where intercommunication between a small group of executives or employees is desired.

Used for the purpose of securing information quickly, handling will-calls and alteration requests; information regarding credits, shipments and for similar purposes. Also used in large homes and apartments and on large estates for convenient and instant communication with servants.

Available in the M series in which the basic unit has complete control of the intercommunication and is not secretive, but speaker microphones can be used for two-way conversation. Also available in the SS series which is secretive and in which each station uses a basic Teletalk unit, each can select stations, call any other station or reply to calls with full secrecy. Available with earphones.

Cabinet is two-tone, solid walnut, hand-rubbed finish. Size, 11½ inches wide, 8½ inches high, 6¼ inches deep. Power supply, 110-125 volts a.c. or d.c., 50-60 cycles. Station capacity, Model 105, 5 stations, Model 110, 10 stations. Power consumption, approximately 35 watts.

Models 206 and 206-A



Ideal for executives of small businesses; advertising agencies, lawyers' offices, architects and consulting engineers, and others, where appearance as well as the utmost operating convenience are the dominating factors.

For in a system made up of these models it is easy to select a station. Simply trip up the key of the station for instant communication. Has a telephone handset for confidential use. A broader service is supplied in the Model 206-A through the annunciator system, which identifies the station that has called in the event the person called was not at his desk at the time of the call.

Available in the M and SS series. (See Model 105.) Cabinet is two-tone solid walnut, with hand-rubbed finish and bronzed speaker grill. Model 206-A has bronzed annunciator panel with indicators of contrasting aluminum finish.

Size, 13½ inches wide, 7½ inches high, 6¼ inches deep. Power supply, 110-125 volts a.c., 50-60 cycles. Station capacity, 6 stations.

Models 212, 212-A and 224



Ideal for professional and service organizations, Models 212, 212-A and 224 offer a wide range of service for executive and inter-department communication in the larger types of business.

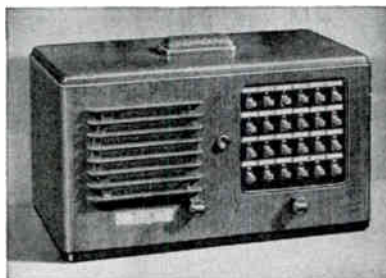
Provide just the type of service demanded in larger organizations. For example, the conducting of conferences without any executive leaving his desk. This is particularly desirable. It means that a conference can be called by simply tripping the Teletalk selector keys bearing the name or number of each executive. As each one trips up the keys of those who are to be a part of the conference, every man listens to the words of the speaker and each one can speak as thoughts occur to him. All the time consumed in going to one office or waiting for the group to gather is eliminated. Has a telephone handset for confidential use.

Available in the M and SS series. (See model 105.)

Cabinet is two-tone solid walnut, with hand-rubbed finish and bronzed speaker grills.

Size, 13½ inches wide, 7½ inches high, 6¼ inches deep. Power supply, 110-125 volts a.c., 50-60 cycles. Station capacity, 12 stations with or without annunciators, 24 stations without annunciators.

Models 512, 512-A and 524



Designed for the business executive who desires the utmost in convenience, appearance, simplified operation, maximum secrecy and the widest possible range of service.

With separate microphone on top of the cabinet. The speaker is for reception only. Has a telephone handset for confidential use. No manual operation of a Talk-Listen switch is required. The user need only trip the keys in the panel to talk with one or a number of stations. If any one of these stations is busy, the green pilot light goes out. The light will go on again as soon as the line is clear. Then proceed to talk. In the event the station with which you wish to communicate is located in a noisy location, the volume can be greatly increased by pushing the extra-volume knob located under the speaker.

Available only in S series.

Cabinet is two-tone burled walnut with hand-rubbed finish and bronzed speaker grill and inbuilt microphone.

Size, 13½ inches wide, 7½ inches high, 6¼ inches deep. Power supply, 110-125 volts a.c., 50-60 cycles. Station capacity, 12 stations with and without annunciators, 24 stations without annunciators.

Send for catalog containing complete information on Teletalk Amplified Intercommunication Systems

Webster Electric Teletalk Amplified Intercommunication Systems

Speaker-Microphones



No. 5A-45B

Many buyers who install a Teletalk Intercommunication System—particularly an M series system—find there are some locations at which the initiation of calls is not necessary.

To meet this requirement and reduce expense for the purchaser, we recommend the use of Speaker-Microphones. However, where paging only is required, Speaker-Microphones will be used at all stations except where the paging originates.

Model 5A-45 will prove highly satisfactory wherever the noise level is low and the room or department is small. This unit can be used with all models in M series for two-way communication; in the S series, for one-way communication and with all paging models.

Model 5A-45B is intended for use only with annunciator models, that is, all models in which the letter A is a part of the model number.

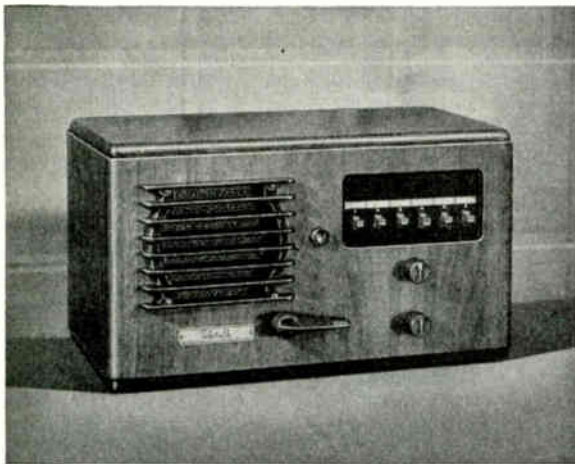
Model 10B-45 is a large, powerful unit which can be used in both M and S series. It is primarily intended for use where the area to be covered by either intercommunication or paging is

large or where the noise level is higher than can be overcome by the power of the No. 5A-45 unit.

Model 8C-45 serves the same purposes as the No. 10B-45 except that it is required where the air has a high moisture content, or where the speaker must be located out-of-doors.

Webster Electric Paging Systems

Models 1006 and 1012



It is an established fact that in paging, an individual responds much quicker to a voice calling his name than he does to a signal which has been assigned to him.

Many people whose places of business are now equipped with Teletalk Intercommunication Systems find that they are not getting maximum benefit from them because of the tendency to use the system to too great an extent for paging. These two models—for paging only—are the answer. They are particularly designed for office paging.

Operation is simple and the scope of service is broad.

Model 1006 has a capacity of six stations. Each station may be paged individually, or by the use of the all-call feature, all stations can be paged at one time.

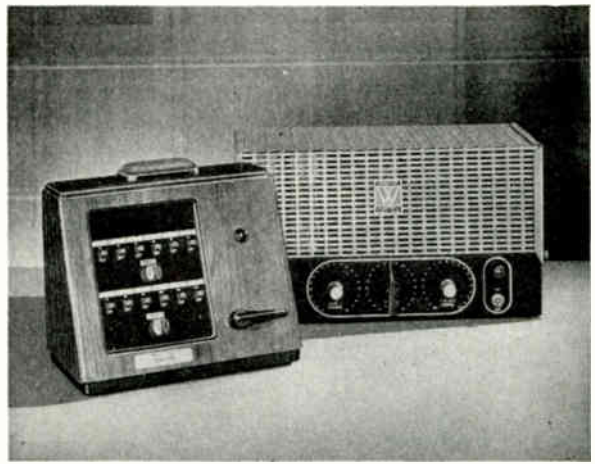
Model 1012 has a capacity of twelve stations. It also has the all-call feature.

Cabinet is two-tone solid walnut, with hand-rubbed finish and bronzed speaker grille.

Size, 13 $\frac{1}{8}$ inches wide, 7 $\frac{7}{8}$ inches high, 6 $\frac{3}{4}$ inches deep. Power supply, 110-125 volts a.c., 50-60 cycles.

Models 10112, 10212, 10124 and 10224

With Amplifier



Designed to bring Teletalk's fine design and excellent tone as an answer to the many requests for a satisfactory system for paging for factories, warehouses and in other locations where the noise level is high.

Features are the inbuilt microphone in the instrument panel, all-call or group-call provisions, a separate, remotely located, beam power amplifier of either 12 or 50 watts output with tamperproof adjustments for tone and volume. The control cabinet, which can be placed on the operator's desk is the only part of the system that need be visible.

Any of the Teletalk speakers or special speakers, if required, can be used with these models.

Cabinet is two-tone solid walnut with hand-rubbed finish. Amplifier is metal enclosed with three-tone, modernistic finish.

Cabinet size, 9 $\frac{3}{8}$ inches wide, 7 $\frac{1}{2}$ inches high, 5 $\frac{1}{4}$ inches deep; 12-watt amplifier size, 13 $\frac{3}{4}$ inches wide, 8 inches high, 7 inches deep. Power supply, 110-120 volts a.c., 50-60 cycles. Station capacity, Model 10112, 12 stations with all-call switch; Model 10212, 12 stations with 2 group-call switches; Model 10124, 24 stations with all-call switch; Model 10224, 24 stations with 2 group-call switches.

Send for catalog containing complete information on Teletalk Amplified Intercommunication and Paging Systems.

Graybar No. 1-A Inter-Phone Systems

Selective Ringing—Selective Talking



No. 6140-C Desk Set



No. 6140-C Wall Set

THE GRAYBAR NO. 1-A SYSTEM is recognized as the most satisfactory interior communication system for general office, factory and institutional use. It is the only system allowing for several simultaneous conversations, and is recommended where instantaneous connections without loss of time are necessary and the highest grade of transmission is required.

In a system consisting of six Inter-Phones, three separate conversations can be carried on at the same time.

Complete instructions and wiring diagrams are furnished with each Inter-Phone in order to guide the installer in the proper installation methods. We have set the standard for Inter-Phone installation practices with the result that after the system has been installed and in operating condition, no further attention is required. The only maintenance necessary is the replacement of dry cell batteries. Even this maintenance is not required when a RectiFilter is used for the battery supply.

PUSH BUTTON CAPACITY: For each station in the system one push button is required in each Inter-Phone. The Inter-Phones are available in standard sizes as follows:

Push Button Capacity.....	6	12	16	20	24
No. of Stations Which May Be Connected in the System..	7	13	17	21	25

CONSTRUCTION OF INTER-PHONES: This No. 6140-C type Inter-Phone consists of a combination key box and cradle type unit. The push button keys and their operating mechanism are mounted in a rigid metal frame.

Finished in dull black with nickel trim.

No. of Buttons	Code No.	Width Inches	KEY BOX ONLY	
			Length Inches	Depth Inches
* 6	6140-C6	5	7½	2½
*12	6140-C12	5	7½	2½
*16	6140-C16	5¾	10¾	2½
*20	6140-C20	5¾	10¾	2½
*24	6140-C24	5¾	10¾	2½

*When ordering, please specify whether desk or wall mounting.

Accessories for Use with Graybar No. 1-A Inter-Phone Systems

Cable

For connections between various stations cable especially designed for Inter-Phones should always be used. This cable includes the necessary number of wire conductors (2 pairs for battery supply, 1 pair for each station in the system) and is furnished in three different types to suit the various locations and conditions. Lead covered cable should always be used especially where there is moisture present, and where there is a possibility of the cable being damaged after its installation. The lead covered cable is an added protection for all installations where the cable is to be run in conduit or exposed locations.

Type	STATIONS				
	7	13	17	21	25
Fireproof Braid No...	244B	246B	248B	249B	250B
Brown Cotton Braid No.	245B	247B	.....	.....	.....
Lead Covered No....	244BS	246BS	248BS	249BS	250BS

Stranded Flexible Cables

Stranded flexible cable is for use with the No. 6140-C Inter-Phone when mounted on a desk, and where it is required to move the Inter-Phone about the desk.

This cable is furnished in silk covered or mercerized brown braid.

Cord Code No.....	418	430	438	446	454
No. Single Conductors.....	18	30	38	46	54
No. of Inter-Phone Buttons.....	6	12	16	20	24

Cable Terminals

A cable terminal should be used wherever a junction is to be made between cables, also for each desk mounting. In cases where cable can be run direct to the Inter-Phone, no cable terminal is necessary. The number of cable terminals required should be determined by the installer.

Width, 5¼ inches. Depth, 2½ inches.

Code No.....	19AC	19BC
Capacity..... pairs	15	27
Length..... inches	8	14
Use with No. of Stations.....	7, 13	17, 21, 25

RectiFilters

RectiFilters are recommended in place of dry cells to deliver noiseless direct current for Inter-Phone systems. These are copperoxide units designed to operate from 110 volts a.c. source and will supply necessary direct current voltage for the talking circuit of the No. 1 system, also alternating current for the ringing circuit.

No.	A.C. Volts	D.C. Volts	D.C. Amps	A.C. Volts	CABINET SIZE			
					Width Inches	Depth Inches	Height Inches	
6RC61D4	115 V.	60 cyc.	6	0.350	6, 12, 18	11½	6½	7½

Graybar No. 11 Inter-Phone Systems
Selective Ringing—Common Talking

For use in residences, banks, institutions, warehouses, where conversations can be limited to one at a time.

Each Inter-Phone in the system is equipped with a number of push buttons (one for each other station in the system). By depressing the button marked with the name or number of the station wanted, the bell at that station will ring and there only. Any station in the system can selectively ring any other station. Only one conversation can be carried on at a time.

The wall type Inter-Phones can be furnished in capacities of 2, 3, 4, 6 and 8 buttons, accommodating 3, 4, 5, 7 and 9 stations respectively in a system.

Nos. 2527 and 2539 Wall Type Inter-Phones



No. 2527C-8



No. 2539C-8

Metal wall Inter-Phones having black enamel finish and made rustproof by the Parker Process.

The No. 2527 type Inter-Phone has a surface mounting metal housing which contains all the talking and signaling apparatus, also a metal back-board with a hinge arrangement for mounting the set to the wall.

The No. 2539 type Inter-Phone has a flush steel face plate on which is mounted all of the talking and signaling apparatus also a metal outlet box and a set of outlet box hangers for mounting the set in the wall.

No. of Buttons	2	3	4	6	8
Surface Type Code No.	2527C-2	2527C-3	2527C-4	2527C-6	2527C-8
Flush Type Code No.	2539C-2	2539C-3	2539C-4	2539C-6	2539C-8

Code No. 2527C-2 to C-8—Surface Type

Dimensions of housing: height, 7½ inches; width, 5 inches; and depth, 2⅝ inches.

Code No. 2539C-2 to C-8—Flush Type

Dimensions of face plate: height, 9 inches; width, 5⅝ inches. Dimensions of outlet box: height, 7½ inches, width, 4 inches, and depth, 2⅝ inches.

The No. 2527C type Inter-Phone can be furnished in larger capacities of 10, 12, 14 and 16 buttons.

No. 6247 Wall Type Handset Inter-Phones

Streamlined in accordance with the modern trend in design.

The case is a durable molded black phenol compound which is mar-resisting and which will give exceptionally long service. The push button unit is entirely enclosed in a handsome mounting attached to the top. A long Duretex cord allows free use of the handset.

Mounted by means of two screws and two bayonet slots, one vertical and one horizontal, to insure firmness and with a minimum of installation work. The hook switch has only one moving part which extends through the case and which is amply protected by the molding and cup hanger. Interior is easily accessible for wiring and inspection.



No. 6247C-8

Code No.	6247C-4	6247C-8
No. of Buttons	4	8
System No.	11	11

Desk and Hand Set Inter-Phones

Furnished in capacities of 4 and 8 buttons, accommodating 5 and 9 stations respectively in a system.

Cradle Type Inter-Phones

Consists of a hand set with a cradle type mounting having push buttons moulded in the base. Hand set is black moulded Bakelite. The Inter-Phone set includes an apparatus box containing a bell and a connecting block.



No. 6245C-8



No. 6239 Hand Set Inter-Phones

Code No.	No. of Buttons
6245C-4	4
6245C-8	8



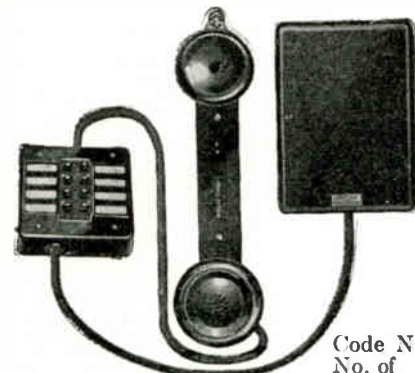
No. 6239C-8

This hand set unit is designed for installation at the side of a desk, on the wall, or any vertical surface, also recommended for residential purposes for mounting at the bedside, either on the bed or on the wall within reach of the bed. The Inter-Phone set includes the metal push button block and apparatus box.

Code No.	6239C-4	6239C-8
No. of Buttons	4	8

No. 6034 Hand Set Inter-Phones

This Inter-Phone consists of a hand set, a push button block and an apparatus box. All metal parts with the exception of the hand set transmitter and receiver unit are finished in black enamel. The hand set has a press-to-talk lever.



No. 6034BH

Code No.	6034BG	6034BH
No. of Buttons	4	8

Accessories for Use with Graybar No. 11 Inter-Phone Systems

Retardation Coil. A No. 51H retardation coil must be ordered separately for installation near the battery of each system.

Cable. Three common wires and one individual wire for each station.

Batteries. Five dry cells are required for the complete operation of this system. If 110-volt alternating current is available a rectifier may be used in place of batteries.

Graybar No. 12 Inter-Phone Systems

Master Station—Common Talking

Consists of one centrally located Master Station Inter-Phone to which are connected other outlying station Inter-Phones. The system provides for communication from a central point to different stations.

The Master Station Inter-Phone is equipped with a number of push buttons; one for each outlying station in the system. By depressing the button marked with the name or number of the outlying station wanted, the bell at that station will ring and there only.

The outlying stations are equipped with only one button which will ring the master station when depressed. Only one conversation can be carried on at a time.

Capacity is one master station and from two to sixteen outlying stations. Wall, desk and handset Inter-Phones may be used in this system for either the master or outlying stations, as indicated in the code number listings.



No. 2527C-8



No. 2539C-8

Wall Type Inter-Phones

Surface Type Code No.	2527C-2	2527C-3	2527C-4	2527C-6	2527C-8
Flush Type Code No.	2539C-2	2539C-3	2539C-4	2539C-6	2539C-8
No. of Buttons.....	2	3	4	6	8

No. 6247 Wall Type Handset Inter-Phones

Code No.	6247C-4	6247C-8
No. of Buttons.....	4	8
System No.	12	12

No. 6239 Handset Inter-Phones

Code No.	6239C-4	6239C-8
No. of Buttons.....	4	8

No. 6245 Cradle Type Handset Inter-Phones

Code No.	6245C-4	6245C-8
No. of Buttons.....	4	8

No. 6034 Handset Inter-Phones

Code No.	6034BG	6034BH
No. of Buttons.....	4	8

Outlying Station—Common Talking

Similar in construction to the master station Inter-Phones except that only one button is provided in each set for ringing the master station.



No. 2527C-1



No. 2539C-1



No. 6247C-1



No. 6239C-1



No. 6042K



No. 6043E

Wall Sets

Code No	2527C-1	2539C-1	6247C-1
Type.....	Surface	Flush	Surface

Handsets

Code No	6245C-1	6239C-1	6042K	6043E
Type.....	Cradle	Surface	Flush	Surface



No. 6245C-1

Accessories for Use with Graybar No. 12 Inter-Phone Systems

Retardation Coil

A No. 51H retardation coil must be ordered separately with each master station Inter-Phone and installed near the battery of the system.

Wiring

For connections between the outlying stations and the master station either cable or insulated wires can be used, depending largely upon the layout of the system. Three common wires are required throughout the system, and in addition, one individual wire from the master to each outlying station. Where there is a long run of a large number of wires, it will be found economical to use cable, and at all distributing and junction points to install connecting blocks. From these connecting blocks separate wires can be run to the Inter-Phones.

The sizes of cable and the number of connecting blocks required should be determined in accordance with the installation instructions.

Batteries

Five dry cells are required for the operation of this system when the distance between the master station and most distant outlying station is 750 feet or less, based on using standard Inter-Phone cable which consists of No. 22 B. & S. gage conductors.

NOTE.—Detailed information covering wiring diagrams, connection of wires and cables, connecting blocks, etc., can be found in our booklet, "Installing and Maintaining Inter-Phones," which will be furnished upon request.

Graybar No. 12A and No. 12AC Inter-Phone Systems

Master Annunciator System—Common Talking

Conforms with Inter-Phone system requirements for schools. For use in the principal's office for registering the calls from the classrooms.

Master station equipment consists of a cradle set Inter-Phone, a push button block with buttons for each outlying station and a drop reset button, a terminal box, and an electric reset annunciator (flush or surface type) equipped with drops for each station in the system.

A brown mercerized cord, 6 feet long, is attached to the push button block. An extra cord eyelet is also provided for attaching the desk stand cord.

The No. 19 type cable terminal, made of hard wood, is equipped with a sheet steel cover.

No. 6245C-O annunciator and cradle set has all-metal, black finish case. Drop indicator is a white arrow which points directly at a drop number. The audible signal is a double adjusting buzzer. Equipped with a 5½-foot connecting cord.

System No. 12A

The principal's or master station equipment consists of an electric reset annunciator and a push button block with one drop and button for each classroom station in the system. The push button block also contains buttons for electrically resetting the operated drops. The principal is signaled from the classroom set by means of the push button on each set.

Master Station							
Push Button Block No.	Cradle Set No.	GROUP CODE No.	Cable Terminal No.	Retard Coil No.	*ANNUNCIATOR CODE No.		No. of Classroom Stations
					Surface	Flush	
190-G10	6245C-0	19AC	51H	403-8	409-8	8	8
190-G12	6245C-0	19AC	51H	403-10	409-10	10	10
190-G14	6245C-0	19AC	51H	403-12	409-12	12	12
190-G16	6245C-0	19AC	51H	403-14	409-14	14	14
190-G18	6245C-0	19AC	51H	403-16	409-16	16	16
190-G20	6245C-0	19AC	51H	403-18	409-18	18	18

Outlying Stations

METAL WALL INTER-PHONES		HANDSET INTER-PHONES			No. of Buttons
Surface	Flush	Cradle Type	Surface Box Type	Flush Box Type	
2527C-1	2539C-1	6245C-1	6043E	6042K	1
			6239C-1		

*Select flush or surface type as required.

System No. 12AC

System No. 12AC differs from No. 12A in that a ring-all button is furnished in the push button block at the principal's station. This button will ring all stations simultaneously for school period purposes and for fire drills.

Master Station

Master Station							
Push Button Block No.	Cradle Set No.	GROUP CODE No.	Cable Terminal No.	Retard Coil No.	†ANNUNCIATOR CODE No.		No. of Classroom Stations
					Surface	Flush	
190R10	6245C-0	19AC	51H	403C-10	409C-10	10	10
190R12	6245C-0	19AC	51H	403C-12	409C-12	12	12
190R14	6245C-0	19BC	51H	403C-14	409C-14	14	14
190R16	6245C-0	19BC	51H	403C-16	409C-16	16	16
190R20	6245C-0	19BC	51H	403C-20	409C-20	20	20
190R24	6245C-0	19BC	51H	403C-24	409C-24	24	24
190R26	6245C-0	2-19AC	51H	403C-26	409C-26	26	26
190R30	6245C-0	1-19AC, 1-19BC	51H	403C-30	409C-30	30	30

Outlying Stations

Equipped with 24-volt ringers. Each with one button.
Code No. 2527AC-1 2539AC-1 6245AC-1
Type Surface Flush Cradle
†Unless otherwise specified, No. 403 type will be furnished.

Wiring and Battery Requirements

Two wires common to all stations in the system and two individual wires for each outlying station.

System No. 12A requires a battery of five dry cells, connected in series, to furnish current for ringing and talking.

System No. 12AC requires a battery of dry cells or storage batteries to total 24 volts to furnish current for the ringing and talking battery supply.

Graybar No. 12B and No. 12C Inter-Phone Systems

Master Annunciator System

Provides for communication between a master station annunciator and a number of outlying stations.

The master annunciator is equipped with a hand set Inter-Phone, and can be obtained with or without push buttons.

System No. 12B—1-Way Ringing

The annunciator is equipped with push buttons, enabling the outlying stations to ring the master station but the master station cannot ring the outlying stations.

System No. 12C—2-Way Ringing

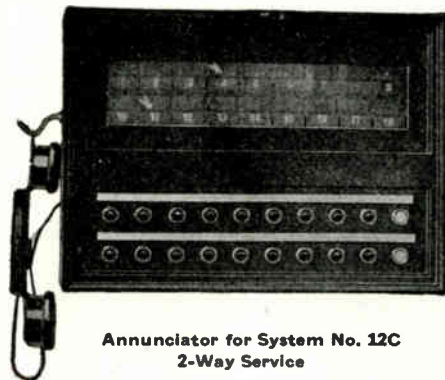
The annunciator is equipped with push buttons, one for each outlying station, enabling the outlying stations to ring the master station and the master station to ring the outlying stations individually.

Each outlying station is equipped with a push button for signaling the master station. The call will also be registered at the master station annunciator.

Only one conversation can be carried on at a time.

Capacity is one master station and any number of outlying stations up to twenty-four or more.

Master Station Annunciators



Annunciator for System No. 12C
2-Way Service

The annunciator is equipped complete with electrical reset drops for each outlying station. The indication is a white arrow which points directly at the number plate. It can be easily seen from any angle. The annunciator includes push buttons for resetting the drops and terminals for the reset buttons to permit remote restoring of the drops.

CODE No.		No. of Drops	CODE No.		No. of Drops
For No. 12B	For No. 12C		For No. 12B	For No. 12C	
1204B	1204C	4	1216B	1216C	16
1206B	1206C	6	1220B	1220C	20
1208B	1208C	8	1224B	1224C	24
1210B	1210C	10	1230B	1230C	30
1212B	1212C	12			

A No. 1003D Handset must be ordered separately with each annunciator. This set is equipped with a 3-foot cord, and can be hung on the hook on the side of the annunciator.

Outlying Stations

METAL WALL INTER-PHONES		HANDSET INTER-PHONES		No. of Buttons
Surface	Flush	Surface	Flush	
2527C-1	2539C-1	6043D	6042M	1

Wiring

For System No. 12B one wire, common to all stations in the system, and in addition, one individual wire from the master station to each outlying station.

For System No. 12C one wire, common to all stations in the system, also two individual wires from the master station to each outlying station.

Batteries

Only one battery is required for the operation of the system. This should consist of three or four dry cells, where the distance between the master station and the farthest outlying station is 250 feet or less, and No. 22 B. & S. gage copper wire is used. On lines of greater length it is recommended that instead of increasing the number of dry cells to more than four, larger wires be used.

NOTE.—Detailed information for installing, wiring, diagrams, battery requirements, cable connections, etc., are included in our bulletin, "Installing and Maintaining Graybar Inter-Phones," which will be furnished upon request.

Graybar No. 12SS Inter-Phone Systems

Master Station Secret Service

Provides non-interfering or secret service between the master station and any number of outlying stations. The master station can connect his line to any one of the outlying stations and no other outlying station can listen in on the conversation.

The master station will press the button of the station to be called to its "way-down" position. This will ring the bell at the outlying station and the button in the key box will remain locked in the "talking position." This button will be reset when the master station operator makes another call.

Each outlying station is equipped with a push button for calling the master. This will signal the master and will operate the annunciator drop. The master station operator will answer the call by operating the button in the key box corresponding to the number of the drop.

Capacity is one master station and from six to twenty-four outlying stations.

Master Station Equipment

Desk Set Key Box No.	Cradle Set No.	Cable Terminal No.	Flexible Cable Code No.	ANNUNCIATOR CODE NO.			No. of Outlying Stations
				Surface	Flush	Desk	
328C-6	1245C-0	19-AC	418	403-6	409-6	673-6	6
328C-12	1245C-0	19-AC	430	403-12	409-12	673-12	12
328C-16	1245C-0	19-BC	438	403-16	409-16	673-16	16
328C-20	1245C-0	19-BC	446	403-20	409-20	673-20	20
328C-24	1245C-0	19-BC	454	403-24	409-24	673-24	24

The last button in each key box may be used for annunciator reset if wall type of annunciators are to be furnished. This means that one outlying station must be deducted from the total number mentioned above.

Outlying Stations

METAL WALL Surface	INTER-PHONES Flush	HANDSET INTER-PHONES			No. of Buttons
		Cradle Type	Surface Box Type	Flush Box Type	
2527C-1	2539C-1	6245C-1	6043E	6042K	1
.....	.....	.....	6239C-1	.....	.....

Wiring and Battery Requirements

Only one battery is required for furnishing the talking and ringing current. Not more than five dry cells should be used for this battery. This will take up to 750 feet of No. 22 B. & S. gage Inter-Phone cable wire. On lines of greater length, larger wires should be used as follows:

- 750—1,000 feet No. 20 B. & S. gage
- 1,000—1,500 feet No. 18 B. & S. gage
- 1,500—2,500 feet No. 16 B. & S. gage

Graybar No. 14 and No. 14C Inter-Phone Systems

Two-Station Private Line

For use where only two stations are required. Either station can ring the other by simply depressing the push button of the set.

System No. 14

Requires two wires for connecting the Inter-Phones. Dry cells must be installed at each station.

System No. 14C

Requires three wires for connecting the Inter-Phones. Dry cells are required at one station only.

Types of Inter-Phones

Wall, desk or handset Inter-Phones may be used interchangeably.

METAL WALL Surface	INTER-PHONES Flush	HANDSET INTER-PHONES			No. of Buttons
		Cradle Type	Surface Box Type	Flush Box Type	
2527C-1	2539C-1	6245B-1	6043P	6042AE	1
.....	.....	.....	6239B-1	.....	.....

Wiring and Battery Requirements

System No. 14 requires three dry cells at each station for both talking and ringing service. If the length of line is more than 750 feet, additional dry cells are required.

System No. 14C requires five dry cells at one station for both talking and ringing purposes. If the line length is more than 750 feet, larger wires should be used in accordance with installation instructions given in our installation bulletin.

NOTE.—Refer also the description of Inter-Phone outfits composed of two handset Inter-Phones and the necessary installing material complete.

Graybar No. 15 Inter-Phone Systems

Code Ringing—Common Talking

Each station is equipped with one push button which, when depressed, rings the bells at all the other stations.

The various stations are called by signaling each one with a different code ring; for instance, two rings for Station No. 2, three rings for Station No. 3, etc.

Two to six stations may be operated in this system.

METAL WALL Surface	INTER-PHONES Flush	HANDSET INTER-PHONES			No. of Buttons
		Cradle Type	Surface	Flush	
2527C-1	2539C-1	6245D-1	6043CD	6042CD	1
.....	.....	.....	6239D-1	.....	1

Accessories

A No. 51H retardation coil must be ordered separately and installed near the battery of the system.

Four wires are required for connecting the Inter-Phones.

Only one battery is required to furnish current for talking and ringing. Do not use more than five dry cells connected in series. The battery requirements of this system are determined by the number of Inter-Phones to be connected, the length of line, and the size of wire to be used. Further information furnished upon request.

Graybar No. 18C Inter-Phone Systems

Master Annunciator System—Non-Interfering

Provides for communication between a central or master station and a large number of outlying stations. The master station can selectively ring and talk with any of the outlying stations and the outlying stations can call the master station. Communication can be arranged between any two outlying stations through the medium of a connecting cord at the master station.

Master Station Annunciators

The master station, surface-mounting type annunciator is equipped with an electrical reset drop and metallic push for each outlying station. The equipment includes push buttons for resetting the drops and a ringing button for calling the stations. Each annunciator is furnished with an answering cord and a connecting cord. Extra connecting cords can be furnished as required.

Code No.	No. Drops & Jacks	Ht. In.	Wdth. In.	Dpth. In.	Code No.	No. Drops & Jacks	Ht. In.	Wdth. In.	Dpth. In.
1810-C	10	15 ¹ / ₈	11 ¹ / ₄	5 ¹ / ₄	1849-C	49	23 ³ / ₄	23 ¹ / ₄	5 ¹ / ₄
1814-C	14	15 ¹ / ₈	14 ¹ / ₄	5 ¹ / ₄	1856-C	56	23 ³ / ₄	24 ³ / ₄	5 ¹ / ₄
1816-C	16	15 ¹ / ₈	17 ¹ / ₄	5 ¹ / ₄	1864-C	64	28 ¹ / ₈	23 ¹ / ₄	5 ¹ / ₄
1820-C	20	15 ¹ / ₈	18 ³ / ₄	5 ¹ / ₄	1872-C	72	28 ¹ / ₈	26 ¹ / ₄	5 ¹ / ₄
1825-C	25	19 ³ / ₈	17 ¹ / ₄	5 ¹ / ₄	1881-C	81	32 ³ / ₈	24 ³ / ₄	5 ¹ / ₄
1830-C	30	19 ³ / ₈	18 ³ / ₄	5 ¹ / ₄	1890-C	90	32 ³ / ₈	26 ¹ / ₄	5 ¹ / ₄
1836-C	36	19 ³ / ₈	21 ¹ / ₄	5 ¹ / ₄	1900-C	100	32 ³ / ₈	29 ¹ / ₄	5 ¹ / ₄
1842-C	42	23 ³ / ₈	20 ¹ / ₄	5 ¹ / ₄	.....	.....	.....	.....	.....

A No. 1003K Handset Inter-Phone must be ordered separately for each annunciator. Equipped with 3-foot cord.

Outlying Stations

METAL WALL Surface	INTER-PHONES Flush	HANDSET INTER-PHONES		No. of Buttons
		Surface	Flush	
2527C-1	2539C-1	6043D	6042M	1

Accessories

One wire, common to all stations in the system is required, and, in addition, two individual wires between the master and each outlying station. Where there is a long run of a large number of wires, it will be found economical to use cable and install cable terminals or connecting blocks at all distributing and junction points.

Five or more dry cells are required for operating the system. The cells can be placed in the basement or any other accessible place. If 110 volts alternating current is available, a power filter may be used.

NOTE.—Detailed information for installing, including wiring diagrams, battery requirements, cable connections, etc., are included in our bulletin, "Installing and Maintaining Inter-Phones," which will be furnished upon request.

Graybar No. 31A and No. 31B Inter-Phone Outfits

Outfits consist of two Inter-Phones with all necessary wiring material and installation data (excepting batteries) for installation in the home or in the business office.

No. 31A, for inside installation; No. 31B for inside or outside installation.

Graybar Wall Inter-Phones
Selective Ringing—Common Talking

No. 2527C, Surface Type
0 to 8 Button Capacity



No. 2527C-4

Sheet steel housing equipped with hinge hooks which match slots in the base of the metal backboard. This arrangement permits fastening the backboard in place on the wall and then mounting the housing unit to it.

The metal backboard is designed to permit the entrance of wires or cabling from either the top, bottom or center of the set. A metal guide ring is located near the cable entrance at the base of the backboard so that the connecting wires may be looped through this ring to hold them in place and provide a proper

bending point when the housing is swung forward.

Dimensions of housing: height, 7½ inches; width, 5 inches; depth, 2⅝ inches.

Watch-case type receivers are regularly furnished with these Inter-Phones.

Durable dull black enamel finish with chrome nickel trimmings.

Code No.	No. of Buttons	For System
2527C-0	0	20, 21
2527C-1	1	12, 14, 15, 18, 20, 21
2527C-2	2	20, 21, 22
2527C-3	3	11, 12, 20, 21
2527C-4	4	11, 12
2527C-6	6	11, 12
2527C-8	8	11, 12
2527A	0	108, 116, 1801, P.B.X.
2527AC-1	1	12AC
2527AP	0	109, 117, P.B.X.

10 to 16 Button Capacity

Designed for systems where larger than 8-button capacity Inter-Phones are required. Set is composed of a wall type Inter-Phone and a metal push button unit, both of which are mounted on a wood backboard.

Code No.	No. of Buttons	COMPOSED OF			For System
		Inter-Phone	Push Button	Back-board	
2527C-10	10	2527C-2	108A	3A	11, 12, 20, 21
2527C-12	12	2527C-4	108A	3A	11, 12, 20, 21
2527C-14	14	2527C-6	108A	3A	11, 12, 20, 21
2527C-16	16	2527C-8	108A	3A	11, 12, 20, 21



No. 2539C-2

No. 2539C, Flush Type

Set consists of a flush steel face plate on which is mounted all of the talking and signaling apparatus. Included also is a metal outlet box for mounting the set in the wall.

Dimensions of face plate: height, 9 inches; width, 5⅝ inches. Dimensions of outlet box for wall opening: height, 7½ inches; width, 4 inches; depth, 2⅝ inches.

Durable dull black enamel finish with chrome nickel trimmings.

Code No.	No. of Buttons	For System
2539C-0	0	20, 21
2539C-1	1	12, 14, 15, 18, 20, 21
2539C-2	2	20, 21, 22
2539C-3	3	11, 12, 20, 21
2539C-4	4	11, 12
2539C-6	6	11, 12
2539C-8	8	11, 12
2539AC-1	1	12AC
2539A	0	108, 1801
2539AP	0	109

No. 6247 Graybar Wall Type Handset Inter-Phones
Selective Ringing—Common Talking

For System No. 11

The push button unit is entirely enclosed in a mounting attached to the top. A long Duretex cord allows free use of the handset.

The hook switch has only one moving part which extends through the case and which is amply protected by the molding and cup hanger. Interior is easily accessible for wiring and inspection.

Mounted by means of two screws and two bayonet slots—one vertical and one horizontal, to insure firmness.

Case is streamlined, molded black phenol compound; mar-resisting.



Code No.	No. of Buttons	For System
6247C-4	4	11
6247C-8	8	11

For System No. 12, No. 20 and No. 21

For master station and apartment house systems, one and two button sets.

In a master system or apartment with door opener only, or for calling or signaling one point, use the No. 6247C-1. In an apartment where two points are to be signaled, use the No. 6247C-2.

Code No.	No. of Buttons	For System
6247C-1	1	12, 20, 21
6247C-2	2	20, 21

Graybar Handset Inter-Phones
Selective Ringing—Common Talking
No. 6034 Type



This Inter-Phone consists of a light-weight type of handset, a metal push button block and an apparatus box. The push button block is equipped with cord and terminals for connecting the handset cord. The apparatus box contains necessary connecting block for making the line connection and a bell for signaling.

Code No.	No. of Buttons	COMPOSED OF				For System
		Handset Cord Feet	Push Button Block Cord Feet	Apparatus Box		
6034BG	4	1003AD 6	104AC 6	35B	11, 12	
6034BH	8	1003AD 6	108AC 6	35B	11, 12	

No. 6239 Type

Designed for installation at the side of a desk, on the wall, or any vertical surface. The set may be installed at one end, side or in the alcove of the desk. Also recommended for residential purposes for mounting at the bedside, either on the bed or on the wall within reach of the bed.

Made of bakelite, reinforced.

The switch-hook unit for holding the handset in place. This hook operates on the same principle as the standard telephone hook.

Dimensions of box: 2¾x2½x4 inches. A 4-foot cord connects the handset to the switch-hook box.

Code No.	No. of Buttons	COMPOSED OF				For System
		Handset & Switch Box	Push Button Block	Apparatus Box	Connecting Block	
6239B-1	1	1239B-1	.....	.....	15	14, 14C
6239C-1	1	1239C-1	.....	.....	15	12
6239D-1	1	1239D-1	.....	.....	15	15
6239C-4	4	1239CB	104AC	35B	.....	11, 12
6239C-8	8	1239CB	108AC	35B	.....	11, 12

Graybar Cradle Type Handset Inter-Phones

Selective Ringing—Common Talking



No. 6245B-1

The most convenient type of talking equipment available, as the transmitter and receiver are part of the handset which can be held with one hand.

The handset is made of phenol fiber and designed to conform with the contour of the head.

The cradle mounting for supporting the handset consists of a phenol fiber base with a black enamel finish. It contains a switch for closing the talking circuit when the handset is removed from the stand and opens the circuit when the handset is replaced on the mounting.

The No. 6245C-0 Inter-Phone is for general use, where a handset is required without the push buttons or signals included. The set is equipped with a two-conductor cord and a connecting block with two terminals for line connections.

The No. 6245B-1, C-1, D-1 and AC-1 are each equipped with a push button and buzzer which are mounted in the base of the cradle stand.

The four and eight button types have the push buttons mounted on the base of the stand (including the blank name or number plates). The apparatus box used with these sets contains the bell and connecting block for making line connections.



No. 6245C-8

Code No.	No. of Buttons	HANDSET AND CRADLE		Cord Feet	Buzzer (In Base)	Connect- ing Block	Appa- ratus Box	For System
		Code No.	Code No.					
6245C-0	0	1245C-0	6	6		14		
6245B-1	1	1245B-1	6	6	No. 0-C	15		14, 14C
6245C-1	1	1245C-1	6	6	No. 0-C	15		12
6245D-1	1	1245D-1	6	6	No. 0-C	15		15
6245AC-1	1	1245AC-1	6	6	Special	15		12AC
6245C-4	4	1245C-4	6	6			35B	11, 12
6245C-8	8	1245D-8	6	6			35B	11, 12

Graybar Handset Inter-Phones

Selective Ringing—Common Talking

The Inter-Phone transmitter and receiver are a part of the handset. A bar marked Press to Talk mounted in the handle is held down by the natural position of the hand while talking. When not in use, the handset can be hung on a hook or laid down in any position.

Finished in dull black.

No. 6043, Surface Mounting



Surface Mounting Apparatus Units (No. 383 Type) are equipped with an insulated base, black finished round metal cover and nickel hook. Approximate size, $3\frac{1}{8}$ inches in diameter by $1\frac{1}{8}$ inches deep. Handset cord is permanently attached to apparatus unit.

Code No.	No. of Buttons	HANDSET		Cord Feet	Appa- ratus Box	For System
		Code No.	Code No.			
6043E	1	1003J	3	3	383J	12, 12A
6043D	1	1003E	3	3	383J	12B, 18C
6043P	1	1003AB	3	3	383J	14, 14C
6043CD	1	1003N	3	3	383CD	15

No. 6042, Flush Mounting



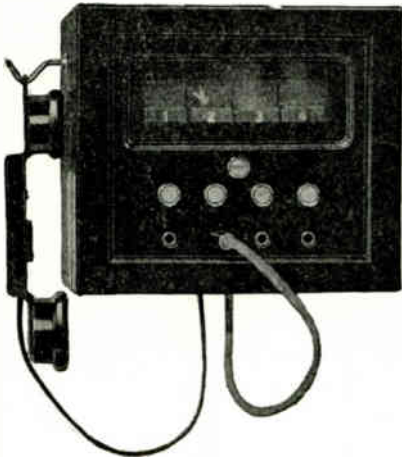
Flush Mounting Apparatus Boxes (No. 382 Type) are intended to be set in the wall and are equipped with a brush brass finished face plate. These boxes consist of three parts—a Gem A Union sectional switchbox, an apparatus unit, and a face plate. The face plate is $4\frac{1}{2} \times 2\frac{3}{4}$ inches; the wall box, $2 \times 3 \times 3$ inches deep.

Except on No. 6042K, the handset cord is permanently attached to the box. On No. 6042K the cord is equipped with a plug which can be inserted or removed from the receptacle located in the center of the face plate.

An important point to be observed is that wall box and face plate are the same as those used in electric light wiring for push button switches.

Code No.	No. of Buttons	HANDSET		Cord Ft.	APPARATUS		For System
		Code No.	Code No.		Switchbox	Face Plate No.	
6042K	1	1003G	3	3	382EB	Gem A 12007	12, 12A
6042M	1	1003K	3	3	382JB	Gem A 12007	12B, 18C
6042AF	1	1003AA	3	3	382JB	Gem A 12007	14, 14C
6042CD	1	1003N	3	3	383CD	Gem A 12007	15

Graybar Annunciators
Janitor Answering and Calling Annunciators
For Sectional Talking System No. 22



Nos. 2202-D to 2206-D

There are three main types of janitor's answering and calling annunciators for sectional talking Systems 22-D, G and J, depending upon the service requirements.

The annunciators are equipped with a hook on one side for mounting a handset Inter-Phone, also a cord bushing for the entrance of the handset cord.

The annunciators are finished in Black Duco.

Annunciators for System No. 22-D

Equipped with electrical reset drops, one for each section of the system, also a jack for each section for answering calls. Push buttons are provided for opening the doors of each section and for electrically resetting the operated drops.

Code No.	No. of Drops Jacks and Door Buttons	For No. of Sections
2202-D	2	2
2203-D	3	3
2204-D	4	4
2205-D	5	5
2206-D	6	6

Additional sections may be ordered as required.

Annunciators for System No. 22-G

Equipped with electrical reset drops, one for each section of the system, also a jack for each section for calling and receiving calls. Push buttons are provided for calling each apartment and for opening the doors of each section, also for electrically resetting the operated drops.

Code No.	No. of Calling Buttons	No. of Drops Jacks and Door Buttons	For No. of Sections
2202-G	12	2	2
2203-G	18	3	3
2204-G	24	4	4
2205-G	30	5	5
2206-G	36	6	6

Additional sections and additional apartment push buttons may be ordered as required.

Annunciators for System No. 22-J

Equipped with electrical reset drops, one for each apartment in each section of the system, also a jack for each section for calling and receiving calls. Push buttons are provided for calling each apartment and for opening the doors of each section, also for electrically resetting the operated drops.

Code No.	No. of Drops	No. of Calling Buttons	No. of Jacks and Door Buttons	For No. of Sections
2202-J	12	12	2	2
2203-J	18	18	3	3
2204-J	24	24	4	4
2205-J	30	30	5	5
2206-J	36	36	6	6

Additional sections and additional drops and push buttons may be ordered as required.

A No. 1003K handset Inter-Phone must be ordered separately with each annunciator. This set is equipped with a 3-foot cord, and can be hung on the hook on the side of the annunciator. Handset has black finish.

Graybar Apartment House Inter-Phone Systems

Graybar Apartment House Inter-Phone Systems are designed to provide service between the vestibule, apartments, janitor and tradesmen. The systems are planned throughout with the utmost care to cover the practical service requirements of apartment houses.

There are two main types of systems, the selection of which depends upon the individual service requirements.

Common Talking Systems

By common talking is meant that only one conversation can take place at a time in the system between the vestibule, janitor's or tradesmen's Inter-Phone and any one of the apartment Inter-Phones.

Common talking systems are divided into groups known as Systems No. 20 and No. 21.

System No. 20 consists of a vestibule set equipped with the usual hand receiver with flexible armored cord. This system in turn is divided into different groups to conform with the service requirements between the vestibule, janitor or tradesmen's and the apartments, and known as Systems 20-A, D, E, G, H and J.

System No. 21 includes the loud-speaking vestibule set and is divided into groups known as Systems 21-A, D, E, G, H, J, AR, DR and GR.

Sectional Talking Systems

Sectional talking systems are recommended where the same janitor serves several buildings, each having one or more vestibule entrances or one building having several vestibule entrances. This system consists of two or more common talking systems terminating at one janitor's station and connected so as to permit conversation taking place between each vestibule and apartment group without interference. These systems are coded as No. 22. System No. 22 is arranged with the vestibule set having the usual hand receiver with flexible armored cord.

This system is in turn divided into groups to conform with the service requirements between the vestibule, janitor or tradesmen and the apartment. They are known as Systems 22-D, G and J.

Graybar No. 22 Apartment House Inter-Phone Systems
Sectional Common Talking Systems

These systems consist of two or more common talking systems (System No. 20) each section terminating at one janitor's annunciator and connected so as to permit conversation taking place between each vestibule and apartment group without interference. Vestibule equipment consists of two or more No. 1520-R armored receiver cord type Inter-Phones, push button plates, and mail boxes.

System No. 22-D

Vestibule can call apartments and janitor; apartments can call janitor and open door. Janitor can open doors. For apartments: No. 2527C-2 surface wall Inter-Phone, two buttons (for janitor and door); or No. 2539C-2 flush wall Inter-Phone, two buttons (for janitor and door). For janitor: No. 2202-D to 2206-D Annunciator (depending upon the number of drops, jacks and door buttons required), and No. 1003K handset Inter-Phone.

System No. 22-G

Vestibule can call apartments and janitor; apartments can call janitor and open door. Janitor can call each apartment and open doors. For apartments: No. 2527C-2 surface wall Inter-Phone, two buttons (for janitor and door); or No. 2539C-2 flush wall Inter-Phone, two buttons (for janitor and door). For janitor: No. 2202-G to 2206-G Annunciator (depending upon the number of drops, jacks and push buttons required), and No. 1003K handset Inter-Phone.

System No. 22-J

Vestibule can call apartment and janitor; apartments can call janitor (individual drops) and open door. Janitor can call each apartment and open doors. For apartments: No. 2527C-2 surface wall Inter-Phone, two buttons (for janitor and door); or No. 2539C-2 flush wall Inter-Phone, two buttons (for janitor and door). For janitor: No. 2202-J to 2206-J Annunciator (depending upon the number of drops, jacks and push buttons required), and No. 1003K handset Inter-Phone.

Graybar No. 20 Apartment House Inter-Phone Systems

Selective Ringing—Common Talking



There are six combinations of the No. 20 System, differing from each other in the number of locations in the apartments which are to be connected for inter-communicating service.

Only one conversation can be carried on at a time.

The general vestibule equipment consists of the No. 1520-R armored receiver cord type Inter-Phone, push button plate, and mail boxes as required.

System No. 20-A

Vestibule can call apartments; apartments can open door. For apartments: No. 2527C-0 surface wall Inter-Phone, No. 2527C-1 surface wall Inter-Phone (button for door), No. 2539C-0 flush wall Inter-Phone, or No. 2539C-1 flush wall Inter-Phone (button for door).

System No. 20-D

Vestibule can call apartments and janitor; apartments can open door and call janitor. For apartments: No. 2527C-1 surface wall Inter-Phone, one button (for janitor); No. 2527C-2 surface wall Inter-Phone, two buttons (for janitor and door); No. 2539C-1 flush wall Inter-Phone, one button (for janitor); or No. 2539C-2 flush wall Inter-Phone, two buttons (for janitor and door). For janitor or laundry: one No. 2527C-0 surface wall Inter-Phone.

System No. 20-E

Vestibule can call apartments and janitor; apartments can open door and call janitor and laundry. For apartments: No. 2527C-2 surface wall Inter-Phone, two buttons (for janitor and laundry); No. 2527C-3 surface wall Inter-Phone, three buttons (for janitor, laundry and door); No. 2539C-2 flush wall Inter-Phone, two buttons (for janitor and laundry); or No. 2539C-3 flush wall Inter-Phone, three buttons (for janitor, laundry and door). For janitor and laundry: two No. 2527C-0 surface wall Inter-Phones.

System No. 20-G

Vestibule can call apartments and janitor; apartments can open door and call janitor, and janitor can call apartments. For apartments: No. 2527C-1 surface wall Inter-Phone, one button (for janitor); No. 2527C-2 surface wall Inter-Phone, two buttons (for janitor and door); No. 2539C-1 flush wall Inter-Phone, one button (for janitor); or No. 2539C-2 flush wall Inter-Phone, two buttons (for janitor and door). For janitor or laundry: one No. 2527C-2 to 2527C-16 surface wall Inter-Phone (depending upon number of push buttons required).

System No. 20-H

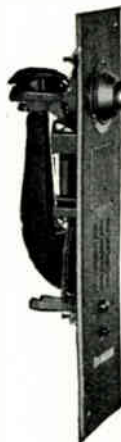
Vestibule can call apartments and janitor; apartments can open door and call janitor and laundry, janitor and laundry can call apartments. For apartments: No. 2527C-2 surface wall Inter-Phone, two buttons (for janitor and laundry); No. 2527C-3 surface wall Inter-Phone, three buttons (for janitor, laundry and door); No. 2539C-2 flush wall Inter-Phone, two buttons (for janitor and laundry); or No. 2539C-3 flush wall Inter-Phone, three buttons (for janitor, laundry and door). For janitor and laundry: two Nos. 2527C-2 to 2527C-16 surface wall Inter-Phones (depending upon number of push buttons required).

System No. 20-J

Vestibule can call apartments and janitor; apartments can open door and call janitor, and janitor can call apartments. For apartments: No. 2527C-1 surface wall Inter-Phone, one button (for janitor); No. 2527C-2 surface wall Inter-Phone, two buttons (for janitor and door); No. 2539C-1 flush wall Inter-Phone, one button (for janitor); or No. 2539C-2 flush wall Inter-Phone, two buttons (for janitor and door). For janitor: No. 2010 to 2100 Annunciator (depending upon the number of drops and push buttons required), and No. 1003K handset Inter-Phone.

Graybar No. 21 Apartment House Inter-Phone Systems

Selective Ringing—Common Talking



The general vestibule equipment consists of the No. 1524-E & F loud speaking, cordless type Inter-Phone, push button plate, and mail boxes as required.

System No. 21-A & AR

Vestibule can call apartments; apartments can open door. For vestibule: No. 1524-E Inter-Phone (with Press to Talk button), or No. 1524-F Inter-Phone (relay operated). For apartments: No. 2527C-0 surface wall Inter-Phone, No. 2527C-1 surface wall Inter-Phone (button for door), No. 2539C-0 flush wall Inter-Phone, or No. 2539C-1 flush wall Inter-Phone (button for door).

No. 1524-E

System No. 21-D & DR

Vestibule can call apartments and janitor; apartments can open door and call janitor. For vestibule: No. 1524-E Inter-Phone (with Press to Talk button), or No. 1524-F Inter-Phone (relay operated). For apartments: No. 2527C-1 surface wall Inter-Phone, one button (for janitor); No. 2527C-2 surface wall Inter-Phone, two buttons (for janitor and door); No. 2539C-1 flush wall Inter-Phone, one button (for janitor); or No. 2539C-2 flush wall Inter-Phone, two buttons (for janitor and door). For janitor or laundry: No. 2527C-0 surface wall Inter-Phone.

System No. 21-E

Vestibule can call apartments and janitor; apartments can open door and call janitor and laundry. For vestibule: No. 1524-E Inter-Phone. For apartments: No. 2527C-2 surface wall Inter-Phone, two buttons (for janitor and laundry); No. 2527C-3 surface wall Inter-Phone, three buttons (for janitor, laundry and door); No. 2539C-2 flush wall Inter-Phone, two buttons (for janitor and laundry); or No. 2539C-3 flush wall Inter-Phone, three buttons (for janitor, laundry and door). For janitor and laundry: two No. 2529C-0 surface wall Inter-Phones.

System No. 21-G & GR

Vestibule can call apartments and janitor; apartments can open door and call janitor, and janitor can call apartments. For vestibule: No. 1524-E Inter-Phone (with Press to Talk button), or No. 1524-F Inter-Phone (relay operated). For apartments: No. 2527C-1 surface wall Inter-Phone, one button (for janitor); No. 2527C-2 surface wall Inter-Phone, two buttons (for janitor and door); No. 2539C-1 flush wall Inter-Phone, one button (for janitor); or No. 2539C-2 flush wall Inter-Phone, two buttons (for janitor and door). For janitor or laundry: No. 2527C-2 to 2527C-16 surface wall Inter-Phone (depending upon number of push buttons required).

System No. 21-H

Vestibule can call apartments and janitor; apartments can open door and call janitor and laundry; janitor and laundry can call apartments. For vestibule: No. 1524-E Inter-Phone. For apartments: No. 2527C-2 surface wall Inter-Phone, two buttons (for janitor and laundry); No. 2527C-3 surface wall Inter-Phone, three buttons (for janitor, laundry and door); No. 2539C-2 flush wall Inter-Phone, two buttons (for janitor and laundry); or No. 2539C-3 flush wall Inter-Phone, three buttons (for janitor, laundry and door). For janitor and laundry: two Nos. 2527C-2 to 2527C-16 surface wall Inter-Phones (depending upon number of push buttons required).

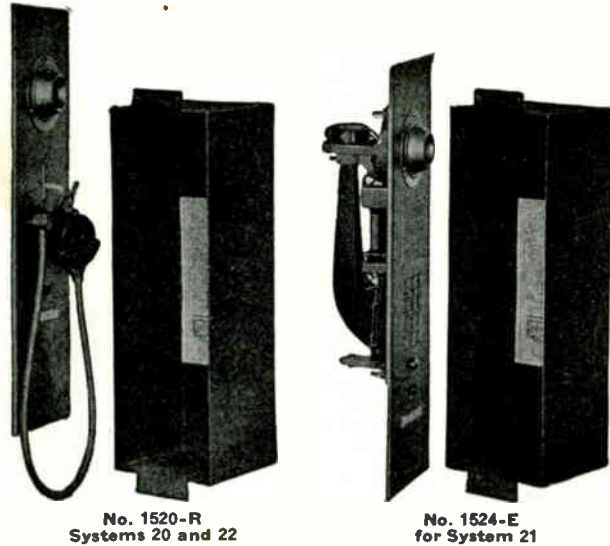
System No. 21-J

Vestibule can call apartments and janitor; apartments can open door and call janitor, and janitor can call apartments. For vestibule: No. 1524-E Inter-Phone. For apartments: No. 2527C-1 surface wall Inter-Phone, one button (for janitor); No. 2527C-2 surface wall Inter-Phone, two buttons (for janitor and door); No. 2539C-1 flush wall Inter-Phone, one button (for janitor); or No. 2539C-2 flush wall Inter-Phone, two buttons (for janitor and door). For janitor: No. 2010 to 2100 Annunciator (depending upon the number of drops and push buttons required).



No. 1524-F

Graybar Vestibule Inter-Phones



No. 1520-R
Systems 20 and 22

No. 1524-E
for System 21

These are flush wall mounting vestibule Inter-Phones conforming with the 16½-inch size mail boxes. The sets are designed for common talking selective ringing service for Systems 20, 21 and 22.

The No. 1520-R Inter-Phone is recommended for apartment house service where the requirements call for an inexpensive vestibule set equipped with the regulation watch-case type receiver with armored cord.

The No. 1524-E Inter-Phone set is recommended for apartment house service where a loud speaking type vestibule set is required, and where it is necessary to operate a talking button to carry on a conversation with the apartment.

The No. 1524-F Inter-Phone is recommended for apartment house service where a loud speaking type vestibule set is required. This unit differs from the No. 1524-E in that it is equipped with a relay in place of the talking button, so that the talking circuit is automatically closed through the operation of the relay when the apartment party removes the receiver from the switch hook enabling the party in the vestibule to communicate directly with the apartment without any further operation.

The apparatus block is made of hard maple wood, boiled in oil, and stained black. This block supports the transmitting and receiving apparatus of the set.

The face plate is drawn brass, having squared corners to match up with the mail boxes. It is equipped with a metal transmitter mouthpiece. A push button name plate holder is furnished for the janitor button. Four corner mounting screw holes are provided for mounting by means of wood screws. On the No. 1524-E set an instruction plate for operating the set is fastened below the transmitter mouthpiece.

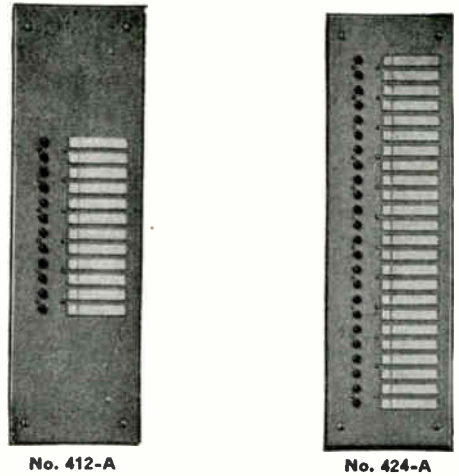
Each Inter-Phone set includes an outlet box. This box has flanges at the top and bottom for mounting. Knockouts are provided at the top and bottom and both sides of the box for the entrance of ½-inch conduit or connecting wires. The dimensions of the outlet box are 14x4¾x4½ inches.

Each set includes a circuit label, also a label showing the wall-cut dimensions for mounting the Inter-Phones and the associated push button plates and mail boxes.

The Inter-Phone sets are finished in bronze brass, and the steel or iron parts with the exception of the transmitter and receiver unit are treated with the Parker rust-proof process.

Code No.	Face Plate Inches	For System
1520-R	5x16½	20-A, D, E, G, H, J, 22-D, G, J
1524-E	5x16½	21-A, D, E, G, H, J
1524-F	5x16½	21-AR, DR, GR

Graybar Push Button Plates



No. 412-A

No. 424-A

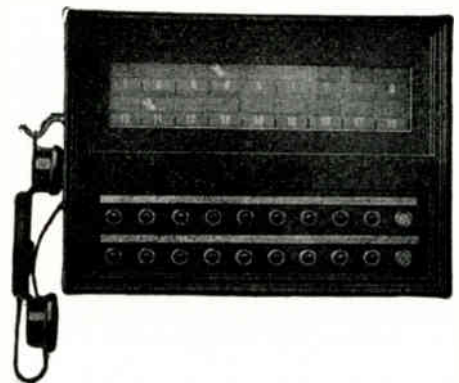
The No. 400 series Push Button Plates are designed for mounting with the No. 1520-R, No. 1524-E and No. 1524-F vestibule Inter-Phones for calling selectively each apartment Inter-Phone in the system, depending upon the total number of buttons required.

Plates are made of drawn brass, finished in bronze brass. For larger than 24 buttons, additional push button plates may be installed.

Code No.	No. of Buttons	Face Plate Inches
400-A	..	5x16½
406-A	6	5x16½
412-A	12	5x16½
416-A	16	5x16½
420-A	20	5x16½
424-A	24	5x16½

Graybar Annunciators

Janitor Answering and Calling Annunciators For Common Talking Systems Nos. 20-J and 21-J

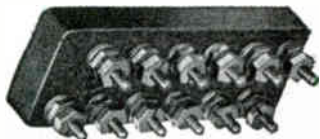


Equipped with electrical reset drops, one for each apartment and the vestibule, also push buttons for calling each apartment and for opening the door. A reset button is provided for electrically resetting the operated drops.

Annunciators are finished in Black Duco.

List No.	No. of Drops & Buttons	No. of Rows	List No.	No. of Drops & Buttons	No. of Rows
2010	10	2	2049	49	5
2016	16	2	2056	56	5
2020	20	2	2064	64	5
2025	25	3	2072	72	5
2030	30	3	2081	81	6
2036	36	4	2090	90	6
2042	42	4	2100	100	7

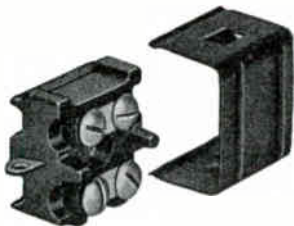
Graybar Connecting Blocks No. 30 Type



Consist of brass studs embedded in a hard composition base. Studs fitted with two nuts (one a split check nut) and two washers.

Code No.	Capacity in Pairs	SIZE OF BASE, INCHES		
		Length	Width	Thickness
30A	6	4 $\frac{3}{16}$	1 $\frac{1}{2}$	$\frac{1}{2}$
30B	11	7 $\frac{5}{16}$	1 $\frac{1}{2}$	$\frac{1}{2}$
30C	16	10 $\frac{1}{16}$	1 $\frac{1}{2}$	$\frac{1}{2}$
30D	26	16 $\frac{11}{16}$	1 $\frac{1}{2}$	$\frac{1}{2}$

Nos. 14 and 15 Type

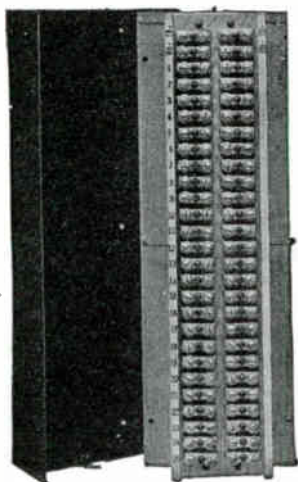


Consist of a composition base in which the screw terminals are embedded. Each terminal consists of two screw bushings electrically connected by means of a metal strip, and provided with screws and washers.

Block is equipped with a cover.

Code No.	No. of Terminals	O.D. BASE WITH COVER, INCHES		
		Length	Width	Thickness
14	2	1 $\frac{3}{16}$	1 $\frac{3}{8}$	$\frac{7}{8}$
15	4	2 $\frac{1}{4}$	1 $\frac{3}{8}$	$\frac{7}{8}$

No. 19 Graybar Cable Terminals



Suited for interior distributing work.

Made of hardwood, numbered and shellacked. Equipped with a sheet steel cover, treated with Parker rustproof process, finished in black enamel.

Width, 5 $\frac{7}{8}$ inches; depth, 2 $\frac{1}{2}$ inches.

No.	Capacity	Length	19AC	19BC
.....	..... pairs	..... inches	15	27
.....	.....	.....	8	14

Prices upon application.

Graybar Inter-Phone Cable



For Interior Use



For Outside Use

The conductors are provided with single silk and single cotton insulation, which is colored in such a way that each pair and each single wire can be identified.

The cable is impregnated with a wax compound and is covered with servings of paper and a heavy braiding, which is given a heavy coat of fireproofing paint.

Three General Types of Cable are Provided

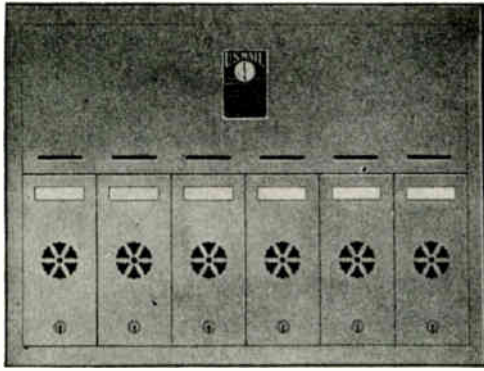
1. INTERIOR CABLE with outside braiding treated with gray fireproofing paint. Use only in dry places.
2. INTERIOR CABLE with brown glazed cotton outside braiding. Use only in dry places where exposed to view.
3. OUTSIDE CABLE, lead covered. Always use this cable outside, and inside where there is apt to be moisture even in a small degree. In conduit installations lead covered cable should be used.

Lead-covered cables are not listed with separate Code Nos. Any fireproofed type of cable may be ordered with a lead sheath.

All cables are provided with a standard color scheme, so that each pair can be distinguished from any other. The pairs are properly twisted to prevent inductive disturbances.

Code No.	Con- ductors	PAIRS		SINGLES		Covering	Approx. Diam. Inches
		No.	Gage	No.	Gage		
142B	8	..	..	8	22	Brown Glazed Cotton	.32
161B	8	..	..	7	22	Fireproof Braid	.28
161BS	8	..	..	7	22	Lead Sheath	.28
162B	12	..	..	11	22	Cotton Braid Painted Gray	.32
162BS	12	..	..	11	22	Lead Sheath	.31
164B	12	2	18	6	22	Fireproof Braid	.35
164BS	12	2	18	6	22	Lead Sheath	.34
244B	22	{	{	8	22	Fireproof Braid	.38
				2	18		
244BS	22	{	{	8	22	Lead Sheath	.41
				2	18		
245B	22	{	{	8	22	Brown Cotton Unpainted	.38
				2	18		
246B	34	{	{	14	22	Fireproof Braid	.42
				2	18		
246BS	34	{	{	14	22	Lead Sheath	.45
				2	18		
247B	34	{	{	14	22	Brown Cotton Unpainted	.42
				2	18		
248B	42	{	{	18	22	Fireproof Braid	.45
				2	18		
248BS	42	{	{	18	22	Lead Sheath	.48
				2	18		
249B	50	{	{	22	22	Fireproof Braid	.48
				2	18		
249BS	50	{	{	22	22	Lead Sheath	.52
				2	18		
250B	58	{	{	26	22	Fireproof Braid	.52
				2	18		
250BS	58	{	{	26	22	Lead Sheath	.55
				2	18		
251B	72	{	{	33	22	Fireproof Braid	.56
				2	18		
251BS	72	{	{	33	22	Lead Sheath	.59
				2	18		

Graybar Mail Boxes



Mail boxes are made in gangs of 3, 4, 5, 6, 7, and 8 units to a gang. Each unit accommodates the mail for one tenant and each gang is provided for mounting post office lock which is furnished and installed, free, by the Post Office Department. By combining these gangs in various multiples, using 8-unit gangs wherever permissible, and the smaller gangs where the number of apartments is less than eight, or where the number of apartments to be served is not an even multiple of eight, any requirement can be fulfilled.

Mail boxes have solid brass front with no projecting parts. Drawn return flange on edges of brass front for reinforcement. Reinforced master door and concealed hinges. Mail box is 4 1/8 inches deep. Make wall opening 4 3/4 inches deep.

Tenant's card holder is placed at the upper edge of tenant's door, visible to postman when master door is open. Tenant's lock is of the flat cylinder type.

Mail boxes are finished in old (sprayed) brass. Other finishes are special.

Wall Opening for No. 30A Mail Boxes

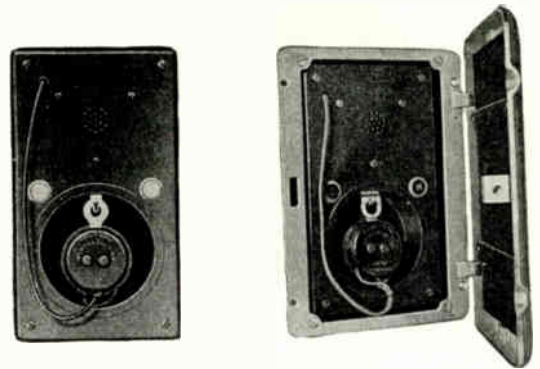
Single row mounting: top of wall opening, 60 inches from floor; height of wall-opening, 15 1/4 inches; height overall, 16 1/2 inches.

Double row mounting: top of wall opening, 67 inches from floor; height of wall opening, 31 3/4 inches; height overall, 33 inches.

Single Row Mounting			Double Row Mounting		
No. of Units	Width Wall Opening Inches	Height Overall Inches	No. of Units	Width Wall Opening Inches	Height Overall Inches
3	10 3/4	11 5/8	8	14 1/8	15
4	14 1/8	15	10	17 1/2	18 3/8
5	17 1/2	18 3/8	12	20 7/8	21 3/4
6	20 7/8	21 3/4	14	24 1/4	25 1/8
7	24 1/4	25 1/8	16	27 5/8	28 1/2
8	27 5/8	28 1/2	18	32 1/2	33 3/8
9	32 1/2	33 3/8	20	35 7/8	36 3/4
10	35 7/8	36 3/4	22	39 1/4	40 1/8
11	39 1/4	40 1/8	24	42 5/8	43 1/2
12	42 5/8	43 1/2	26	46	46 7/8
13	46	46 7/8	28	49 5/8	50 1/4
14	49 5/8	50 1/4	30	52 3/4	53 5/8
15	52 3/4	53 5/8	32	56 1/8	57
16	56 1/8	57	34	61	61 7/8
17	61	61 7/8	36	64 5/8	65 1/4
18	64 5/8	65 1/4	38	67 3/4	68 5/8
19	67 3/4	68 5/8	40	71 1/8	72
20	71 1/8	72	42	74 1/2	75 3/8
21	74 1/2	75 3/8	44	77 5/8	78 1/4
22	77 5/8	78 1/4	46	81 1/4	82 1/8
23	81 1/4	82 1/8	48	84 5/8	85 1/2
24	84 5/8	85 1/2	50	89 1/2	90 3/8
25	89 1/2	90 3/8	52	92 7/8	93 3/4
26	92 7/8	93 3/4	54	96 1/4	97 1/8
27	96 1/4	97 1/8	56	99 5/8	100 1/2
28	99 5/8	100 1/2	58	103	103 7/8
29	103	103 7/8	60	106 3/8	107 1/4
30	106 3/8	107 1/4	..	.....	.....

Graybar Inter-Phones

Elevator Inter-Phone Service



No. D-1640

An elevator Inter-Phone system provides for communication between the elevator starter and each elevator cab, also between the elevator starter, the engineer, the superintendent, the machine room, etc., depending upon the total number of master and outlying stations to be installed.

The elevator cab Inter-Phone D-1640 is designed to mount in back of the Underwriters' building certificate frame, which in a number of cases is required by law. This frame is hinged to a metal outlet box so that the cab operator has access to the Inter-Phone through this door. The set is compact, is concealed, has no projecting parts, and the exterior frame may be designed to match the trim of the cab in which it is installed.

The D-1640 Inter-Phone Set does not include the outlet box and mounting frame as shown in the illustrations. The elevator company usually provides a suitable type of frame and outlet box in which to mount the Inter-Phone Set. In some cases the elevator companies may wish to install a standard surface wall or hand type of instrument, depending upon the local requirements.

The starter's station Inter-Phone is usually installed in the control panel with the other operator's signalling equipment. This Inter-Phone may consist of a wall or hand type, depending upon the space available for mounting the instrument. The regular cab call button on the starter's panel will also be used for signalling the cab Inter-Phone by means of a code ring. Extra buttons will be provided for signalling the other stations in the system.

Assembly drawings of Inter-Phones and wiring diagrams will be furnished upon request.

Elevator Cable

For Inter-Phone and Signalling Systems

Control Cable with Steel Support

Size 16 A. W. G.

No. of Cond.	Wt., Lbs. per M.	O.D. In.	No. of Cond.	Wt., Lbs. per M.	O.D. In.	No. of Cond.	Wt., Lbs. per M.	O.D. In.
2	94	.585	8	213	.683	20	449	1.000
3	108	.585	10	267	.795	22	484	1.018
4	125	.585	12	325	.896	24	537	1.067
5	138	.585	14	360	1.003	26	580	1.111
6	160	.588	16	448	1.102	28	630	1.193
7	187	.588	18	482	1.202	30	680	1.212

Annunciator Cable without Steel Support

Size 18 A. W. G.

No. of Cond.	Wt., Lbs. per M.	O.D. In.	No. of Cond.	Wt., Lbs. per M.	O.D. In.	No. of Cond.	Wt., Lbs. per M.	O.D. In.
2	25	.254	8	70	.386	20	151	.525
3	32	.260	10	87	.452	22	166	.550
4	39	.288	12	106	.452	24	181	.575
5	46	.324	14	109	.452	26	200	.616
6	52	.336	16	121	.475	28	208	.616
7	61	.336	18	134	.500	30	214	.616

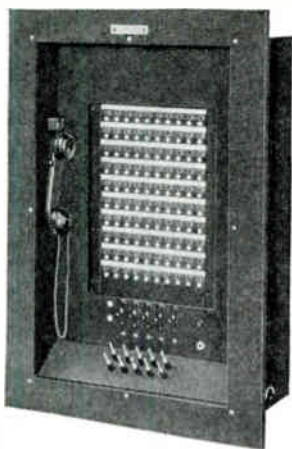
Lighting Cable (Size 14 A.W.G.)

No. of Cond.	WITH STEEL SUPPORT		WITHOUT STEEL SUPPORT	
	Wt., Lbs. per M.	O.D. In.	Wt., Lbs. per M.	O.D. In.
2	127	.677	107	.528
3	155	.677	135	.560
4	183	.677	163	.614

Further data on elevator cable furnished upon request.

Graybar Inter-Phone Switchboards

Flush Wall Mounting Type



Designed to satisfy the need of apartments, apartment hotels, and other public buildings for an Inter-Phone Switchboard that combines mechanical perfection with compactness and attractive appearance.

Standing type switchboards are rapidly becoming out of harmony with the general plan and decorative scheme of entrance halls and lobbies of many of the larger apartments and other buildings. This flush type switchboard which can be mounted compactly and neatly into the wall does not take up space, yet gives all the service of the standing type and even greater convenience.

In most lobbies or entrance halls, the board, if properly mounted, is instantly visible from almost any angle or distance. Unless the board is continuously in use, this might make possible a reduction in personnel in some cases, as the operator could be utilized at other nearby tasks between calls. This is usually more difficult with the standing type due to its construction and the fact that its bulkiness causes it to be placed in some remote corner.

There are four main types of No. 108 and No. 109 Inter-Phone Switchboards which can be obtained in single or double panel types.

No. 108 Type

The No. 108 Type Inter-Phone Switchboard is a flush wall type unit designed for a three-wire system and is arranged for single supervision. One battery is required for operating the signaling and talking circuit of the system, and the outlying telephone sets are equipped with vibrating bells or buzzers for operation on 24 volts d.c. A single supervisory lamp is furnished with each cord circuit. The operating characteristics and the circuit arrangement of the No. 108 Type Switchboard are similar to the No. 116 Floor Standing Type.

No. 109 Type

The No. 109 Type Inter-Phone Switchboard is a flush wall type unit and is similar in construction to the No. 108 Type described above except that it is arranged for a two-wire system and for single supervision of the connecting cord circuits. This system requires one battery for operating the talking and line lamp signal circuits, also a ringing machine for operating the ringing circuit of the system. The line connections to each outlying station in the system consist of a pair of wires and a single lamp is provided to supervise the talking and answering sides of each cord circuit. The operating characteristics and the circuit arrangement of this switchboard are similar to the No. 117 Floor Standing Type Inter-Phone Switchboard.

Nos. 108-C and 109-C Single Panel

Total capacity, 100 lines.	
Lines	Cord Pairs
60	5
70	5
80	5
90	5
100	5

Nos. 108-D and 109-D Double Panel

Total capacity, 200 lines.	
Lines	Cord Pairs
120	10
140	10
160	10
180	10
200	10

Nos. 108-A and 109-A Single Panel

Total capacity, 50 lines, 5 cord pairs.

Lines	Cord Pairs
20	2
30	3
40	4
50	5
..	..

Nos. 108-B and 109-B Double Panel

Total capacity, 100 lines, 10 cord pairs.

Lines	Cord Pair
60	6
70	8
80	8
90	10
100	10

Floor Standing Type

No. 116 Type

The No. 116 Type Inter-Phone Switchboard is a floor standing type unit designed for a three-wire system and is arranged for single supervision. One battery is required for operating both the signaling and talking circuit of the system. The line connections to each station in the system consist of two individual wires and one common wire. The telephone sets are equipped with vibrating bells or buzzers for operating on 24 volts d.c. A single supervisory lamp is furnished with each cord circuit.

No. 117 Type

The No. 117 Type Inter-Phone Switchboard is a floor standing type and is similar in construction to the No. 116 Type described above except that it is arranged for a two-wire system and for double supervision of the connecting cord circuits. One battery is required for operating the talking and lamp signal circuit. A ringing machine is required for operating the ringing circuit of the system. The line connections to each outlying station in the system consist of a pair of wires. The double supervision feature provides double lamps to supervise the talking and answering sides of each cord circuit.

Capacities

There are three main types of No. 116 and No. 117 Inter-Phone Switchboards, as follows:

No. 116-A and No. 117-A Switchboard of 50 line capacity.

No. 116-B and No. 117-B Switchboard of 100 line capacity.

No. 116-C and No. 117-C Switchboard of 200 line capacity and over.



NOTE—These switchboards are fully described in bulletin GBT-113, a copy of which will be furnished upon request.

Graybar Inter-Phones for Switchboards

Cradle Type



Consists of a handset with cradle mounting having a buzzer mounted in the base. A connecting block is furnished for making the line connections.

Code No.	CONSISTS OF		For Switchboard
	Handset and Cradle	Connecting Block	
6245A	1245A	No. 15	108, 116, 1801
6245AP	1245AP	No. 14	109, 117

Handset Inter-Phones



Consists of a handset and a surface type apparatus box finished in black enamel. The apparatus box contains the buzzer and terminals for making line connections.

Code No.	Handset	Apparatus Box	Connecting Block	For Switchboard
6043R	1003AC	383H	.....	108, 116, 1801
6239A	1239A	.....	No. 15	108, 116, 1801

No. 141A Handset Hooks



A hook to be screwed into wall for holding No. 1003 type handset.



Graybar Inter-Phones for Switchboards

Wall Type—Surface Mounting



No. 2527A & AP

No. 3537A & AP

The No. 2537 and No. 3537 Inter-Phones have metal housings which contain talking and signaling apparatus.

Black enamel finish. Made rustproof by the Parker process.

Code No.	HOUSING DIMENSIONS, INCHES			For Switchboard
	Height	Width	Depth	
2527A	7½	5	2⅝	108, 116, 1801
2527AP	7½	5	2⅝	109, 117
3537A	9⅝	6¾	3	108, 116, 1801
3537AP	9⅝	6¾	3	109, 117

Wall Type—Flush Mounting



Has a flush steel face plate on which is mounted talking and signaling apparatus. This mounts in a metal outlet box set in the wall.

Black enamel finish. Made rustproof by the Parker process.

Code No.	FACE PLATE, IN.		OUTLET BOX, INCHES			For Switchboard
	Height	Width	Height	Width	Depth	
2539A	9	5½	7½	4	2⅝	108, 116, 1801
2539AP	9	5½	7½	4	2⅝	109, 117

Nos. 6247A and 6247AP—Wall Mounting



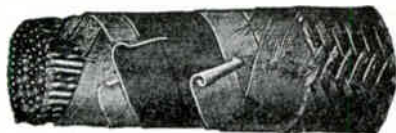
These two sets were designed to meet the requirements of service with Graybar Switchboards.

No. 6247A is equipped with a 24-volt d.c. ringer.

No. 6247AP, with a single gong bell, is designed to operate on 16 to 20 cycle current with a line voltage of 80 to 90 volts.

Code No.	For Switchboard
6247A	108, 116, 1801
6247AP	109, 117

Western Electric Type 6000 Switchboard Cable



No. 6084

This cable employs tinned enameled conductors which are covered with two servings of cotton. The core of each cable is bound with a binder serving of cotton, a serving of paper tape, a serving of metal tape, and a second serving of paper tape. Over this is applied a close serving of cotton and a close braiding of cotton. The completed cable is painted with a gray cable paint.

Code No.	Conductors	Pairs			Singles			Dimen. In.
		No.	Gage	**Color	No.	Gage	**Color	
6016	63	20	22	1-20	20	22	1-20	$4\frac{9}{64} \times \frac{25}{64}$
6024	43	20	22	1-20	..	..	..	$3\frac{7}{64} \times \frac{23}{64}$
6050	33	10	22	1-10	10	22	1-10	$3\frac{5}{64} \times \frac{21}{64}$
6062	63	15	22	1-15	..	..	..	$4\frac{3}{64} \times \frac{17}{16}$
		15	22	21-65	..	..	..
		40	22	1-40	..	..	..
*6066	103	5	22	121-125	..	..	..	$\frac{3}{4}$ dia.
		5	22	141-145	..	..	..
*6069	205	100	22	1-100	..	..	..	$5\frac{7}{64}$ dia.
6070	83	20	22	1-20	..	..	..	$4\frac{9}{64} \times \frac{15}{32}$
		20	22	141-160	..	..	..
*6074	21	..	..	..	20	22	1-20	$2\frac{3}{64}$ dia.
6079	23	10	22	1-10	..	..	..	$2\frac{5}{64} \times \frac{19}{64}$
6084	63	20	22	1-20	20	22	1-20	$1\frac{11}{32} \times \frac{23}{64}$
6097	132	64	22	1-64	..	..	..	$\frac{7}{8} \times \frac{9}{8}$
		20	24	1-20	..	..	..
6100	83	20	24	141-160	..	..	..	$1\frac{1}{16} \times \frac{15}{32}$
		20	24	1-20	20	24	21-40	
6102	103	20	24	141-160	..	..	..	$4\frac{9}{64} \times \frac{31}{64}$
		20	24	1-20	..	..	..
6103	42	20	24	1-20	..	..	..	$3\frac{5}{64} \times \frac{23}{64}$
		20	22	1-20	20	22	21-40	
6106	103	20	22	141-160	..	..	..	$2\frac{5}{32} \times \frac{35}{64}$
		20	22	1-20	20	22	21-40	
6125	23	10	19	1-10	..	..	..	$\frac{9}{16} \times \frac{11}{32}$
6182	13	6	22	††	..	..	..	$\frac{3}{8} \times \frac{1}{4}$
		10	22	1-10	10	22	21-30	
6183	53	10	22	141-150	..	..	..	$5\frac{5}{8} \times \frac{13}{32}$
		20	22	1-20	30	22	21-50	
6191	93	10	22	121-130	..	..	..	$2\frac{3}{32} \times \frac{33}{64}$
		20	22	††	..	..	..
6196	43	20	22	††	..	..	..	$3\frac{9}{64} \times \frac{23}{64}$
6201	63	20	22	††	20	22	1-20	$2\frac{1}{32} \times \frac{17}{16}$
†6205	39	12	22	1-12	12	22	21-32	$3\frac{5}{64} \times \frac{23}{64}$
		10	24	121-130	..	..	..
6222	103	10	24	151-160	20	24	41-60	$4\frac{9}{64} \times \frac{1}{2}$
		10	24	41-50	..	..	..
		10	24	71-80	..	..	..
		20	24	1-20	..	..	..
6227	83	20	24	141-160	..	..	..	$1\frac{19}{64} \times \frac{3}{8}$
		40	22	1-40	40	22	1-40	
6233	123	40	22	1-40	..	..	..	$\frac{7}{8} \times \frac{29}{64}$
		40	22	1-40	..	..	..
6234	164	40	22	121-160	..	..	..	$3\frac{1}{32} \times \frac{43}{64}$
		40	22	1-40	40	22	1-40	
*6235	205	40	22	121-160	40	22	1-40	$5\frac{7}{64}$ dia.
†6236	63	20	24	1-20	20	24	1-20	$\frac{3}{4} \times \frac{3}{8}$
		20	22	**	20	22	1-20	
		20	22	**	20	22	1-20	
		20	22	**	20	22	1-20	
		20	22	**	20	22	1-20	
§6237	¶312	20	22	**	20	22	1-20	$1\frac{1}{16}$ dia.
		20	22	**	20	22	1-20	
		20	22	**	20	22	1-20	
		20	22	**	20	22	1-20	

*Round shaped cables. All other cables are oval or flat as indicated by the dimensions.

†Replaces No. 6204.

††Partially replaces No. 6120.

§May be used in place of five No. 6201 cables. Each group has a distinctive colored binder serving, brown, slate, blue, green and orange.

¶Includes spares.

¶¶One pair and one single may be defective.

**Numbers refer to color combinations. Write for further information.

†††Blue, orange, green, brown, slate and blue-white paired with singles, colors Nos. 41-46.

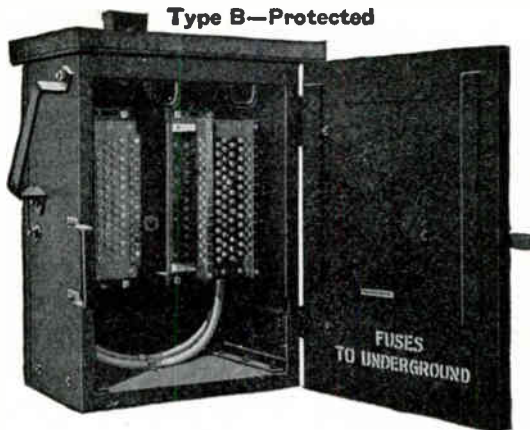
††††Nos. 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 141, 143, 145, 147, 149, 151, 153, 155, 157, and 159.

*Nos. 1, 22, 3, 24, 5, 26, 7, 28, 9, 30, 11, 32, 13, 34, 15, 36, 17, 38, 19, and 40.

**Nos. 1, 22, 3, 24, 5, 26, 7, 28, 9, 30, 11, 32, 13, 34, 15, 36, 17, 38, 19, and 40.

Western Electric Cable Terminals

Type B—Protected



No. B26, Open

The listing of Type B cable terminals complete includes a terminal box, equipped with fuse chambers and binding post chambers, each of which is supplied with a cable stub attached and potheaded. Fuse chambers and binding post chambers may be ordered as separate items.

No. B26 terminal will terminate both a 26 pair underground cable and a 26 pair aerial cable. It provides for cross-connection. Other sizes have similar capacity ratings.

Pole seats may be used with the two smaller sizes of Type B cable terminals. These together with balconies for the large terminals can be obtained.

Code No.	Capacity Pairs	Cable Terminal No.	*Fuse Chamber		Binding Post Chamber	
			No.	Qty.	No.	Qty.
B 26	26	B 26	B 26A	1	B 26A	1
B 51	51	B 51	B 51A	1	B 51A	1
B 76	76	B 76	B 76A	1	B 76A	1
B101	101	B101	B101A	1	B101A	1
B152	152	B152	B 76A	2	B 76B	2
B202	202	B202	B101B	2	B101B	2
B304	304	B304	B 76B	2	B 76B	2
			B 76C	2	B 76C	2
			B101B	2	B101B	2
B404	404	B404	B101C	2	B101C	2
			B101C	2	B101C	2

*B fuse chambers do not include the No. 7T fuses which must be ordered separately.

Type F—Unprotected

Provides a moisture-proof seal for lead-covered cables terminated on outside walls or poles.

Consists essentially of a metal sealing chamber having an insulating panel with binding posts, nuts, and washers. With galvanized slip cover and detachable metal mounting plate. Terminal may be mounted with stubs out of top or bottom of mounting. With $5\frac{1}{2}$ -foot cable stub projecting from top of terminal. Can be furnished with 10 or 12-foot cable stub (out of top on.), or 8-foot cable stub (out of top or bottom) as specified.



Open



Side View

Code No.	F10	F16	F26
No. Pairs of Conductors Arranged for...	10	16	26
Overall Height.....inches	8	$10\frac{5}{16}$	$15\frac{1}{2}$
Overall Width.....inches	$7\frac{1}{2}$	$7\frac{1}{2}$	$7\frac{1}{2}$
Overall Depth.....inches	$4\frac{5}{16}$	$4\frac{5}{16}$	$4\frac{5}{16}$

Cook and Reliable Protected Terminals can also be furnished.

For more complete information on all types of telephone apparatus and cable see Western Electric Catalog 10. Consult your nearby Graybar office and warehouse.

Western Electric
Carrier Telephone Systems

Type C

A multi-channel carrier system operating at a frequency range of from 6 to 29 kilocycles. Provides facilities for superimposing three additional telephone circuits upon an existing open wire voice frequency telephone circuit.

The C5 carrier telephone terminal is used at each end of a Type C carrier telephone system and the C1 carrier telephone repeater is used at intermediate points of such a system to amplify the three carrier channels.

Where the total length of entrance and intermediate cable involved is relatively short, a Type C system employing two C5 terminals without repeaters can be operated under average conditions over lines up to about 150 to 200 miles in length. By using intermediate C1 carrier telephone repeaters and spacing them approximately 200 miles apart, the length of such a system can be extended almost indefinitely provided the transmission and crosstalk characteristics of the line are satisfactory.

When repeaters are not employed the Type C system can be arranged to operate with either manual or automatic regulation of the circuit net losses. When one or more repeaters are required the latter arrangement is always utilized.

Ringin

The C5 terminal is designed to operate with 1000-cycle ringer equipment. Any standard 1000-cycle terminal or intermediate ringer can be used. Western Electric 1000-cycle ringer oscillator equipment is recommended. Three of these units are required for each C5 terminal, one being used for each channel. The ringing equipment is not an integral part of the terminal and should be ordered separately.

Power Supply

The C5 terminal and the C1 repeater may be operated from either 24 and 130-volt office batteries or by the addition of suitable power supply equipment from a 105 to 125-volt, 50-60-cycle, a.c. source. In battery operated case about 6 watts of 55-volt, 50-60-cycle power is also required for the repeater, and a like amount for a terminal if the carrier pilot channel equipment is employed.

The C5 terminal or the C1 repeater can be obtained mounted complete on one relay rack bay. This bay may be $8\frac{3}{8}$, $10\frac{1}{2}$, or $11\frac{1}{2}$ feet in height. Additional relay rack space may be required for the associated equipment required.

The selection of the apparatus required for a carrier system is dependent upon all the physical and electrical characteristics of the line on which it is to be placed. Such information should be forwarded to Graybar in a specially prepared questionnaire which can be obtained upon request. After the job has been studied, quotations and complete recommendations will be made on equipment to meet your requirements.

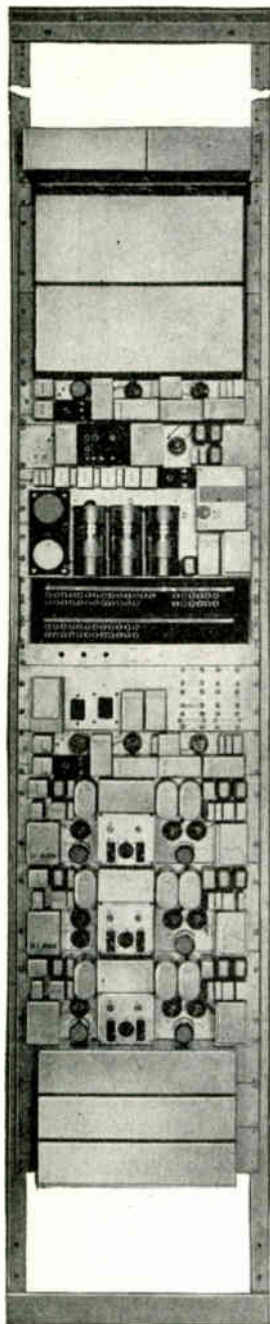
Type G1

The Western Electric G1 Carrier Telephone System is a relatively simple and inexpensive single-channel system. The equipment is small in size and has been arranged for operation from an a.c. supply of 105-125 volts, 50-60 cycles.

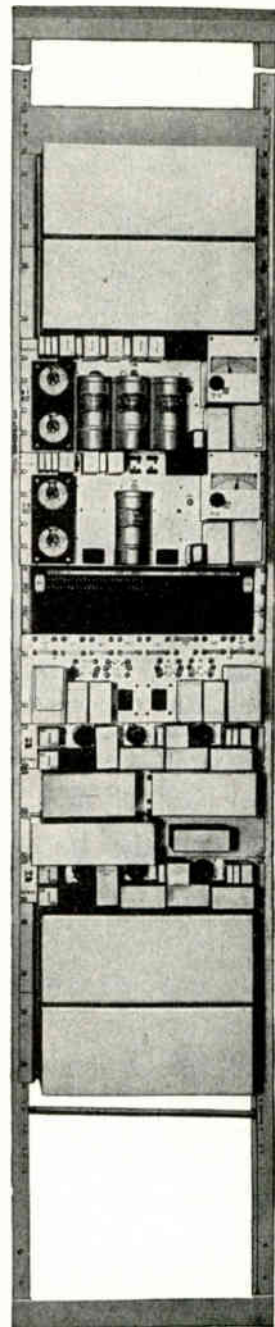
The carrier frequency employed is 10.3 kc. It is generated by a vacuum-tube oscillator at one terminal only, which is called the active terminal. Both upper and lower sidebands are transmitted over the line and the carrier is transmitted along with them for use in modulation and demodulation at distant terminal which is called the inert terminal because it contains no vacuum-tube apparatus and requires no power supply. Transmission in the reverse direction is accomplished in the same way except for the fact that a phase corrector is required at the inert terminal.

For ringdown operation 20-cycle signaling is employed on a simplex basis. For cases where this is not feasible a simple composite set is available which provides two signaling paths, one for the carrier circuit and one for the voice circuit on which the carrier is superimposed.

For more complete information on all types of telephone apparatus and cable see Western Electric Catalog 10.
Consult your nearby Graybar office and warehouse.



C5 Carrier Terminal



C1 Repeater

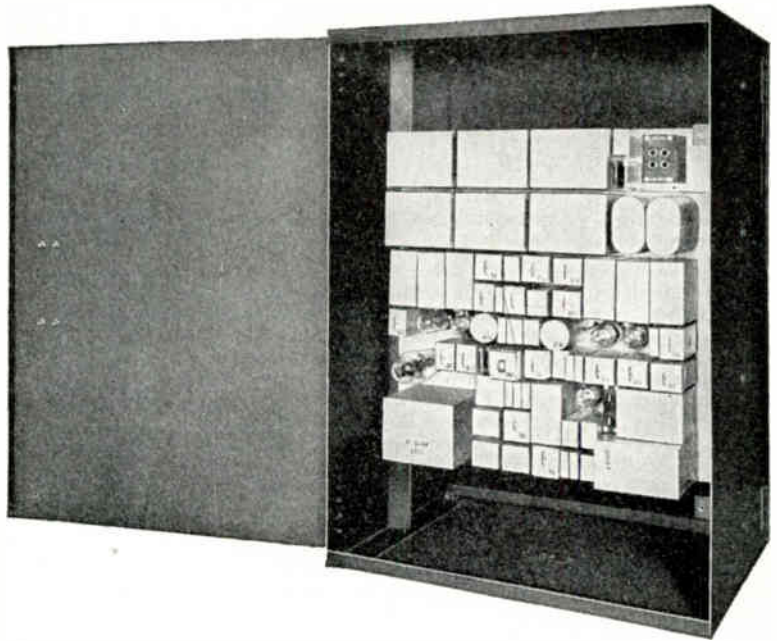
Western Electric
No. H1 Type Carrier Telephone Systems

A single channel system for use on open wire lines.

Equipment includes provision for operation on a ringdown basis and can be applied on a line without the loss of any existing service. Suitable for use as a permanent installation, and also for temporary or emergency circuits. Typical applications are on the telephone lines of telephone, railroad, power, oil and pipe line companies where long distance telephone facilities are required.

The power supply may be either 105 to 125 volt, 50 to 60 cycles, single phase, a.c. or regular central office filament, signal and plate battery potentials.

This system, without an intermediate repeater, finds its widest application on open wire circuits of about 50 to 250 miles in length. With one or two intermediate repeaters this system is applicable on circuits up to as much as 600 or 700 miles in length, depending on gage of open wire conductors, amount of intermediate cable in line, number of bridged way stations, etc.



No. H1 Type Carrier Telephone—Terminal Panel, Line Filter, and Balancing Panel Mounted in Apparatus Cabinet

Western Electric
No. 22 Type A.C. Operated Repeaters

Precision Balanced Type

This repeater with its various types of precision networks and associated equipment, has been developed to meet the wide variety of needs of telephone companies, railroads, and pipe line companies.

The equipment is provided in two units called a primary and a secondary unit. Each of these units may be obtained mounted on cabinets or assembled on a framework for relay rack mounting. Both units are completely wired and assembled at the factory to meet the particular apparatus arrangements specified by the customer.

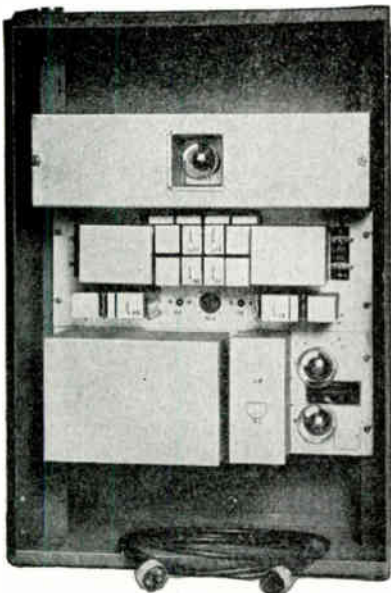
Approximate Balance Type

Developed for application on railroad dispatching circuits or message circuits of a similar nature.

This repeater provides a simple and economical form of repeater installation. Operates from a 50 or 60-cycle, 105 to 125-volt, a.c. lighting circuit. The signaling currents are bypassed around the repeater. Thus no changes in the signaling systems in general are required. Relays are also included so that the repeater is automatically cut out of the circuit in event of failure of power or vacuum tubes.

Tests have demonstrated that No. 22 repeaters with compromise balancing arrangements and without special engineering study of the line will ordinarily yield gains of 7 or 8 db., sufficient for many practical applications. Higher gains are generally obtainable by making minor modifications of the sub-station sets.

This repeater is not suitable for general use on railroad trunk circuits or on toll lines, because of the different signaling conditions and the requirements for toll line and network repeating coils and the precision type balancing equipment.



**Primary Unit
 Precision Balance Repeater in Cabinet
 Front View with Cabinet Door Open**

For more complete information on all types of telephone apparatus and cable see Western Electric Catalog 10. Consult your nearby Graybar office and warehouse.

Western Electric

Voice Frequency Loading Coils



M Type Loading Unit Phantom Group



No. 623 Loading Coil



No. 622 Loading Coil

Available Voice Frequency Loading Coils and Loading Units for 2-Wire Telephone Circuits

Class	Code No.	Nominal Inductance—Henry	Class	Loading Units	NOMINAL INDUCTANCES HENRY	
					Each Side Circuit	Phantom Circuit
I-a	622	.088	II	M1	.172	.063
	628	.044		M3	.044	.025
	629	.022		M4	.031	.018
I-b	623	.135	M5	.011	.007	
	624	.175	M6	.027	.016	
	625	.250	M9	.088	.050	
			M10	.044	.025	
			M11	.088	.050	

Loading Coil Cases

Potting arrangements for the loading coils and units listed are available for a wide range of installation conditions and circuit complement sizes.

When only a few loaded circuits are required, the small size of the non-phantom type coils make it especially economical to pot these coils in individual containers suitable for installation within cable splice sleeves in aerial and underground installations. For larger groups of non-phantomed circuits, up to about 100 Class I-a coils and 25 Class I-b coils, or for locations where conditions may be difficult for "Splice Sleeve" loading, low cost types of lead sleeve cases are available. These designs are suitable for aerial and underground installations. For larger loading complements, welded steel case designs are available; these differ in finish and minor installation details, for aerial and underground installations. Also, a limited number of case designs are available for small complement office installations on apparatus racks.

For phantom loading units, lead sleeve type case designs are available for 1, 2, and 3 loading units and welded steel designs provide for complements in the range of 4 to 80 loading units.

By the application of loading coils on telephone cable circuits the unit loss can usually be reduced to the order of one-third to one-fourth the non-loaded value. The reduction is less than this amount at low frequencies and more at high frequencies, resulting in a nearly constant loss at all important voice frequencies. This contributes to the fidelity of reproduction, which is dependent largely upon a uniform transmission of the various frequencies required for intelligibility and naturalness. The loaded circuit is superior to the non-loaded circuit with respect to both loss and transmission distortion.

The following table lists the code numbers of the individual coils and loading units which comprise the different classes and include their nominal design inductance values.

Western Electric

No. 1417 Type Magneto Telephones

A local battery magneto wall set arranged for anti-sidetone rural service. Equipped with high efficiency No. 635A transmitter and No. 706A receiver. Furnished with a shelf for writing.

The standard type telephone set operates on three dry cells and is equipped with a No. 48 type (5-bar) generator.

Equipment

Two or three batteries are required but must be ordered separately. In addition to the apparatus mentioned, telephone is equipped with the following:

- Code No. 635A Transmitter
- Code No. 706A Receiver
- Code No. R2DW Receiver Cord
- Code No. 143Y Switch-Hook
- Code No. T1A Transmitter Cord (6 Inches)
- Code No. 113D Induction Coil
- Code No. 8A Transmitter Bracket

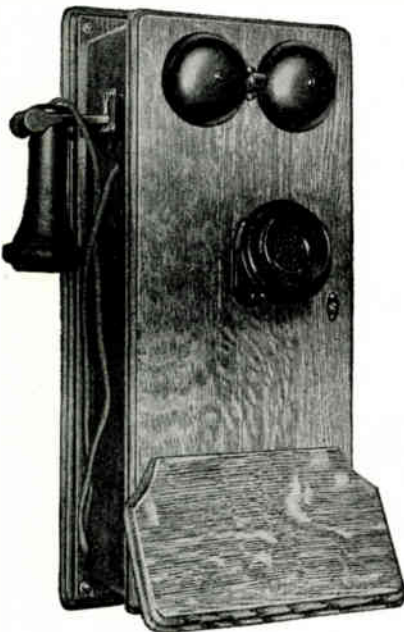
3-Cell Type

Code No.	RINGER		Generator Code No.	Condenser Code No.	CLASS OF SIGNAL SERVICE		Line Conditions as Regards Load
	Code No.	Resistance (Ohms)			Telephone to Central Office	Central Office to Telephone	
1417AH	38AG	1000	22A	*†	Code	Code	Medium
1417N	38FG	1600	48A	†	Code	Code	Medium
1417P	38BG	2500	48A	†	Code	Code	Heavily
1417R	38FG	1600	48A	149E†	Code	Code	Medium
1417S	38BG	2500	48A	149E†	Code	Code	Heavily

2-Cell Type

1417CH	53AG	1020	22BA	†	Code	Code	Lightly
1417CN	53FG	1620	50F	†	Code	Code	Medium
1417CP	53BG	2500	50F	†	Code	Code	Heavily
1417CR	53FG	1620	50F	149E†	Code	Code	Medium
1417CS	53BG	2500	50F	149E†	Code	Code	Heavily

*Arranged for a No. 149E condenser which may be wired in the ringer or receiver circuit if desired.



3-Cell, Closed View

For more complete information on all types of telephone apparatus and cable see Western Electric Catalog 10. Consult your nearby Graybar office and warehouse.

Western Electric Magneto Mine Telephones No. 1336 Type



No. 1336—Outer and Inner Doors Open

These are metal case magneto telephones having all apparatus and parts treated to resist the action of moisture. Primarily designed for use on heavily loaded lines where code ringing is employed. Intended chiefly for mine service where danger from explosive gases is not present. Also recommended for outdoor use.

DRY CELLS. Two standard size dry cells are required for each telephone to furnish current for talking.

Two special cartons, impregnated with moisture-proofing compound are furnished with each No. 1336 type telephone. These are to be substituted for the standard cartons furnished on the dry cells. These cartons resist the action of any moisture that may form on the inside of the case and prevent current leakage and rapid deterioration.

No. 1336A. This telephone is not equipped with a ringer as it is intended for use where an extension bell is preferred to the regular telephone ringer. Also for service where all the calls will be outgoing.

Nos. 1336E and 1336K. These telephones differ from the No. 1336A in that they are equipped with a ringer and an iron hood for protecting the gongs.

No. 1336J. This telephone differs from the No. 1336E only in that a condenser is provided to permit the ringers of this telephone as well as others on the same line, being rung even though its receiver may have been left off the switchhook.

Transmitter No. 312. Receiver No. 144. Generator No. 48C.

Code No.	Receiver Cord	Con-denser	RINGER		Signalling Service	For Line Load
			Code No.	Resistance		
1336A		None	None		Code Ringing	Heavily Loaded
1336E	384	None	45BG	2500		
1336J	10½"	149A	45BG (Spl.)	2500		
1336K		149A	45BG	1600		Medium Loaded

In addition to the apparatus listed above the No. 1336 type telephone is equipped with a No. 143J switchhook and a No. 31 induction coil.

Special No. 1336 type telephones equipped with a heavy brass padlock and with two keys are obtainable. The padlock is attached to the chain in place of the latch pin. Orders must state that padlocks are desired.

No. 1536E

This type of telephone is for use in mines where explosive gas is present. In the words of the United States Bureau of Mines the Western Electric Mine Telephone Type No. 1536E "is permissible for use in mines or other locations where methane or other explosive gases or coal dust are or are likely to be present in dangerous proportions."

This telephone set is enclosed in a cast iron housing 8¼x11¼x17½ inches having a sloping roof and a hood extending out from the top of the door. These two features protect the working parts of the set from damage by falling debris and facilitate the shedding of water. This construction permits mounting the transmitter, receiver and generator-handle entirely exposed on the door but under the protection of the hood. The set is therefore under all conditions immediately recognizable as a telephone.



Closed View

The design of this set safeguards against the explosions which might result from the sparking of the switchhook and generator shunt spring contacts. Safeguards against explosions due to sparking caused by poor or loose connections also have been incorporated and every precaution has been used to guard against mechanical injuries to coils and other parts which might later develop into sparking points.

Western Electric

Subscriber Magneto Desk Set Boxes



No. 300 Type with No. 48 Type Generators

With ringers to operate on a.e. for code ringing service between central office and telephones.

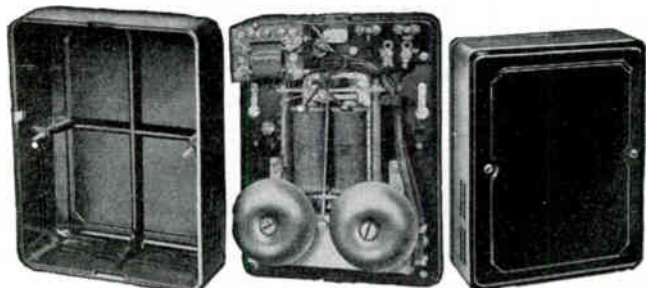
Used with desk stands and No. 250 type telephone sets.

Code No.	COMPOSED OF			Conden-ser No.	For Ringing Service Code	Used on Lines as Regards Load
	Gener-ator No.	Ringer No.	Resis-tance Ohms			
300K	48A	*51BG	2500	.....	Code	Heavily
300L	48A	38FG	1600	.....	Code	Medium
300M	48A	38FG	1600	149A	Code	Medium
300N	48A	38BG	2500	149A	Code	Heavily

*No. 38BG ringer can be furnished when specified.

For more complete information on all types of telephone apparatus and cable see Western Electric Catalog 10. Consult your nearby Graybar office and warehouse.

Western Electric No. 684A-3 Subscriber Sets



Open View

Closed View

A small anti-sidetone common battery desk set with metal base for mounting apparatus; has removable moulded cover.

Intended for use at dial and manual individual line, P.B.X. 4-party semi-selective and extension stations on 4-party selective lines; also dial 2-party selective flat rate, manual 2-party selective flat rate or message rate and non-selective code ringing party lines.

Ringer No. 78A; condenser No. 194A; induction coil, No. 101A. Gongs, Nos. 36A and 37A; two No. 36B, two No. 36D, or one No. 39A gong will be furnished when specified.

Replaces No. 584A-3.

Western Electric
No. 250 Type Telephone Sets



With proper connections this set can be used with either common battery or magneto subsets.

Each set consists of an F1AW-3 hand set, an AA1-3 telephone set mounting, and the necessary cords and wiring. Each set requires a suitable subscriber's set associated with it in order to complete the station equipment.

Code No.	250AW-3	†250BW-3
Dial No. ....	.....	5HA-3
Dial Adapter No. ....	.....	59A
Apparatus Blank No.	82A-3	.....
‡Cord No.	D4U-9	D4U-9

†When specified in order, set can be obtained equipped with No. 61P filter to suppress dialing induction into radio receiving sets.

‡Cords 5½ feet long furnished unless otherwise ordered. Available in 9, 13, and 25-foot lengths. If cord equipped with plug is desired, specify D4W-9 cord and 283B plug.

Western Electric
No. 1653A Central Battery Wall Telephones



A common battery anti-sidetone wall set with enclosed gongs. Intended for use in manual or dial systems. For dial service telephone requires a No. 5H type dial, which is not furnished unless specified. For manual service telephone requires a No. 50B apparatus blank which also is not furnished unless specified.

Has metal case with black finish. Base is flanged to prevent marring of walls.

*Ringer No. 68AG; resistance, 1500 ohms. Dial as specified in order.

The following apparatus is common to the telephone set listed above:

No. 140AK Switch Hook	No. 706A Receiver
No. 101A Induction Coil	No. R2B Cord
No. 194A Condenser	2 No. T1A Transmitter
No. 635A Transmitter	Cords, 9¾ Inches Long

*No. 68AG ringer in No. 1653A telephone only. This type set can be furnished with harmonic ringers.

For more complete information on all types of telephone apparatus and cable see Western Electric Catalog 10. Consult your nearby Graybar office and warehouse.

Western Electric
No. 302 Type Central Battery Telephone Sets



No. 302AW-3



No. 302BW-3

The combined telephone set consists of a housing and a base on which is mounted the induction coil, condenser, ringer, and other apparatus. Telephone set mounting and a hand set form the complete telephone set.

Intended for use in common battery service.

Nos. 302AW-3 and BW-3. For individual line, P.B.X. extensions, and bridged stations.

Nos. 302EW-3 and FW-3. For 2-party selective and 4-party semi-selective stations, and divided code ringing.

The suffix -3 refers to a black finish telephone set.

Code No.	Tel. Set Mounting	Dial No.	Dial Adapter No.	Apparatus Blank No.	§Cords	Hand Set
†302AW-3	H1-3	.....	.....	82A-3	¶D2D-9	F1AW-3
*†302BW-3	H1-3	5HA-3	59A	.....	¶D2D-9	F1AW-3
†302EW-3	H1-3	.....	.....	82A-3	¶D3AL-9	F1AW-3
*†302FW-3	H1-3	5HA-3	59A	.....	¶D3AL-9	F1AW-3

*When specified can be equipped with No. 61P filter to suppress dialing induction into radio receiving sets.

†For use at manual stations. ‡For use at dial stations.

§Cords are 5½ feet long. Can be obtained in 9, 13, and 25-foot lengths when specified in the order.

¶When specified No. D2E-9 cord assembled with No. 273A plug can be obtained instead of No. D2D-9.

¶When specified No. D3AD-9 cord assembled with No. 273A plug can be obtained instead of No. D3AL-9.

Western Electric

Central Battery Telephone Sets

No. 300 Type—For Outdoor Use

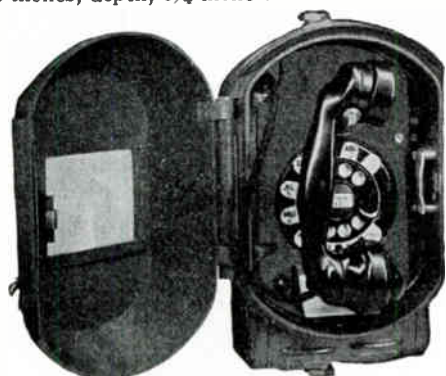


Closed View

Approximate overall dimensions: height, 1 foot 1 inch; width, 9 inches; depth, 6¼ inches.

For outdoor use in anti-side-tone equipment in manual or dial service. Consists of a gray finished metal mounting in which induction coil, ringer, and condensers are assembled. A moisture-proofed handset is hung on a switch hook which is assembled to inner door. Inner door provides a method of mounting dial or apparatus blank. Outer door is fastened by means of a lock and has an instruction card holder welded to its inside surface.

A No. 29A bracket is required for use in mounting each of the telephone sets on buildings, fences, poles, etc., and must be ordered separately.

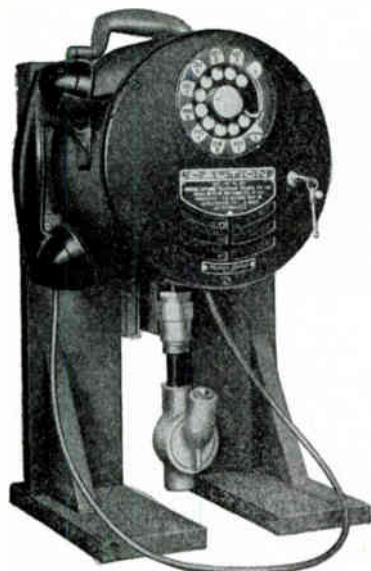


Outer Door Open

In addition to apparatus listed below each set contains: two No. 29C gongs; No. 147A condenser; No. 101A induction coil; No. 68L ringer; No. 149D condenser; No. FICW-3 handset.

Telephone Set No.	Service	Dial No.	No. Plate	Dial Adapter No.	Apparatus Blank No.
300AW	Manual	.....	.....	.....	80A
300BW	Dial	5HH-3	147A	56A & 58A	...

No. 320 Type



Intended for use in Class 1, Groups B, C, and D atmospheres, as defined by the National Electrical Code.

The component parts of this set, except the hand set, are contained within an enclosure consisting of a cast aluminum housing and base having a threaded joint. Protection against probability of flames resulting from internal explosion reaching surrounding atmosphere is accomplished by strength of castings and by controlling length and clearance of openings through which any element in the design is brought through the housing.

Intended for use in common battery systems and for individual lines.

For more complete information on all types of telephone apparatus and cable see Western Electric Catalog 10. Consult your nearby Graybar office and warehouse.

Western Electric

Magnetic Telephones

**Sound Powered
No. 10A**



A sound powered unit which functions both in the transmission and reception of speech and signals without the use of batteries or other external source of power or excitation. Intended primarily for portable use or for semi-permanent installations. Used in railroad yards, coal mines, construction camps, lumber yards, golf clubs, gun clubs, on ships, docks, in fact any place where dependable portable telephone facilities would be advantageous.

All parts of this telephone are mounted on a die cast metal faceplate and are protected from mechanical injury and weather by a substantial, semi-hard rubber housing which stretches over the faceplate.

The set has a 2-conductor, waterproof cord. Conductors of cord terminate in spring clips for easy connection to a telephone line.

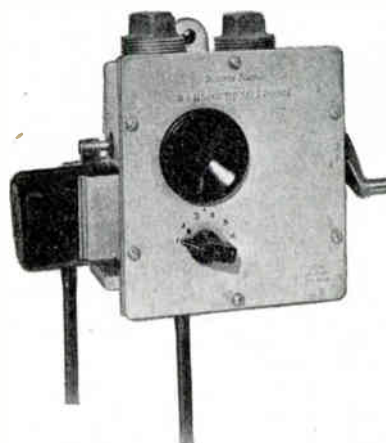
Carrying Case

A small leather carrying case (No. KS-10001) provided with a shoulder strap is available for the telephone.

Approximate overall dimensions of telephone, 3x3x2½ inches, exclusive of handle.

Weight, 2½ pounds.

No. 11A



Designed primarily for marine application. Approved for use on shipboard by the United States Department of Commerce. Requires no batteries or other source of electrical power for speech transmission and reception or signaling. Suitable also for many uses on land where a waterproof telephone system is desired, especially in installations where battery systems would be difficult or impracticable to maintain.

The internal parts are assembled in a waterproof cast aluminum box. Transmitter diaphragm which mounts in front of the faceplate behind the mouthpiece, has a non-corrosive moisture-resistant finish. Receiver has a soft rubber waterproof housing which stretches over faceplate. Waterproof receiver cord enters housing of telephone set through a watertight gland.

Western Electric
Hand Set Telephones
No. 1011A



For installer's and repairman's use in manual areas. Consists of soft rubber handle containing the following:

- No. F1 Transmitter Unit
- No. HA1 Receiver Unit
- No. W2BT Cord, 4 Ft. Long, Connected Externally
- Condenser (.10 Min., .15 Max. Mf.)
- Talking and Monitoring Switch
- Apparatus Blank

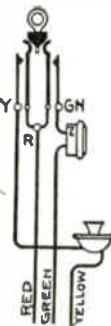
The switch is connected so as to shunt out the condenser when in the talking position.

No. 1002AC

Used in place of local battery bridging or central battery desk stands. Functions same as No. 1040AL desk stand in No. 1801 switchboard.

Transmitter and receiver are mounted on nickel-plated tubular brass frame, equipped with hard rubber handle. A switch mounted within frame is actuated by a plunger which terminates in a ring by which hand set is suspended when not in use. When hand set is removed from hook, switch is automatically closed. These hand sets may be used in place of desk stands if required. A

hook (No. 141A switch-hook) is furnished with each hand set.



Code No.	Transmitter	Receiver	Cords		Switch Combination
			Code No.	Length	
1002AC	267	141	318	4½ Ft.	2 Make
			(3 Conductors)		
			414	4¼ In.	
			415	9½ In.	

Western Electric
Connecting Blocks

No. 8A



One screw and cord tip terminal on each connector. Number of connectors, 6. Ebonized wood base: length, 5 inches; width, 1 inch; thickness, 5/8 inch.

No. 11 Type



Two screw terminals on each connector. Opposite terminals electrically connected. Base: length, 1½ inches; width, 1½ inches; thickness, 9/16 inch.

Code No.	11A	*11B	†11C
No. Connectors.....	2	2	2

*Consists of No. 11A with black finished metal cover.

†Same as No. 11B except under-surface of top of cover has insulating strip to protect terminals from short circuits.

No. 12 Type



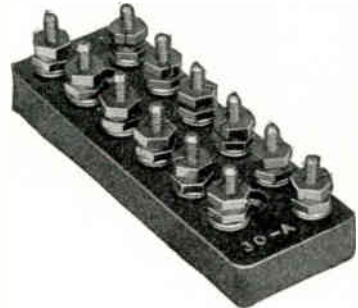
Same as No. 11 Type except has three slots in under side of base.

Base: length, 1½ inches; width, 1½ inches; thickness, 9/16 inch.

Code No.	12E	†12F
No. Connectors.....	3	3

†Consists of No. 12E with black finished metal cover.

No. 30 Type



Binding posts have locknuts with posts spun over to prevent loss of locknuts.

Composition base: width, 1½ inches; thickness, ½ inch.

Code No.	30A	30B	30C	30D
No. Connectors.....	12	22	32	52
Length Base.....	4¾ inches	7¾ inches	10¾ inches	16¼ inches

No. 31 Type



Each connector has one locknut binding post and one soldering terminal, brought out on the side.

Composition base: width, 1½ inches; thickness, ½ inch.

Code No.	31A	31B	31C	31D
No. Connectors.....	12	22	32	52
Length Base.....	4¾ inches	7¾ inches	10¾ inches	16¼ inches

No. 42A Type

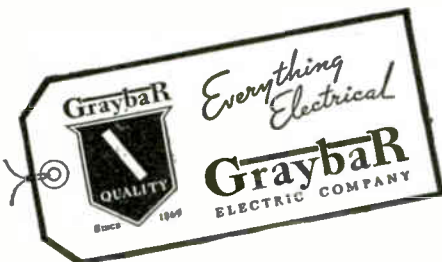


Cover Off

For use with combined handset mountings for fastening the handset mounting cord and the inside wire. Has a removable metal cover.

Composition base: length, 1½ inches; width, 1½ inches; thickness, ½ inch.

No.	42A-4	42A-9
Color.....	Ivory	Brown



For more complete information on all types of telephone apparatus and cable see Western Electric Catalog 10. Consult your nearby Graybar office and warehouse.

Western Electric Telephone Cords

There is a Western Electric cord to fit any telephone set or switchboard. If none of the cords described below meet your requirements, write us, sending if possible a sample cord or a sketch, paying particular attention to the kind of tip required. Always specify length of cord when ordering.

Desk Stand Cords

Code No.	Maker of Tinsel Conductor	Covering	Length Feet	Use
D2D9	2	Cotton	5½	302 Type Combined Tel. Set Desk Stands, BI—Tel. Set Mounting
D3P9	3	Cotton	5½	
D3AK9	3	Cotton	5½	
D4U9	4	Cotton	5½	302 Combination Telephone Sets
H3C9	3	Cotton	4	Hand Set and Desk Stands

Hand Set Cords

H3C9	3	Cotton	4	E1 and F1 Hand Set
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Switching Cords

S2A	2	Cotton	3, 4, 6, or 8	All Type Boards
S3B	3	Cotton	4, 5, 6, or 8	

Operators Cords

L4B	4	Cotton	...	Central Battery Board
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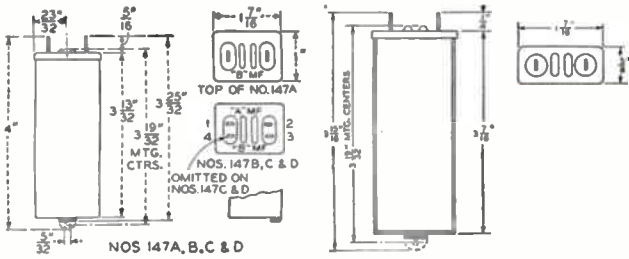
Receivers Cords

R2B	2	Cotton	6	144 Receiver
R2CE	2	Cotton	2½	40P Transmitter Arm
R2DW	2	Cotton	3	144 and 706A Receiver

Western Electric Condensers

Western Electric telephone condensers are of tinfoil and paper type. Paper dielectric used in separating tinfoil plates is prepared from selected stock.

Unmounted Type



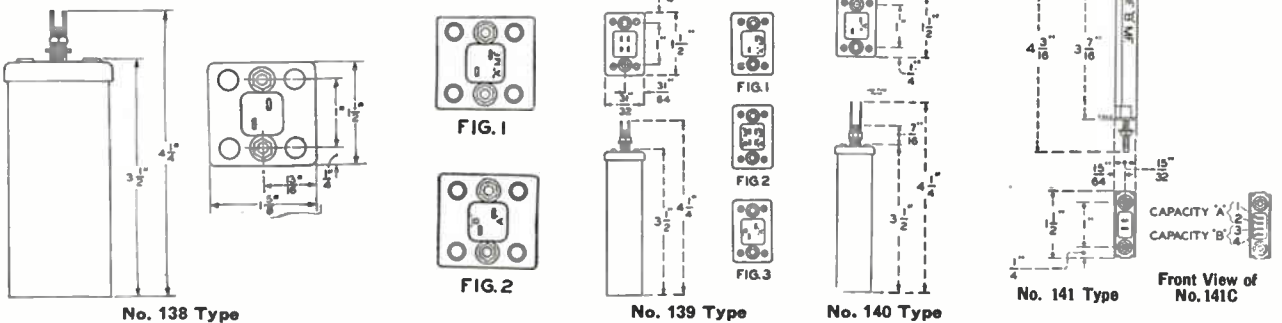
No. 147 Type

No. 149 Type

Tested on 500 volts d. c.

Code No.	Max.	CAPACITY M.F. STAMPED AT		Min.	Used in Set Nos.
		A	B		
147A	2.50	...	2.00	2.00	Gen., 311A, 1312A, 1314A
147B	1.25	1.00	...	1.00	General
	1.25	...	1.00	1.00	
*147C	1.25	1.00	...	1.00	Composite
	1.25	...	1.00	1.00	
*147D	1.25	1.00	...	1.00	Coil Racks
	.62	...	.5	.5	
149A	1.25	...	1.00	1.00	.....
149B	.62	...	.5	.50	.....
149C	.13	...	.1	.10	.....
149D	.80	...	.65	.65	.....
149E	1.25	...	1.00	1.00	.....
149F	.80	...	.65	.65	.....

Mounting Plate Type



No. 138 Type

No. 139 Type

No. 140 Type

No. 141 Type

Front View of No. 141C

Code No.	Fig. No.	Minimum	CAPACITY M.F. STAMPED ON CONDENSER AT		Maximum	Tested on Voltage
			A	B		
138A	1	1.00	1.00	...	1.25	1000 A.C.
139A	1	2.00	2.00	...	2.50	500 D.C.
140B	.	.62	.50	...	.50	1000 A.C.
140E	.	.125	.125	...	.160	1000 A.C.
141A	2	1.00	1.00	...	1.25	500 D.C.
*141C	}	.50	.50	...	.625	500 D.C.
		.50	.....	.50	.625	
141D	.	.25	.25	...	.32	500 D.C.
141J	.	.125	.125	...	.16	500 D.C.

*Values stamped at "A" are measured between terminals 1 and 2; values at "B", between terminals 3 and 4.

For more complete information on all types of telephone apparatus and cable see Western Electric Catalog 10. Consult your nearby Graybar office and warehouse.

Western Electric Tubular Fuses

Fiber Shell Type

Lead fuse wire prevents possibility of overheating shell. Fuses carry rated currents indefinitely without injury; act reliably on one and one-half times rated values.

Fuses of same code number and rated capacity give consistent performance as to rated and operating current values.

No. 7T



Used with B cable terminals and fuse chambers. Rated capacity, 7 amperes.

No. 11C



Used with Nos. 58AP and 1079AP protectors. Rated capacity, 7 amperes.

No. 7A



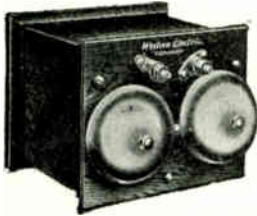
Used with Nos. 77, 1074A, 1075A, and 1078A protectors. Rated capacity, 1, 2, 3, 4, 5, or 7 amperes, as specified.

Western Electric
Subscriber Extension Bell Sets

Intended for auxiliary use as extension bells in connection with wall, desk, and transmitter arm telephones.

No. 127 Type

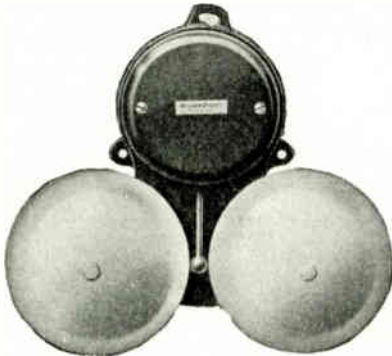
Set consists of a ringer mounted on the cover of a box. Each set is equipped with No. 2A binding posts for making line connections.



Operating current, a.c., not biased.

Golden oak finish.
Approximate overall dimensions: width, 6½ inches; height, 5¾ inches; depth, 4¾ inches.
Code No.... 127E 127F 127G
Ringer..... 38A 38B 38F
Approx. Resist. ohms. 1020 2500 1620
Gongs..... 26A 26A 26A

No. 392 Type—Loud Ringing



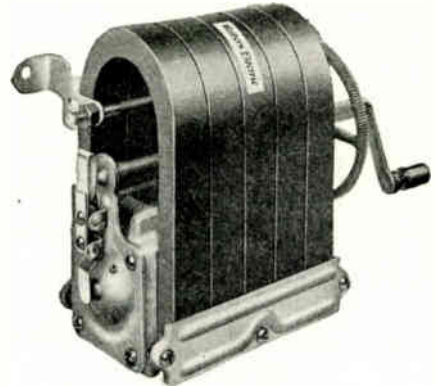
The windings of this bell are moisture-proofed. Metal parts are given a protective finish. Bells may be used on magneto telephone lines and in signaling systems are normally finished, that is, without a condenser. If bridged across a central battery telephone line a condenser must be connected in series with the ringer.

Base is arranged for mounting a condenser. Wiring is so arranged that a condenser may be connected in series with ringer. If a condenser is desired, specify on order.

Code No.	Approx. Resistance Ohms	Diam. of Gongs Inches	Operating Current	Condensers Used	Replaces
*392B	2500	6 (28A)	A.C. not Biased	149D	292U, 292AC and 392A
*392E	1600	6 (28A)	A.C. not Biased	147A	
*392G	1000	8 (23A)	A.C. not Biased	147A	292AB
*392H	2500	8 (23A)	A.C. not Biased	149D	392C and 392J
†392L	2500	6 (28A)	A.C. Biased	149D	

*Equipped with biasing arrangement if specified on order.
†Equipped with condenser.

Western Electric
Hand Generators
No. 48 Type



No. 48A

A powerful generator. Used in telephones for heavily loaded line service.

With a non-inductive load of 1500 ohms and an armature speed of 1025 rpm., this generator will give 80 volts a.c.

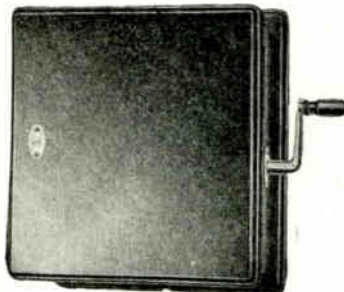
Code No.	Voltage	Normal Condition of Generator Circuit	Principal Use and Description
48A	80 A.C.	Open	Standard for Telephones Intended for Use on Heavily Loaded Lines
48C	80 A.C.	Open	Mine Telephone—All Parts are Treated to Resist the Action of Moisture and Fumes
48G	80 A.C.	Closed	No. 1800 Switchboards
48H	80 A.C.	Closed	Switchboards
48J	80 A.C.	Open	No. 1800 Switchboards
48P	80 A.C.	Open	Switchboards

No. 50 Type



Delivers 60 volts a.c. under a 1500-ohm non-inductive load (after being short-circuited for ½ minute) and an armature speed of 1025 rpm.

Western Electric
No. 299F Hand Generator Boxes



Consists of a No. 48A generator mounted in an oak cabinet having a hinged cover.

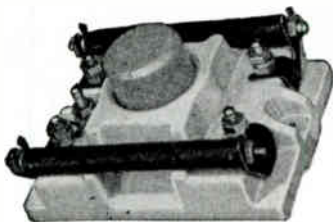
For a.c.

Width, 8 inches; depth, 6 inches; length, 9 inches.

For more complete information on all types of telephone apparatus and cable see Western Electric Catalog 10. Consult your nearby Graybar office and warehouse.

Western Electric

No. 98 Type Telephone Set Protectors



Protects central battery and magneto telephones against high potential (lightning) and abnormal current (crosses with electrical circuit).

Has two No. 11C fuses.

Line protection, 2 wire.

Code No.....	98A	98B
With Two Protector Blocks, Nos....	26 and 27	26 and 30

Western Electric

Protector Blocks



Nos. 26 and 27—Full Size

Ordinary lightning discharges will cause an arc across the air gap between the carbon blocks but will not heat them sufficiently to melt the cement used for holding the carbon plug in place. A cross with an electric light or power line, however, will cause a discharge or repeated discharges of such duration that the heating of the carbon insert of the No. 27 blocks will melt the cement holding it in place. This allows the mounting spring to push it into direct contact with the No. 26 block, thus permanently grounding the line.

No. 26



A solid piece of hard non-dusting carbon. Used with Nos. 27 and 30 type protector blocks.

No. 27



Used in central office protectors. Consists of a porcelain frame with a countersunk hard carbon plug which is fastened in place with low temperature fusing cement.

Color, white.

Western Electric

Protector Mountings

JACKS. Welded frame or cast, single or multiple mounting, single or multiple springs for use with standard Western Electric plugs are available for all purposes.

KEYS. Push button or lever type with practically any spring combination can be supplied.

PLUGS. Single or multiple, 1, 2, or 3-conductor for use with jack can be supplied.

RELAYS. Many types and innumerable spring combinations for low voltage work can be supplied.

RESISTANCES. Inductively and non-induction on brass core, single and double wound on Miconite core, spool type of various values and Lavite core types can be supplied.

TELEPHONE WIRES. Textile insulated, lacquer treated in 14, 16, 18, 19, 20, 22, 24 gage, single, paired, triple, and quadruple. In various colors for all types of low voltage work.

No. 83A



Protects drop wires between overhead lines and subscriber's telephone set from lightning.

Consists of an iron box $8\frac{3}{4} \times 3\frac{1}{2} \times 2\frac{1}{2}$ inches with a hinged cover having a No. 84A protector mounting within it. Arranged for pole mounting. Intended to be equipped with Nos. 26 and 30 protector blocks for cable protection for five pairs of wires. Box mounted underneath crossarms on poles. Two mounting lugs are provided for this purpose.

No. 93AW



Consists of a galvanized metal box having a slip cover with locking screws and two screws for mounting protector in box. Cover includes a shield of insulating material which protects line terminals from gases expelled during fuse operation. For use in housing No. 98A protector in outdoor installations. When equipped with a No. 98A protector entirely replaces the No. 1086A protector.

Overall dimensions, $7\frac{3}{4} \times 5\frac{1}{2} \times 2\frac{1}{16}$ inches.

Western Electric
Receivers
No. 528



For use in operators' telephone sets, common battery switchboards, and in public address systems.

With No. 11 type head band. D.C. resistance approximately 56 ohms. Impedance at 800 cycles, approximately 260 ohms. Black finished metal case and hard rubber earpiece.

No. 706A



Consists of a moulded case with HA-1 receiver unit. Springs for making electrical contact with receiver unit and a cap for holding unit in place are provided.

Western Electric
No. 635A Transmitters



Designed to permit the use of the high quality F1 transmitter unit in desk stands and wall sets. Furnishes a better grade of transmission than older desk stand transmitters using a carbon button.

Western Electric
Ringers



No. 38 Type

Western Electric Company ringers are wound with black enamel wire of Western Electric manufacture. Designed to give maximum ringing efficiency and at the same time offer high impedance to voice currents.

The gong posts are designed for engaging slotted gongs thereby assuring permanent gong adjustment.

Code No.	Ringer Code No.	Resistance Ohms	Biasing Feature	Current Adjusted For	GONG Posts		GONGS	
					Lgth. In.	Woodwork Thick. In.	Code No.	Diam. In.
38AG	38A	1000	None	A.C.	1 7/64	5/8	26A	3
38BG	38B	2500	None	A.C.	1 7/64	5/8	26A	3
38FG	38F	1600	None	A.C.	1 7/64	5/8	26A	3
53AG	53A	1020	None	A.C.	1 9/16	5/8	29A	2 1/2
53BG	53B	2500	None	A.C.	1 9/16	5/8	29A	2 1/2
53FG	53F	1620	None	A.C.	1 9/16	5/8	29A	2 1/2

No. B1A



A unit type biased ringer intended for use in H1 type telephone set mountings. Has a cantilever type biasing spring arranged for three settings and a stroke adjusting stop for adjusting the sound output.

Equipped with one No. 40A and one No. 40B gong. Can also be obtained equipped with two No. 40C or one No. 40D and one No. 40E gong when specified on the order. These ringers can also be obtained with a wooden clapper (P-465312) instead of a metal clapper, when specified in the order.

Has two coils having a total d.c. resistance of 4600 ohms ± 10%. The 900-cycle inductance is minimum 20 henries.

Western Electric

Telephone Switchboards and Systems

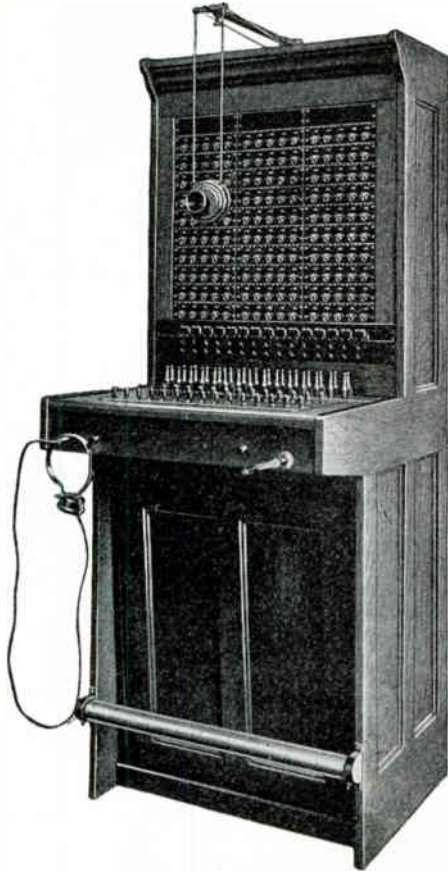
Western Electric telephone switchboards represent the result of over fifty years experience in the manufacture and design of telephone central office equipment.

The smaller switchboards will be found adequate to meet the requirement of every non-multiple central office. The larger central offices must of necessity be designed to care for the individual requirements of each exchange area. Western Electric engineers are equipped to make studies and recommend correct central office equipments for any part of the country.

Western Electric

Magneto Non-Multiple Switchboards

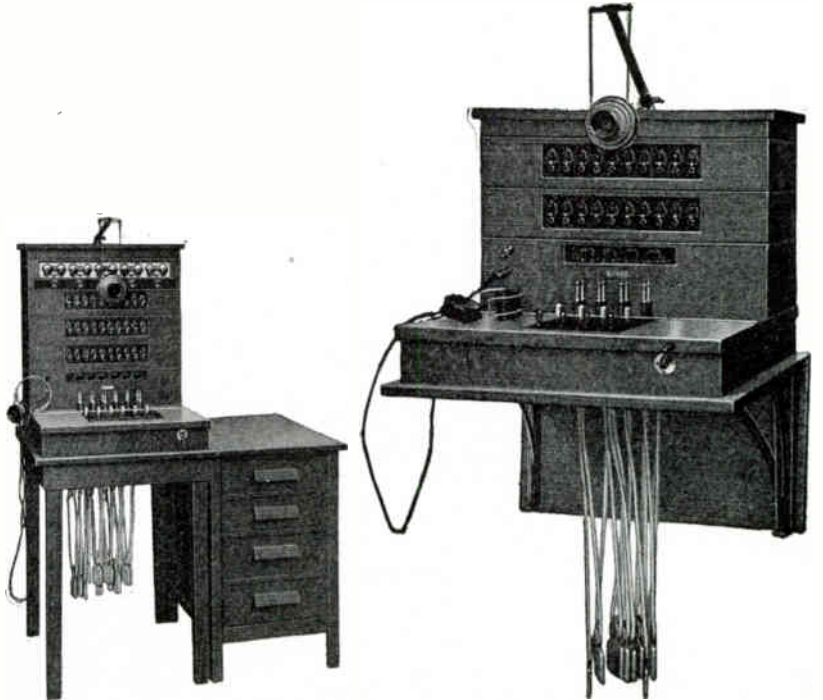
No. 1240D Type



A magneto non-multiple board with a capacity of 165 line circuits and 15 cord circuits. Constructed so that when more than 165 lines are necessary, additional sections may be added. It is possible for one operator to attend two boards which are lined up side by side.

The cabinet is of quarter-sawed oak, thoroughly seasoned and dried; full golden oak finish. All inside surfaces are shellac-treated.

No. 1800 Sectional Unit Type



Method of Assembling No. 1800 Switchboard to 35 Line Capacity

No. 1800 Sectional Switchboard Line Units Equipped with Combined Jacks and Signals

A small switchboard that meets traffic requirements and eliminates the necessity of buying an oversize switchboard. Recommended for small rapidly growing telephone exchanges where the ultimate capacity cannot be definitely determined.

Arranged for either desk or wall mounting.

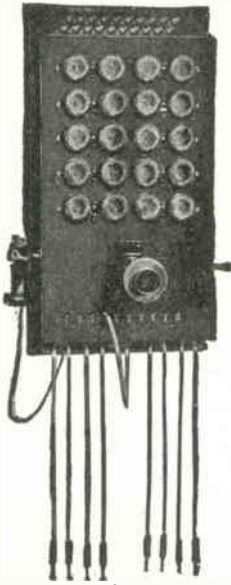
The capacity of the No. 1800 switchboard is from ten to fifty lines.

There are different types of base or supporting units, cord units, line units, and top units.

Units are assembled into a complete switchboard and can be arranged to meet any service conditions. Line units can be added at any time.

Each unit of the No. 1800 switchboard is constructed so that the entire equipment, including wiring, is accessible through doors in back. The circuits are comparatively simple. Cabinet is of red oak which has been thoroughly kiln dried and seasoned to eliminate warping. Exterior surfaces are dark, rubbed finish. Interior surfaces are treated to preserve the wood and prevent warping and cracking.

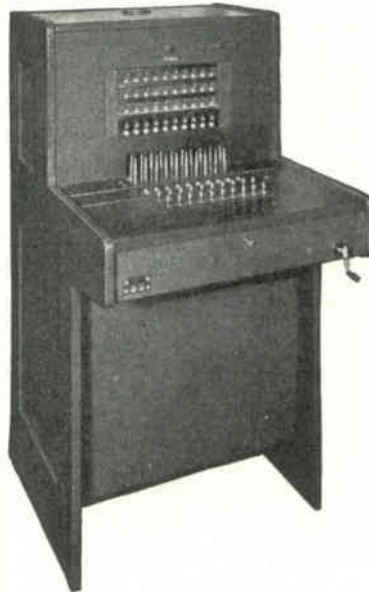
Western Electric
**No. 1012 Magneto Wall
 Switchboards—Ringer Type**



For use on exchanges having ten lines or less, and where number of calls does not warrant having a regular telephone operator in attendance. Being equipped with ringers, constant attendance at switchboard is not necessary as the bells can be heard at some distance from the board. In addition, indicators are supplied with each ringer which gives a visible signal showing which bell has been ringing.

The cabinet is well constructed of thoroughly seasoned, quarter-sawed oak, which is given a durable light finish. The front is hinged and the apparatus and wiring is within easy reach for inspection or maintenance.

Western Electric
**No. 551 Type P.B.X. Private Branch Exchange Switchboards
 No. 551A**



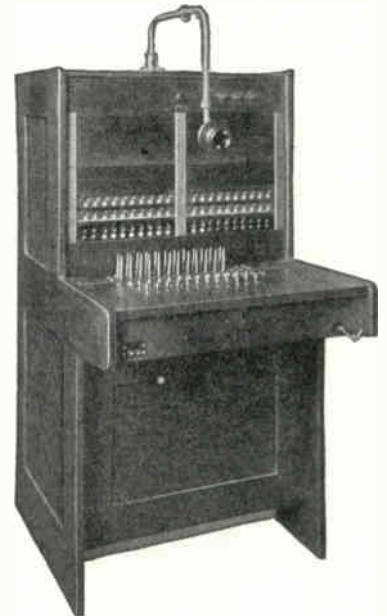
A switchboard of the single position, non-multiple type. Arranged for operation with either a manual or a dial central office.

Switchboard in either oak with natural finish or in mahogany with a mahogany-walnut finish. Lumber is kiln dried and thoroughly seasoned to prevent warping and cracking.

Capacity

Station Line Circuits.....	40
Trunk Circuits.....	10
Cord Circuits.....	10

Ten station line circuits may be equipped with line relays for long lines.

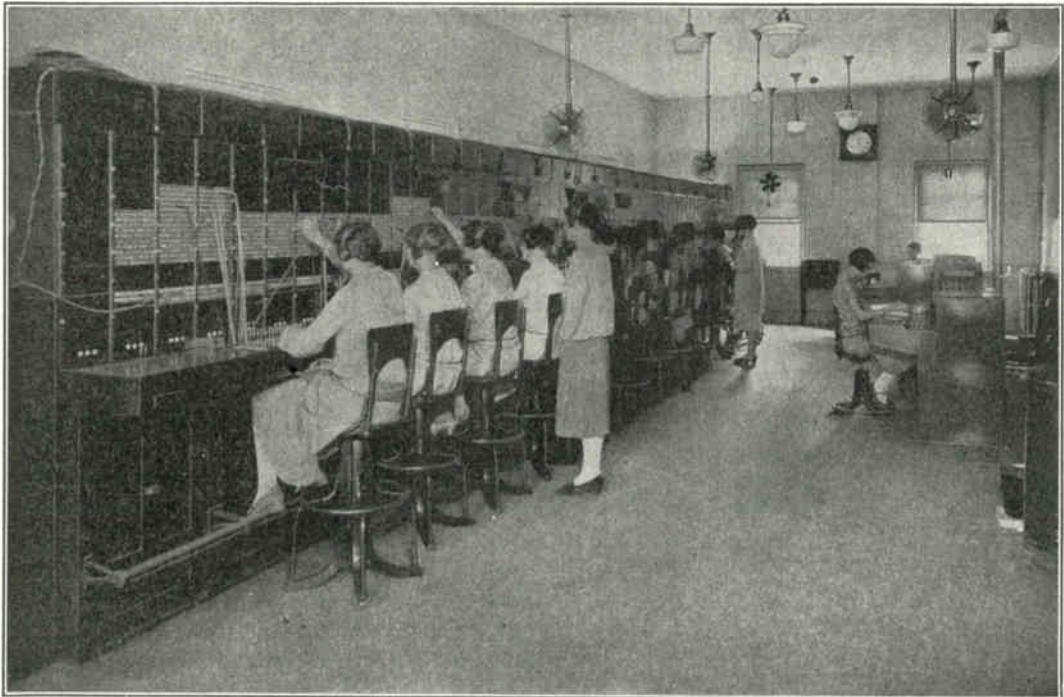


Similar to the No. 551A except has larger capacity, as follows:

Station Line Circuits	320
Trunk Circuits	15
Cord Circuits	15

Twenty of the station line circuits may be equipped with line relays.

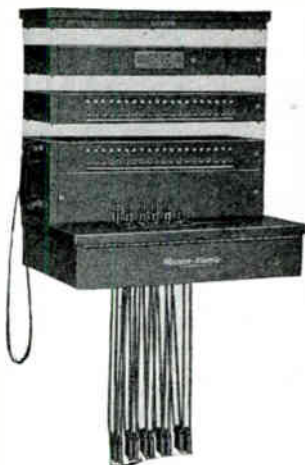
This switchboard has a maximum capacity of 320 lines but may be had with a capacity of eighty lines, the different capacities being arranged for by the use of different local cables.



Multiple Switchboard In Operation

For more complete information on all types of telephone apparatus and cable see Western Electric Catalog 10. Consult your nearby Graybar office and warehouse.

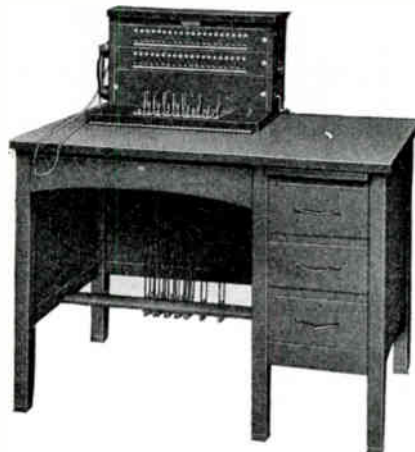
Western Electric
No. 1801 Private Branch Exchange Switchboards
 Sectional Unit Type



No. 1801 Switchboard
 Showing Method of Enlarging



No. 1801 P.B.X. Switchboard System B,
 Wall Mounted with Cord Casing



No. 1801 P.B.X. Switchboard System D,
 Desk Mounted

The Western Electric No. 1801 P.B.X. is a manual central battery system utilizing a small single position, non-multiple switchboard of the sectional unit type.

Suitable for use in medium-size industrial plants, department stores, apartment buildings, schools, hospitals, sanitariums, hotels, and public buildings.

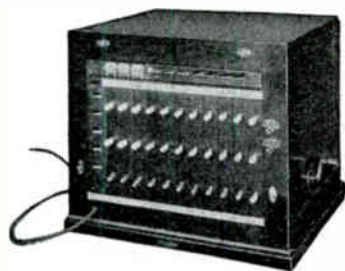
May be used with either a dial or a manual central battery central office. It is flexible and economical in operation, particularly suited to locations where the final capacity cannot be determined initially and is readily adaptable to the diversified line and traffic conditions encountered on private branch exchanges.

The units which comprise the No. 1801 P.B.X. can be assembled in the same way as those of a sectional bookcase.

The wood may be either oak in full red oak finish, or birch in mahogany finish.

Western Electric

No. 506 Type Cordless P.B.X. Switchboards



No. 506A

A single position turret of the cordless type. All connections are made by operation of keys.

Circuits are arranged for local manual service and for operation into either manual or machine switching central offices. The wiring and equipment are same for all systems.

A desk stand is provided for use of attendant. When required a dial is furnished with desk stand so connections can be made to a dial central office.

	Capacity	
Code No.	506A	506B
Positions	1	1
Trunk Circuits	3	5
Connecting Circuits	5	5
Station Line Circuits	7	12
Attendants Telephone Circuit	1	1
Ringing and Buzzer Circuit	1	1

Equipment Arrangements

The following four equipment arrangements are available:
SYSTEM A. Communication between attendant and stations.
SYSTEM B. Communication between attendant and stations. Intercommunication between stations.
SYSTEM C. Communication between attendant and stations. Intercommunication between stations. Trunk lines to a central battery central office. Direct current ringing.

SYSTEM D. Similar to System C, except that station bells are rung with alternating current and the trunks of System D may be connected into either a dial or a manual central battery central office.

Power Requirements

Since the quality of service obtained from a P.B.X. is affected materially by the efficiency of the power supply, power equipment designed particularly for this kind of service should be selected.

For talking, signaling, and direct current ringing, the No. 1801 P.B.X. requires a 20-28-volt, single battery supply. The 20-cycle alternating current ringing current required for System D may be obtained from a source outside the P.B.X. or at the P.B.X. by the use of a hand generator.

Western Electric

Magneto Cordless Switchboards

10 Line

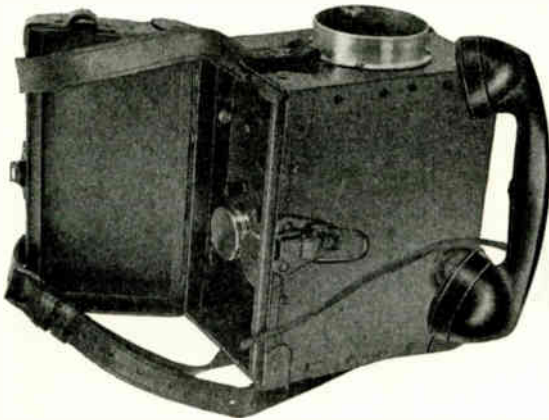
Intended for use in an area where the telephone company's central office is a magneto exchange or where the conditions are such that power cannot be supplied over cable pairs from central office. This type of switchboard is simple and economical in operation and will provide for the needs of an isolated factory or institution desiring intra-department communication.

This cordless magneto board is equipped with ten magneto station lines, any of which may be connected to the magneto office for trunking purposes. Five simultaneous connections are provided between lines by keys. There is one operator's telephone circuit, one ringing circuit, and a night alarm circuit. The trunks from the central office terminate on drops. This enables central to recall the P.B.X. operator at any time.

Cabinet is quarter-sawed white oak with light finish unless otherwise specified. Similar in appearance to the No. 506 type switchboard.

For more complete information on all types of telephone apparatus and cable see Western Electric Catalog 10.
 Consult your nearby Graybar office and warehouse.

Western Electric
No. 301A Portable Telephone Sets



For applications where a portable magneto telephone of rugged construction is required.

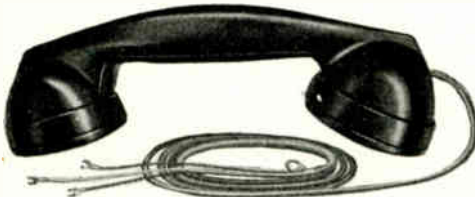
Set consists of a hand set and an aluminum chassis on which are mounted a hand generator, an induction coil, condenser, two battery containers, and a ringer mounting bracket. Assembled chassis is mounted in black fiber, wood-lined carrying case equipped with shoulder strap.

The F3CW-3 handset includes No. F1 transmitter unit and No. HA-1 receiver unit. A push-button switch in handset handle is used to set up the talking condition.

A ringer may be mounted in this set if one is desired; specify when ordering.

Four Type D, 1.5-volt dry cell flashlight batteries are required for operation. The low battery drain of the transmitter unit insures a long battery life. The batteries should be specified on the order if desired.

Western Electric
No. F1AW-3 Type Hand Sets



No. F1AW-3. For use with and forms a part of the No. 302 type combined telephone set. For general use at subscriber stations.

Consists of: No. F1 transmitter unit; No. HA1 receiver unit; No. H3C-9, 4-foot cord; No. F1W-3 hand set handle; No. P-456236 receiver cap; No. P-456235 transmitter cap.

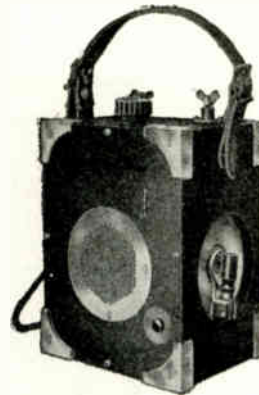
No. F2AW-3. For use in central offices and P.B.X. systems. Similar to No. F1AW-3 except with 4-conductor cord terminating in twin plug. Replaces the No. F2A-3.

Consists of: No. F1 transmitter unit; No. HA1 receiver unit; No. H4U cord; No. 289A plug; No. F2W-3 hand set handle; No. P-456236 receiver cap; No. P-456235 transmitter cap.

No. F2BW-3. For use in anti-sidetone local battery talking, common battery signaling subscribers' stations in manual and dial areas, and in key cabinets. Similar to No. F1AW-3 except that it employs a 4-conductor cord and a different receiver unit.

Consists of: No. F1 transmitter unit; No. HA2 receiver unit; No. H4T-9 cord; No. F2W-3 hand set handle; No. P-456236 receiver cap; No. P-456235 transmitter cap.

Western Electric
Portable Test Sets
No. 1017C



No. 1017 Type

In birch mahogany finish case; length, 6 $\frac{1}{2}$ inches; width, 4 $\frac{3}{8}$ inches; height, 7 $\frac{3}{8}$ inches. Weight, 7 pounds.

No. 1017E

Similar to No. 1017C set except equipped for use on either composed or straight telephone lines.

Contains the following:

- *No. 29F Generator
- No. 2E Buzzer
- No. 515 Receiver
- No. 13 Induction Coil
- No. 266 Transmitter
- *Operates a No. 56A drop through 11,500 ohms resistance.
- No. 714 Eveready Battery (must be ordered separately)
- No. 572 Cord, 2 Feet
- No. 6000A Interrupter

Nos. 90510 to 90530



Consists of a generator and ringer in series for testing through various line resistances.

Birch finished case measures 5 $\frac{3}{4}$ x6 $\frac{5}{8}$ x5 $\frac{1}{4}$ inches. A leather strap handle is provided.

No. 90530

List No.	Generator No.	RINGER		Gen. Operates Ringer Through Ohms
		Type	Ohms	
90530	22K	19B	2500	10,000
90510	22K	19H	500	35,000
90511	22N	19A	1000	50,000
90512	22N	19B	2500	100,000

Western Electric
G Type Handset Mountings



Arranged for use with the Nos. F1AW and F2BW or similar type hand sets.

Equipped with a bracket designed to permit adjustment of mounting to various lengths of desk top overhang. Bracket also permits mounting to be secured for hand set to hang on either side of the mounting or in front of the mounting.

Western Electric

Railway Train Dispatching Telephone Systems

Repeating Coils

Nos. 70A and 77A



No. 70A



No. 77A

Intended for use in phantom and simplex circuits. No. 70A is for use in connection with a.c. selectors. No. 77A has coil mounted on a wood base.

No.	70A	77A
No. of Coils.....	1	1
No. of Windings Each Coil.....	4	4
Resistances, Ohms:		
Primary.....	2 of 45	2 of 20
Secondary.....	2 of 40	2 of 21
Impedance Ratio.....	1 to 1	1 to 1
Wood Base..... inches	11x8 $\frac{3}{8}$	6x4

No. 121A

For protecting subscribers sets from high potential hazards when the telephone lines are located in exposure area of high tension power lines.

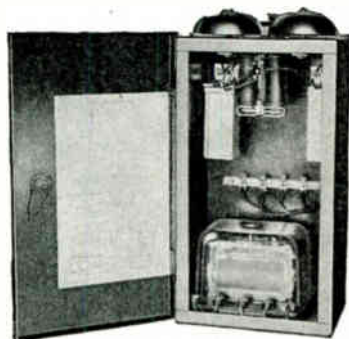
Consists of toroidal type coil potted in a cast iron case arranged for panel and telephone pole mounting. Average d.c. resistance of the set winding 131 ohms and of the line winding 37

ohms. Optimum terminating impedance of the subscriber's set winding and the line winding is 600 ohms each. Case is furnished with 6 foot leads.

Height, 14 $\frac{3}{4}$ inches. Width, 13 $\frac{1}{4}$ inches.

Replaces the No. 50A repeating coil except for additions and maintenance purposes.

A.C. Selector Sets



No. 160C Equipped with No. 60 Type Selector

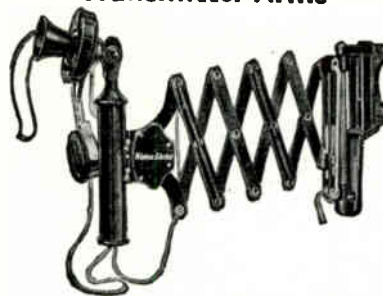
in the selector circuit. Replaces Nos. 160AC and 160BC selector sets. Metal box, 13x7x5 $\frac{1}{2}$ inches, equipped with No. 60CG ringer, No. 138B condenser and No. 141H condenser.

No. 160R.—Same as No. 160C except it is used when selectors are operated through repeating coils. Replaces Nos. 160AR and 160BR selector sets. Metal box, 13x7x5 $\frac{1}{2}$ inches, equipped with No. 60CG ringer and No. 141H condenser.

Recommended for all new installations. Nos. 160C and 160R selector sets consist of a housing and the necessary associated apparatus and wiring for mounting Nos. 60AP or 60BP selectors. The selector is not furnished as a part of the set and must be ordered separately.

No. 160C.—Used at way stations on a.c. train dispatching and message circuits when condensers are desired

Transmitter Arms



No. 1048DD

No. 1048DA.—Adjustable folding arm, having telephone set incorporated in it. Mounts on side of a roll top desk. Includes: No. 148DA transmitter arm, No. 349 transmitter, No. 186 receiver, 8 feet No. 409 cord and 2 $\frac{1}{2}$ feet No. 554 cord.

No. 1048DB.—Adjustable folding arm, having telephone set incorporated in it. Mounts on side of flat top desk or on wall. Includes: No. 148DB transmitter arm, No. 349 transmitter, No. 186 receiver and two 9 $\frac{7}{8}$ inches No. 427 cords.

No. 1048DC.—Same as No. 1048DA, except mounts on top of flat top desk.

No. 1048DD.—Same as No. 1048DA except mounts on wall in way stations where it is desired to place a flat top desk against the wall.

No. 1048GA.—Train dispatching at way stations with a desk set box employing a four conductor cord and an induction coil having the primary and secondary windings insulated from each other. Equipped with a No. 349 transmitter, No. 186 receiver, 8 feet No. 416 cord, 2 $\frac{1}{2}$ feet No. 554 cord and 9 $\frac{7}{8}$ inches No. 330 cord. Mounts on side of roll top desk.

No. 1048GB.—Same as No. 1048GA except mounts on wall or side of flat top desk.

No. 1048GC.—Same as No. 1048GA except mounts on top of flat top desk.

No. 1048GD.—Same as No. 1048GA except mounts on wall in way stations where it is desired to place a flat top desk against the wall.

No. 386 Transmitters

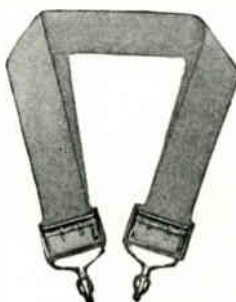


Head Telephone Set with No. 386 Transmitter

A low resistance insulated aluminum centrally damped local battery chest transmitter. Replaces No. 283 transmitter.

Used with No. 375 cord in dispatcher telephone sets.

Transmitter Attachments



No. 3A

Used for supporting chest type transmitter.

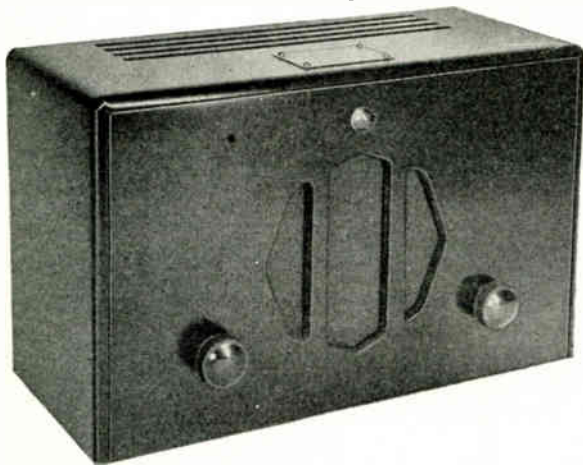
No. 2A.—Buckle only.

No. 3A.—Buckle and slate colored tape.

No. 3B.—Buckle and black colored tape.

No. 3C.—Buckle and white colored tape.

Western Electric
Railway Train Dispatching Telephone Systems
No. 100E Loud Speaker Sets



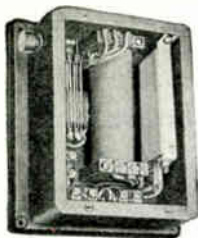
Consists of a two-stage resistance-coupled amplifier and a Jensen midget speaker mounted in a walnut finished cabinet. The approximate overall dimensions are 11½ inches long by 7 inches high by 5½ inches deep. The gain of the amplifier when operating from an impedance of 300 to 600 ohms is approximately 60 decibels.

The set will operate on a power supply of 105-125 volt, 25-60 cycle a.c. or on a power supply of 105-125 volt d.c. It is necessary to pole the power cord correctly when connecting the No. 100E loud speaker to a d.c. source. It is also desirable to pole the cord when using an a.c. source, since the noise with one polarity connection is generally less than with the opposite polarity connection. The power consumption is approximately 60 watts.

The power switch (right-hand knob) has three positions. In the first or off position (maximum counter-clockwise) the power supply is open. In the second position the power circuit is closed and sufficient current is provided to maintain the tube heating elements at a temperature where response may be obtained quickly from the amplifier when desired without shortening the life of the tubes. Also in the second position the signal lamp will light up with moderate brightness and the amplifier output is short circuited to prevent any response. In the third position, the heating elements of the tubes receive full current, the signal lamp assumes full brightness, the short circuit is removed from the output of the amplifier and the set is ready for operation.

For complete information write your nearby Graybar Warehouse.

Way Station Desk Set Boxes



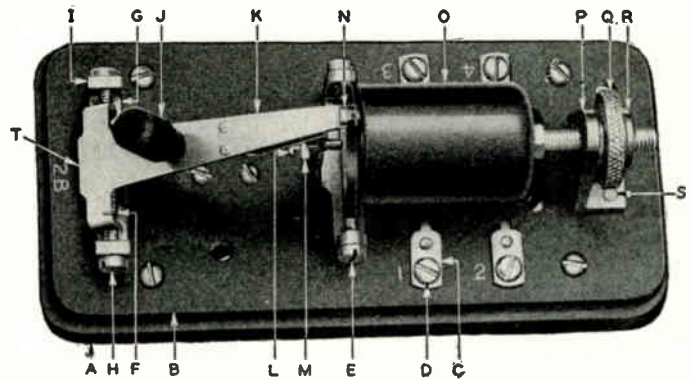
Used on train dispatching circuits in way station telephone sets with desk stand, flexiphones or transmitter arm, equipped with No. 349 transmitter and No. 189 receiver.

No. 501B desk set box, together with the No. 501A, replaces No. 295AK on new installations.

No.	Con- denser No.	Induc- tion Coil No.	Description
501A	*142B	42	Equipped with One No. 1014A Push Button
501B	*142B	42	Arranged for No. 3C Foot Switch

*When ordering this condenser to replace 21 type used in earlier equipment see notes under condensers for type of bracket or adapter required.

No. 2B Circuit Breakers



An overload circuit breaker, designed for use in the main battery circuit of train dispatching lines to protect the relays and associated apparatus from excess currents, due to short circuits. It consists of a coil, armature and circuit breaker arm mounted on a black phenol fibre base, the overall dimensions being approximately 3¾x6 inches, and extending out from the wall approximately 4 inches, when the arm is in the open or operating position. The resistance of the circuit breaker is two ohms and it is normally adjusted to operate on 0.6 ampere and not to operate on 0.4 ampere. These values can be increased or decreased by adjusting the air gap between the armature and the magnet by means of a knurled nut at the extreme end of the magnet. The best setting for the circuit breaker will depend somewhat on the local conditions for each installation.

Has coin silver contacts and is equipped with alarm contacts.

Replacement Parts

Part No.	Ltr.	Description	Part No.	Ltr.	Description
P-95346	A	Sub-Base	P-95326	*N	Armature
P-227865	B	Base	P-95327	O	Coil
P-229128	C	Binding Post	P-95316	P	Adjusting Bracket
P-228895	D	Screw	P-95330	Q	Adjusting Nut
P-95320	E	Trunnion Screw	P-95333	R	Tension Bracket
P-95336	F	Helical Spring	P-95331	S	Bracket Screw
P-95337	G	Screw	P-95332	T	Alarm Stud
P-95335	H	Pivot Screw	P-227868		Spring Pileup
P-95334	I	Trunnion Bracket	P-139931	..	Screw
P-132717	J	Handle	P-133451	..	Insulator
P-227867	*K	Arm	P-107040	..	Clamping Plate
P-95338			P-13549	..	Bushing
P-95339			P-166669	..	Upper Contact Spring
P-95340			P-148240	..	Lower Contact Spring
P-95321	L	Adjusting Screw			
P-95322	M	Adjusting Nut			

*To be assembled.

Foot Switches

No. 1B.—Used in dispatcher telephone set. Spring makes on contact.

No. 3B.—Used in way station telephone set. Spring makes two and breaks one contact.

No. 3C.—Used in way station telephone set with No. 501B desk set boxes. Spring makes three and breaks two contacts.

No. 3D.—Used in towers with No. 501B desk set boxes and No. 6052A amplifier. Spring makes 4 and breaks two contacts.



No. 1B

Western Electric Railway Train Dispatching Telephone Systems Selector Keys



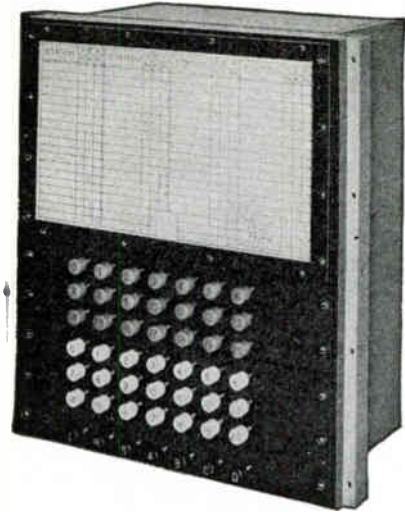
No. 62A

Selector keys are master calling keys arranged to operate any or all selectors on a line to ringing position by pushing one small locking key in each of the two groups of keys.

Nos. 62A and 62B are arranged for desk or table mounting and the main apparatus unit is arranged so that it can be removed from its base by means of a jack connection.

Nos. 63A and 63B are arranged for mounting in the face equipment of a No. 604 P.B.X. switchboard between the stiles (10¼-inch face mounting). Arranged so that keys may be removed from the switchboard either from the front or rear.

No. 62A.—Provides means for calling all selectors in the 17 step selector code. Keys have two groups of 14 keys each and one group of 7 keys. The metal frame and cover are finished in black.



No. 63B

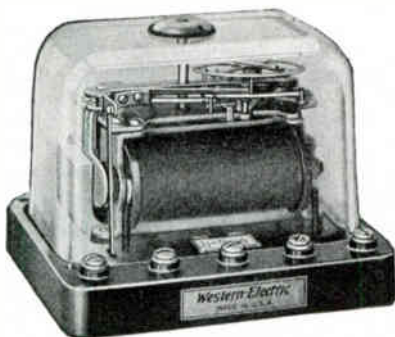
No. 62B.—Provides means for calling all selectors in the 27 step selector code. Keys have two groups of 21 keys each and one group of 7 keys. The metal frame and cover are finished in black.

No. 63A.—Provides means for calling all selectors in the 17 step selector code. Keys have two groups of 14 keys each and one group of 7 keys. The metal frame and cover are finished in aluminum.

No. 63B.—Provides means for calling selectors in the 27 step selector code. Keys have two groups of 21 keys each and one group of 7 keys. The metal frame and cover are finished in aluminum.

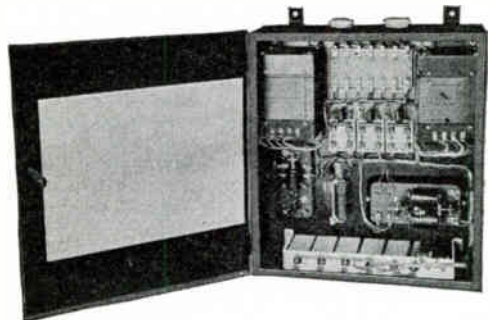
No.	62A	62B	63A	63B
Approx. Overall Height.....inches	12½	12½	10⅝	10⅝
Approx. Overall Width.....inches	10¼	10¼	9¾	9¾
Approx. Overall Depth.....inches	6½	6½	6¼	6¼

No. 60AP Selectors



Used at way stations in Nos. 160C and 160R selector sets. Alternating selector, mounted on phenol base and supplied with a glass cover. Operates on 17 impulses which give a total of 78 code settings. Also equipped for receiving time signals. Resistance, 21000 ohms.

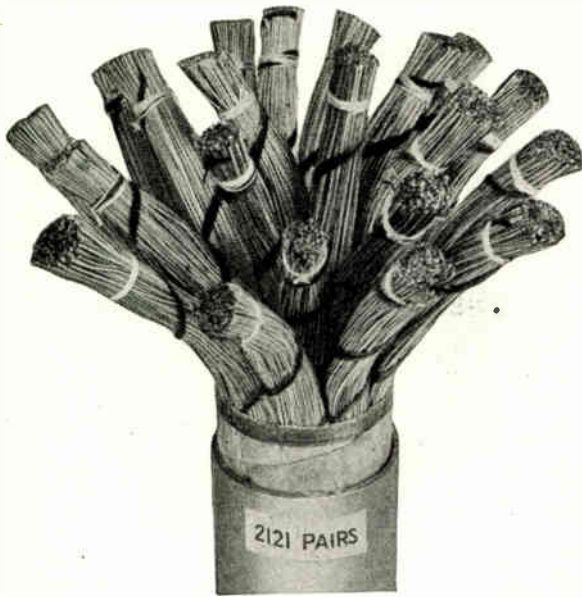
No. 60B Selector Apparatus Cases



Used at dispatchers office on train dispatching systems. Replaces No. 60A selector apparatus case. Metal case, 16⅞x20½x6⅞ inches.

No.	Quantity	Description	No.	Quantity	Description
152A	2	Retardation Coils	63F	1	Resistance
26A	1	Relay.....	138B	4	Condensers
221JB	1	Relay.....	138A	1	Condenser
2B	1	Circuit Breaker..	141A	1	Condenser
629A	1	Mounting Plate..	709	3	Trumbull
63C	4	Resistances.....			Knife Switches DPST

Western Electric
Lead Covered Telephone Cable



2121 Pair Cable

Types of Cable

Lead-covered cable may be divided into three general classes as follows:

1. Paper insulated cable for aerial or underground use. (Lead covered or lead covered and jute protected or lead covered and steel tape armored).
2. Paper insulated cable, submarine or gully type. (Lead covered, steel wire armored).
3. Textile insulated cable.

Aerial or Underground Cable**Lead Covered**

Under the usual conditions of installation of telephone cables the same type of cable may be used for aerial construction or in ducts underground. The various types of lead-covered cable for aerial or underground use are as follows: NH, CNB, CSA, BPA, DSM, and BST.

Jute Protected

A type of cover for the cable sheath has been developed which effectively protects the sheath from soil corrosion. This protection consists of wrappings of paper and jute which have been impregnated with preservative compound and which are flooded with asphaltic compound while being applied to the cable. Cables having this covering are referred to as jute protected. Jute protected cables are about .2 inch larger in overall diameter than unprotected cables for smaller sizes and about .3 inch larger for full size cables. Any lead-covered cable can be furnished jute protected if so noted on the order.

Tape Armored

This type of sheath covering is similar to that used for the jute protected cables except for the addition of the steel tapes and a further covering of asphalt flooded jute. For the tape armored cable the increase in diameter varies with the size of the cable from about .3 to .6 inches. Any lead-covered cable can be furnished tape armored if so noted on the order.

Galvanized Tape Armored

Galvanized tape armored cable for aerial use can be furnished where some protection against low frequency induction from power lines is desired. If individual condition necessitates this type of cable, write nearest distributor, giving details and information; prices will be furnished.

For more complete information on all types of telephone apparatus and cable see Western Electric Catalog 10.
Consult your nearby Graybar office and warehouse.

Unit Stranded Cable—Paper Pulp Insulation

A new form of paper insulation has been developed by the Western Electric Company which is known as pulp insulation because of its method of application to the wire. Paper is made directly on conductor in such a way as to form a continuous, seamless tube.

Submarine and Gully Type Cable, Wire Armored

Paper insulated submarine and gully type cable may be divided into three general classes:

1. High dielectric strength, tight core cable. Used in comparatively long lengths where cost of repairing a break in cable will be less than cost of new cable.
2. High dielectric strength, loose core cable. Used in comparatively short lengths where high transmission efficiency and high dielectric strength are of importance. For example, a short crossing cable connecting important open wire.
3. Single paper insulated loose core cable. Used in comparatively short lengths where so high a dielectric strength is not necessary. For example, a short crossing cable connecting land cables.

Submarine Type

Single or double armored cable can be furnished. Double armor is used in cases of severe mechanical requirements. In still water with a mud bottom, single armor will be sufficient. With a rocky or uneven bottom, or with strong tides or currents, double armor should be considered.

Gully Type

A light wire armored cable for crossing gullies, small streams and swamps. This cable provides greater mechanical strength than the tape armored cable and is lighter and less expensive than standard wire armored submarine design. Has same protection against soil corrosion as jute protected cable.

Textile Insulated Cable

Paper insulated cables are usually terminated in buildings by splicing on a short piece of lead covered textile insulated cable. Commercial textile yarns are liable to contain soluble salts, which will cause electrolytic action when exposed to moist atmospheres and result in poor insulation and sometimes produce corrosion of the conductors. It has been found that by removing such impurities substantial improvements of the insulating properties of the textiles are obtained. Only purified textiles are used in Western Electric Cables.

Special Cable

Special conditions often require cables with different characteristics from those which have been standardized and coded. Paper insulated cable, designed to withstand test potentials up to 1,500 volts a.c., is supplied for special circuits such as for telegraph or signal circuits. If an individual condition necessitates special cable, write the nearest distributor.

Composite Cable

Composite cable, composed of conductors of two or more gages can be furnished if desired. The combinations of pairs which will utilize the space within the lead sheath most economically are somewhat limited. Recommendations will be made along this line. Consult nearest distributor.

Quadded Cable

Paper and textile insulated quadded lead covered cable for toll telephone and telegraph purposes can be furnished if desired. Recommendations will be made upon receipt of detailed information. Consult nearest distributor.

Reels

Cable is shipped on reels. Ends of cable are fastened securely to reels, and unarmored cable is protected by lags nailed around periphery of reel.

Guarantee

Coding of cables is on basis of actual number of pairs in cable. The number of pairs indicated in tables are guaranteed to be free from opens, shorts, crosses, and grounds. The capacitance and the conductor resistance are guaranteed not to increase nor the insulation resistance to decrease beyond the limits stated due to defective material or manufacture.

Western Electric

Lead Covered Telephone Cable

Advantages

As a means to practically uninterrupted communication, Western Electric Lead Covered Cable offers a number of conspicuous advantages, making for better service, better public relations, and money economies.

This lead covered cable possesses several advantages of material benefit to its users, among which are:

1. They make use of the most suitable designs and materials to secure and maintain the highest class of telephone transmission, as determined by many years of research work conducted by Bell Telephone Laboratories, and by constant tests in the field, in close cooperation with the largest users of telephone cable in the world.

2. The reliability of the Western Electric product is proved by the fact that more than half the telephone cable throughout the world is of Western Electric design.

3. Cables are manufactured by the Western Electric as an essential part of the telephone plant which must not only give the most efficient performance possible, but must maintain this efficiency through the greatest possible number of years. To accomplish this object, every part of telephone cable is designed not only to give the electrical qualities required, but to insure a maximum of mechanical ruggedness and protection against damage. As an example of this, a given mutual capacitance can be obtained in either a soft core or a hard core cable. The hard core cable is somewhat larger in diameter and contains a larger amount of insulating paper. The soft core cable is bound to be soft or mushy to such an extent that it has a decided tendency to buckle when bent. It is therefore more difficult to install than the harder core cable. Western Electric cables are designed to have satisfactory mechanical characteristics.

Transmission

Transmission efficiency of telephone cable depends upon its capacitance and conductor resistance. When telephone cable forms a portion of a completed telephone connection, the transmission efficiency of the telephone connection as affected by the cable portion depends somewhat on the relative position of the cable in that circuit and also on the type of other construction to which it is connected.

The length of circuit which, when connected to short subscribers' loops, will cause a transmission loss of 30 db. (units of transmission loss, called decibels) is considered about the maximum length over which commercial transmission can be secured.

Type NH—Paper-Ribbon Insulated

SHEATH. Lead antimony.

CONDUCTORS. No. 16 A.W.G. single dry paper tape insulation. Blue-orange pairs alternating with green-orange pairs, except for two orange-white tracer pairs, one in the center and one in the outside layer and a red-orange pair in each layer containing an odd number of pairs.

MUTUAL CAPACITANCE. A.c. testing average any reel not exceeding .072 microfarad per mile of cable at 60°F.

CONDUCTOR RESISTANCE. Not exceeding 23 ohms per mile of cable at 68°F.; any conductor.

INSULATION RESISTANCE. Not less than 500 megohm miles at 60°F.; any conductor.

DIELECTRIC STRENGTH. Insulation between conductors capable of withstanding for two seconds an a.c. test potential whose maximum instantaneous value is 1000 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1400 volts.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness Sheath Inches	Mean O.D. Inches	Convenient No. of Feet on Reels	Approx. Weight Pounds per Foot
NH 26	26	.080	1.13	2000	1.78
NH 51	51	.089	1.52	1500	2.92
NH101	101	.103	2.11	1000	5.07
NH152	152	.113	2.54	750	7.05

Capacitance

The capacitance of a cable circuit is important because it limits to a large extent the length of cable through which it is possible to transmit speech. The capacitance may be specified either as mutual, that is, the capacitance between the two wires or a pair; or as grounded, that is, the capacitance between a wire and all the other wires and the sheath. Mutual capacitance is preferable in defining the quality of the cable for telephone transmission, since the conductors are used in pairs as metallic circuits and seldom, if ever, singly as grounded lines. The grounded capacitance is about 1.6 times the mutual, but this ratio varies somewhat for different cables.

Capacitance may be measured by the d.c. charge method, the d.c. discharge method, or the a.c. method. The a.c. method, using a frequency of 800 cycles or higher, is preferable because it measures the true capacitance for the voice currents. The d.c. capacitance tends to be higher than the a.c. capacitance. The d.c. charge method is less subject to error due to improper manipulation of the testing equipment than the d.c. discharge method.

Western Electric cables are tested for mutual capacitance by the a.c. method, unless specifically requested otherwise.

Extra Pairs

Extra pairs are placed in all cables containing conductors smaller than No. 16 to take care of any pairs which may become defective in manufacture. In the majority of cables all or part of the extra pairs will often be found good and may be used for additional circuits. All pairs of No. 16 A.W.G. and larger except in submarine cable are guaranteed to meet the specification requirements when the cable leaves our factory.

The coding of all cables is on the basis of the actual number of pairs. Actual and guaranteed numbers of pairs in the various sizes of standard cables containing conductors smaller than No. 16 A.W.G. are as follows:

Actual Pairs	Guaranteed Pairs
6 to 149	Actual pairs less one
150 to 249	Actual pairs less two
250 to 349	Actual pairs less three
350 to 449	Actual pairs less four
450 to 505	Actual pairs less five
606	Actual pairs less six
909	Actual pairs less nine
1212	Actual pairs less twelve
1818	Actual pairs less eighteen

For Aerial or Underground Use

Type CNB—Paper-Ribbon Insulated

SHEATH AND INSULATION RESISTANCE. Same as for Type NH. **CONDUCTORS.** No. 19 A.W.G. single dry paper tape insulation, with color groups depending upon size.

MUTUAL CAPACITANCE. A.c. testing, average any reel not exceeding .090 microfarad per mile of cable at 60°F.

CONDUCTOR RESISTANCE. Not exceeding 46 ohms per mile of cable at 68°F.; any conductor.

DIELECTRIC STRENGTH. Insulation between conductors capable of withstanding for two seconds an a.c. test potential whose maximum instantaneous value is 700 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1400 volts.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness Sheath Inches	Mean O.D. Inches	Convenient No. of Feet on Reels	Approx. Weight Pounds per Foot
CNB 6	5	.063	.42	2800	.41
CNB 11	10	.065	.52	3000	.56
CNB 16	15	.067	.60	4000	.70
CNB 26	25	.070	.72	3000	.93
CNB 51	50	.075	.95	2500	1.46
CNB 76	75	.080	1.14	2200	1.99
CNB101	100	.084	1.29	1700	2.46
CNB152	151	.090	1.56	1400	3.38
CNB202	201	.095	1.78	1400	4.27
CNB303	302	.104	2.15	900	5.97
CNB404	402	.112	2.47	700	7.68
CNB455	452	.115	2.61	650	8.48

For more complete information on all types of telephone apparatus and cable see Western Electric Catalog 10. Consult your nearby Graybar office and warehouse.

Western Electric
Lead Covered Telephone Cable

For Aerial or Underground Use

Type BPA—Paper-Ribbon Insulated

SHEATH. Lead antimony.

CONDUCTORS. No. 22 A.W.G. double dry paper tape insulation, with color groups depending upon size.

MUTUAL CAPACITANCE. A.c. testing, average any reel not exceeding .095 microfarad per mile of cable at 60°F.

CONDUCTOR RESISTANCE. Not exceeding 92 ohms per mile of cable at 68°F.; any conductor.

INSULATION RESISTANCE. Not less than 500 megohm miles at 60°F.; any conductor.

DIELECTRIC STRENGTH. Insulation between conductors capable of withstanding for two seconds any a.c. test potential whose maximum instantaneous value is 700 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1400 volts.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness Sheath Inches	Mean O.D. Inches	Convenient No. of Feet on Reels	Approx. Weight Pounds per Foot
BPA 6	5	.061	.36	3500	.31
BPA 11	10	.063	.42	3500	.40
BPA 16	15	.064	.47	3500	.48
BPA 26	25	.066	.55	3500	.62
BPA 51	50	.070	.73	3500	.95
BPA 76	75	.073	.85	3500	1.22
BPA101	100	.076	.96	3000	1.51
BPA152	151	.080	1.14	2000	2.01
BPA202	201	.084	1.29	2000	2.49
BPA303	301	.090	1.56	1500	3.42
BPA404	401	.095	1.78	1500	4.33
BPA606	602	.105	2.18	1060	6.14

Type CSA—Paper-Pulp Insulated

SHEATH. Lead antimony.

CONDUCTORS. No. 22 A.W.G. pulp insulation, with color groups depending upon size.

STRANDING. Multiple-unit design 152 pairs and larger.

MUTUAL CAPACITANCE. A.c. testing, average any reel not exceeding .090 microfarad per mile of cable at 60°F.

CONDUCTOR RESISTANCE. Not exceeding 92 ohms per mile of cable at 68°F.; any conductor.

INSULATION RESISTANCE. Not less than 500 megohm miles at 60°F.; any conductor.

DIELECTRIC STRENGTH. Insulation between conductors capable of withstanding for two seconds an a.c. test potential whose maximum instantaneous value is 500 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1400 volts.

CSA 11	10	.063	.42	3500	.40
CSA 16	15	.064	.47	3500	.48
CSA 26	25	.066	.57	4200	.63
CSA 51	50	.070	.73	3000	.95
CSA 76	75	.073	.86	2400	1.23
CSA101	100	.076	.98	3000	1.51
CSA152	151	.080	1.16	1700	2.01
CSA202	201	.084	1.32	1600	2.51
CSA303	301	.091	1.59	1400	3.45
CSA404	401	.095	1.78	1200	4.27
CSA606	602	.104	2.15	900	5.97
CSA909	903	.115	2.61	650	8.46

Type BST—Paper-Pulp Insulated

SHEATH. Lead antimony.

CONDUCTORS. No. 26 A.W.G. pulp insulation, with color groups depending upon size.

STRANDING. Multiple-unit design 152 pairs and larger.

MUTUAL CAPACITANCE. A.c. testing, average any reel not exceeding .085 microfarad per mile of cable at 60°F.

CONDUCTOR RESISTANCE. Not exceeding 230 ohms per mile of cable at 68°F.; any conductor.

INSULATION RESISTANCE. Not less than 500 megohm miles at 60°F.; any conductor.

DIELECTRIC STRENGTH. Insulation between conductors capable of withstanding for two seconds an a.c. test potential whose maximum instantaneous value is 500 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1200 volts.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness Sheath Inches	Mean O.D. Inches	Convenient No. of Feet on Reels	Approx. Weight Pounds per Foot
BST 11	10	.060	.32	3500	.27
BST 16	15	.061	.36	3300	.31
BST 26	25	.063	.42	4000	.40
BST 51	50	.065	.52	4200	.55
BST 76	75	.067	.60	3700	.69
BST 101	100	.069	.69	3500	.84
BST 152	150	.072	.80	2400	1.08
BST 202	200	.074	.90	2500	1.30
BST 303	300	.078	1.08	1600	1.74
BST 404	400	.082	1.21	1600	2.16
BST 606	601	.087	1.46	1400	2.90
BST 909	902	.094	1.75	1100	4.00
BST1212	1203	.100	2.00	900	5.11
BST1818	1806	.110	2.41	650	7.09
BST2121	2108	.115	2.61	650	8.15

Type DSM—Paper-Pulp Insulated

SHEATH. Lead antimony.

CONDUCTORS. No. 24 A.W.G. pulp insulation, with color groups depending upon size.

STRANDING. Multiple-unit design 152 pairs and larger.

MUTUAL CAPACITANCE. A.c. testing, average any reel not exceeding .090 microfarad per mile of cable, at 60°F.

CONDUCTOR RESISTANCE. Not exceeding 145 ohms per mile of cable, at 68°F.; any conductor.

INSULATION RESISTANCE. Not less than 500 megohm miles at 60°F.; any conductor.

DIELECTRIC STRENGTH. Insulation between conductors capable of withstanding for two seconds an a.c. test potential whose maximum instantaneous value is 500 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1400 volts.

DSM 11	10	.061	.36	3300	.31
DSM 16	15	.062	.39	2900	.36
DSM 26	25	.064	.47	4500	.47
DSM 51	50	.067	.60	4200	.70
DSM 76	75	.069	.70	3000	.88
DSM 101	100	.071	.78	3000	1.06
DSM 152	150	.075	.93	2800	1.41
DSM 202	200	.078	1.05	2200	1.73
DSM 303	300	.082	1.24	1600	2.29
DSM 404	400	.087	1.42	1400	2.92
DSM 606	601	.093	1.70	1100	4.04
DSM 909	902	.101	2.05	900	5.56
DSM1212	1203	.109	2.34	650	7.13
DSM1515	1505	.115	2.61	650	8.64

Western Electric

Lead Covered Telephone Cable

Type FA—For Inside Construction

Textile Insulated

Type MFA—For Inside Construction

SHEATH. Pure lead.

CONDUCTORS. No. 22 A.W.G. tinned, double silk and single cotton insulation, covering on each pair colored white and red-white.

TRACER PAIR. One in outer layer colored blue and white.

INSULATION RESISTANCE. Not less than 500 megohm miles at 60°F.

CONDUCTOR RESISTANCE. Not exceeding 96 ohms per mile of cable at 68°F.

DIELECTRIC STRENGTH. Insulation between conductors capable of withstanding for two seconds an a.c. test potential whose maximum instantaneous value is 700 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1400 volts.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness Sheath Inches	Mean O.D. Inches	Convenient No. of Ft. on Reels	Approx. Wt. Lbs. per Foot
FA101	101	.063	1.00	2500	1.42
FA152	151	.063	1.19	1600	1.86
FA202	201	.094	1.41	1500	2.93
FA303	302	.125	1.75	1200	4.68
FA404	403	.125	1.97	1100	5.62
FA606	605	.125	2.38	700	7.45

Type GA—For Inside Construction

SHEATH. Pure lead.

CONDUCTORS. No. 22 A.W.G. tinned, double silk and single cotton insulation, colored in accordance with a standard color scheme so that each pair is distinguishable from other pairs in the cable.

CONDUCTOR RESISTANCE. Not exceeding 96 ohms per mile of cable at 68°F.

INSULATION RESISTANCE. Not less than 500 megohm miles at 60°F.

DIELECTRIC STRENGTH. Insulation between conductors capable of withstanding for two seconds an a.c. test potential whose maximum instantaneous value is 700 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1400 volts.

Code No. and No. of Pairs	No. of Pairs	Thickness Sheath Inches	Mean O.D. Inches	Convenient No. of Ft. on Reels	Approx. Wt. Lbs. per Foot
GA 6	6	.047	.34	3500	.25
GA 11	11	.047	.41	3500	.32
GA 16	16	.047	.47	3500	.39
GA 21	21	.047	.52	3500	.45
GA 26	26	.047	.56	3500	.51
GA 31	31	.047	.59	3500	.56
GA 41	41	.047	.67	3000	.67
GA 51	51	.063	.77	2500	.94
GA 76	76	.063	.89	2500	1.19
GA101	101	.063	1.00	2500	1.42
GA152	151	.063	1.19	1600	1.86
GA202	201	.094	1.41	1500	2.93

Type AUA—For Inside Construction

SHEATH. Pure lead.

CONDUCTORS. No. 22 A.W.G. tinned, double cotton insulation, coated with cellulose acetate lacquer, colored in accordance with a standard color scheme so that each pair is distinguishable from other pairs in the cable.

CONDUCTOR RESISTANCE. Not exceeding 96 ohms per mile of cable at 68°F.

INSULATION RESISTANCE. Not less than 10 megohm miles at 60°F.

DIELECTRIC STRENGTH. Insulation between conductors capable of withstanding for two seconds an a.c. test potential whose maximum instantaneous value is 700 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1400 volts.

Code No. and No. of Pairs	No. of Pairs	Thickness Sheath Inches	Mean O.D. Inches	Convenient No. of Ft. on Reels	Approx. Wt. Lbs. per Foot
AUA 6	6	.047	.34	3500	.25
AUA 11	11	.047	.41	3500	.32
AUA 16	16	.047	.47	3500	.39
AUA 21	21	.047	.52	3500	.45
AUA 26	26	.047	.56	3500	.51
AUA 31	31	.047	.59	3500	.56
AUA 41	41	.047	.67	3000	.66
AUA 57	51	.063	.77	2500	.94
AUA 76	76	.063	.89	2500	1.19
AUA101	101	.063	1.00	2500	1.42

SHEATH. Pure lead.

CONDUCTORS. No. 22 A.W.G. tinned, enamel, double silk and single cotton insulation, covering on each pair colored white and red-white.

TRACER PAIR. One in outer layer colored blue and white.

INSULATION RESISTANCE. Not less than 500 megohm miles at 60°F.

CONDUCTOR RESISTANCE. Not exceeding 96 ohms per mile of cable at 68°F.

DIELECTRIC STRENGTH. Insulation between conductors capable of withstanding for two seconds an a.c. test potential whose maximum instantaneous value is 700 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1400 volts.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness Sheath Inches	Mean O.D. Inches	Convenient No. of Ft. on Reels	Approx. Wt. Lbs. per Foot
MFA101	101	.063	1.00	2500	1.42
MFA152	151	.063	1.19	1600	1.86
MFA202	201	.094	1.41	1500	2.93
MFA303	302	.125	1.75	1200	4.68
MFA404	403	.125	1.97	1100	5.62
MFA606	605	.125	2.38	700	7.45

Type MGA—For Inside Construction

SHEATH. Pure lead.

CONDUCTORS. No. 22 A.W.G. tinned, enamel, double silk and single cotton insulation, colored in accordance with a standard color scheme so that each pair is distinguishable from other pairs in the cable.

CONDUCTOR RESISTANCE. Not exceeding 96 ohms per mile of cable at 68°F.

INSULATION RESISTANCE. Not less than 500 megohm miles at 60°F.

DIELECTRIC STRENGTH. Insulation between conductors capable of withstanding for two seconds an a.c. test potential whose maximum instantaneous value is 700 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1400 volts.

Code No. and No. of Pairs	No. of Pairs	Thickness Sheath Inches	Mean O.D. Inches	Convenient No. of Ft. on Reels	Approx. Wt. Lbs. per Foot
MGA 6	6	.047	.34	3500	.25
MGA 11	11	.047	.41	3500	.32
MGA 16	16	.047	.47	3500	.39
MGA 21	21	.047	.52	3500	.45
MGA 26	26	.047	.56	3500	.51
MGA 31	31	.047	.59	3500	.56
MGA 41	41	.047	.67	3000	.67
MGA 51	51	.063	.77	2500	.94
MGA 76	76	.063	.89	2500	1.19
MGA101	101	.063	1.00	2500	1.42
MGA152	151	.063	1.19	1600	1.86
MGA202	201	.094	1.41	1500	2.93

Type NUA—For Inside Construction

SHEATH. Pure lead.

CONDUCTORS. No. 22 A.W.G. tinned, enamel, double cotton lacquered insulation, colored in accordance with standard color scheme so that each pair is distinguishable from other pairs in the cable.

CONDUCTOR RESISTANCE. Not exceeding 96 ohms per mile of cable at 68°F.

INSULATION RESISTANCE. Not less than 20 megohm miles at 60°F.

DIELECTRIC STRENGTH. Insulation between conductors capable of withstanding for two seconds an a.c. test potential whose maximum instantaneous value is 700 volts. The insulation between conductors and sheath capable of withstanding a test with an a.c. potential whose maximum instantaneous value is 1400 volts.

Code No. and No. of Pairs	No. of Pairs	Thickness Sheath Inches	Mean O.D. Inches	Convenient No. of Ft. on Reels	Approx. Wt. Lbs. per Foot
NUA 6	6	.047	.34	3500	.25
NUA11	11	.047	.41	3500	.32
NUA16	16	.047	.47	3500	.39
NUA21	21	.047	.52	3500	.45
NUA26	26	.047	.56	3500	.51
NUA31	31	.047	.59	3500	.56
NUA41	41	.047	.67	3000	.66
NUA51	51	.063	.77	2500	.94

For more complete information on all types of telephone apparatus and cable see Western Electric Catalog No. 10. Consult your nearby Graybar office and warehouse.

Western Electric Type CL Switchboard Cable

This cable represents the highest development in the art of switchboard cable manufacture.

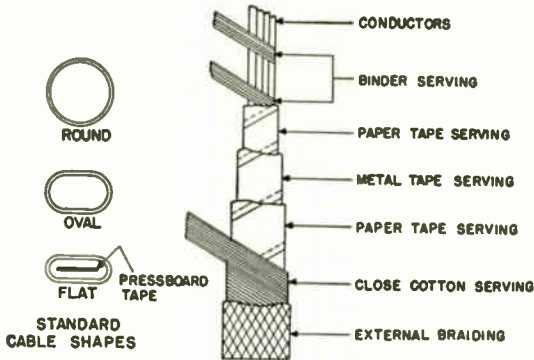
Designed in three general shapes—flat, oval, and round.

The Type CL cable listed in the following tables consists of tinned copper conductors with two servings of silk and one serving of cotton impregnated with cellulose acetate. Cellulose acetate impregnated conductors are referred to in the tabulation as lacquered conductors. Included in the Type CL cables are cables with tinned copper enameled conductors. These are identified by four digit code numbers—1016CL, 1024CL, etc.

All CL cables except the quadded 500CL and 1500CL have an outer covering consisting of the following: The core of each cable is bound with a binder serving of cotton, a serving of paper tape, a serving of metal tape, and a second serving of paper tape. Over this is applied a close serving of cotton and a close braiding of cotton. The completed cable is painted with a gray cable paint.

In quadded cable (500 CL and 1500 CL types) the cotton binder serving is omitted and a heavier first serving of paper tape is used.

In the tabulations the larger dimensions for oval or flat cable represent the width, and the smaller dimensions represent the thickness.



Showing Binder Serving Not Used on Quadded Cable

Tinned Conductors

Double Silk, Single Cotton Insulation, Lacquered

Code No.	*Conductors	Pairs		Singles		Dimen. In.	Shape	Replaces
		No. Gage	†Color	No. Gage	†Color			
16CL	63	20 22	1-20	20 22	1-20	.350x.760	Oval	
24CL	43	20 22	1-20			.330x.560	Oval	
50CL	33	10 22	1-10	10 22	1-10	1 3/32 Diam.	Rd.	6050
62CL	63	{ 15 22 1-15 15 22 21-35 }				9/16 Diam.	Rd.	6062
66CL	103	{ 40 22 1-40 5 22 121-125 5 22 141-145 }				.72 Diam.	Rd.	1066
69CL	208	{ 20 22 1-20 20 22 1-20 20 22 1-20 20 22 1-20 }				.98 Diam.	Rd.	1069
70CL	83	{ 20 22 1-20 20 22 141-160 }				1 5/32 x 1 1/16	Oval	
74CL	21	10 22	181-190			3/8 Diam.	Rd.	6074, 6079
97CL	132	64 22	1-64			.81 Diam.	Rd.	1097
100CL	83	{ 20 24 1-20 20 24 141-160 }				.73x.49	Oval	1100
103CL	42	20 24	1-20			.58x.37	Oval	1103
106CL	103	{ 20 22 1-20 20 22 141-160 }		20 22	1-20	1 1/16 Diam.	Rd.	6106
125CL	23	10 19	1-10			.52 Diam.	Rd.	1125
182CL	13	6 22	181-186			5/16 Diam.	Rd.	6182
183CL	53	{ 10 22 1-10 10 22 141-150 }		10 22	1-10	1 1/32 Diam.	Rd.	6183
232CL	83	{ 20 22 1-20 20 22 141-160 }				.350x1.570	Flat	
236CL	63	20 24	1-20	20 24	1-20	.82x.44	Flat	1236
239CL	103	{ 20 22 1-20 20 22 161-180 }		20 22	1-20	.370x1.57	Flat	
241CL	43	20 22	1-20			.33x.76	Flat	
242CL	63	20 22	1-20	20 22	1-20	.33x1.57	Flat	
243CL	312	{ 20 22 1-20 20 22 1-20 20 22 1-20 20 22 1-20 20 22 1-20 }		{ 20 22 1-20 20 22 1-20 20 22 1-20 20 22 1-20 }		1.18 Diam.	Rd.	

*Includes spares.

†Numbers refer to color combinations. Write for further information.

For more complete information on all types of telephone apparatus and cable see Western Electric Catalog 10. Consult your nearby Graybar office and warehouse.

Tinned Enameled Conductors

Double Silk, Single Cotton Insulation, Lacquered

Code No.	*Conductors	Pairs		Singles		Dimen. Inches	Shape	Replaces
		No. Gage	†Color	No. Gage	†Color			
1016CL	63	20 22	1-20	20 22	1-20	.82x.44	Oval	1016
1024CL	43	20 22	1-20			.59x.45	Oval	1024
1050CL	33	10 22	1-10	10 22	1-10	.46 Diam.	Rd.	1050
1066CL	103	{ 40 22 1-40 5 22 121-125 5 22 141-145 }				.77 Diam.	Rd.	1066
1069CL	208	{ 20 22 1-20 20 22 1-20 20 22 1-20 20 22 1-20 }				1.06 Diam.	Rd.	1069
1070CL	83	{ 20 22 1-20 20 22 141-160 }				.82x.55	Oval	1070
1074CL	21	10 22	181-190			.42 Diam.	Rd.	1074
1182CL	13	6 22	181-186			.32 Diam.	Rd.	1182
1475CL	12	16 22	181-186			.37 Diam.	Rd.	1475
1476CL	24	12 22	181-192			.50 Diam.	Rd.	1476

‡Made up of shielded twisted pairs. The wires are twisted in pairs and a ground wire is laid longitudinally with the twisted pair. On each pair is a braided shield of copper wire. Intended for use in multi channel carrier circuits.

Toll Quadded Cable—Tinned Conductors Double Silk, Single Cotton Insulation, Lacquered

Code No.	*Conductors	No. of Quads	Gage	†Quad Color	Diameter Inches	Shape
500CL	8	2	22	1 & 2	9/32	Round
501CL	16	4	22	1-4	1 1/32	Round
502CL	32	8	22	1-8	1/2	Round
503CL	40	10	22	1-10	9/16	Round
504CL	52	12	22	1-12	1 1/32	Round
505CL	68	16	22	1-16	1 1/16	Round
506CL	84	20	22	1-20	2 3/32	Round

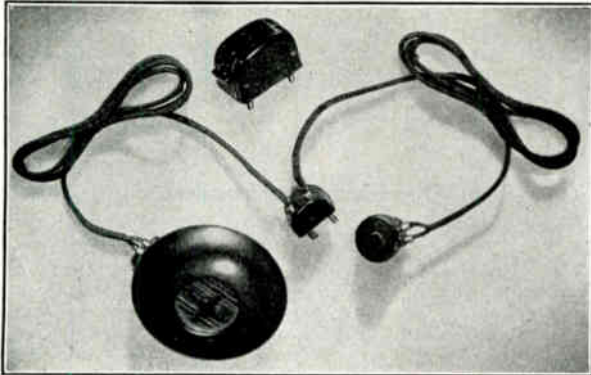
Toll Quadded Cable—Tinned Enameled Conductors Double Silk, Single Cotton Insulation, Lacquered

Code No.	*Conductors	No. of Quads	Gage	†Quad Color	Diameter Inches	Shape
1500CL	8	2	22	1 & 2	9/32	Round
1501CL	16	4	22	1-4	1 1/32	Round
1502CL	32	8	22	1-8	1/2	Round
1503CL	40	10	22	1-10	9/16	Round
1504CL	52	12	22	1-12	1 1/32	Round
1505CL	68	16	22	1-16	1 1/16	Round
1506CL	84	20	22	1-20	2 3/32	Round

Western Electric Hearing Aids Audiphone

Ortho-tronic

Ortho-technic



Ortho-technic

Hard of hearing men, women or children will find that the Western Electric Audiphone brings new hearing happiness. Both vacuum tube sets and carbon sets, with air and bone conduction receivers, are available in a number of combinations to meet a variety of hearing needs.



Ortho-tronic

No. 4C Audiometers

The Western Electric Audiphone has the following important features:

Natural tone quality.

Low battery consumption.

Non-positional operation.

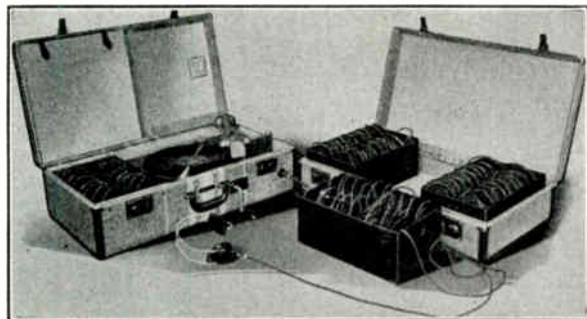
High degree of sensitivity.

Compact, attractive styling.

Durability and reliability.

Stability of operation.

Made by the makers of Bell Telephones.



Audiometer Complete with Four Receiver Trays and Carrying Cases

Plays records of voices speaking numbers with diminishing volume. Children or adults being tested write as many numbers as they can hear. Results are checked with master card and permanent record of hearing acuity of each ear is provided in less than 20 minutes. As many as forty persons may be tested simultaneously.

Western Electric Hearing Aids Type 6 Audiometers



Determines a patient's hearing loss at various frequencies, with either bone or air conduction receiver. By comparing results of tests, supplemented by findings of an otoscopic examination, an otologist may fix the location of lesions and thus diagnose the case. A transmitter, located within the audiometer, provides the media for conducting voice, whisper and watch tests as well as providing a means of communication with a hard of hearing patient.

A masking attachment, available for use with this audiometer, is a further diagnostic aid in determining the exact bone conduction acuity of each ear.

Western Electric Speech Input Equipment No. 754A Volume Indicating Equipment with No. KS-8218 Volume Indicator Meter



Nos. 754A and 754B Volume Indicators and associated units provide means not only for measuring volume levels in vu but also for transmission measurements

in db. They are of panel type construction suitable for mounting on a 19-inch relay rack or bay cabinet and differ only in that No. 754B has provision for an increased sensitivity of 10 db. when terminating a line. The No. 754A Volume Indicator is direct reading when bridged on a 600 ohm circuit. It includes a switch for adjusting the sensitivity over a range from +4 to +26 vu at the 0 vu or 100 mark on the scale (about two-thirds full scale).

Type 22 Portable Equipment



Incorporates stabilized feedback. Provides portable pick-up facilities. Designed for fast set-up, simple in operation and easily handled by one man. May be used in studios and auditorium locations for supplementary or emergency purposes and for regular service where flexible program control facilities in limited space are needed. Each equipment consists of an Amplifier-Control unit, power supply for either a.c. or battery operation, two luggage-type carrying cases, and the necessary interconnecting and power cords. Equal to many so-called studio equipments. Key-switching feature allows rapid interchange between the line of the telephone set for communication and the amplifier output for program transmission. Can reverse instantaneously line used for "cue" and other communication with line used for program transmission—a feature especially desirable in case of emergency. Four microphone inputs, monitoring facilities with headsets or loudspeaker and amplifier are also provided for. Battery operation can be provided for if preferred to a.c. operation.

Dimensions of carrying cases: 14x17x8 inches. Each case weighs approximately 30 pounds equipped.

Western Electric
Speech Input Equipment

Type 23 Console Equipment

Custom Built Desk Type Equipment

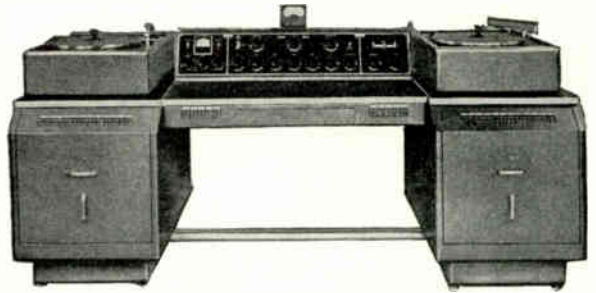


Total gain, approximately 100 db. Input circuits will match nominal microphone impedances of either 30 or 250 ohms. Using maximum gain, the unweighted noise introduced is 60 db below the program level.

Exceptionally high fidelity performance and low tube cost are achieved through use of stabilized feedback.

Frequency response is essentially uniform from 30 to 10,000 cycles.

Microphone switching keys arranged to accommodate eight microphones, with keys and controls for one or two studio broadcasting systems, are all located in a small, attractive "organ console" type cabinet 34 inches long, 14 inches deep, and 10 inches high.



The Western Electric custom built desk type studio speech input equipment is designed, constructed and tested as a complete audio frequency system for radio broadcasting. Conforming to Federal Communications Commission's Standards of Good Engineering Practice for both standard and high frequency (FM) broadcasting stations. It can be furnished in standard functional arrangements or both the amplifier complement and number and type of controls may be varied to suit an individual station's specific requirements.

Amplifier and other circuit components designed for uniform transmission over a 30 to 15,000 cycle audio range.

Operation of equipment from 110 volts; 50-60 cycle a.c. power supply.

Studio Equipment No. 704A Bay

Designed to meet the highest standards of performance. Provides a maximum of flexibility through ingeniously devised circuits. Complete a.c. operated assembly for single studio or two-channel systems. Contains jacks, relays, program and monitor amplifiers as well as mounting space for additional apparatus required for special layouts.

Dimensions: height, 83 $\frac{3}{4}$ inches; width, 21 $\frac{1}{2}$ inches; depth, 13 $\frac{1}{8}$ inches. Inputs; two program, three studio microphone, one booth microphone, two transcriptions, one spare line. Outputs: one 600 ohm circuit. Power required: 105-125 volts, 50 to 60 cycles. Consumption: approximately 160 watts.

No. 721A Control Cabinet

Contains all facilities necessary for a four-channel mixing circuit, master gain control and studio switching control. Tapered T type attenuators are used for all operating controls, and provide constant impedance characteristics with minimum losses. A sloping hinged panel on which all of the apparatus is mounted provides easy accessibility for servicing.

Dimensions: height, 8 inches; length, 20 inches; depth, 7 $\frac{3}{8}$ inches at base.

The 704A bay and this cabinet provide an ideal assembly when they are associated.

No. 705A Bay

The Western Electric No. 705A Speech Input Bay accommodates two input program lines of 150 or 600 ohms and one announce microphone. Two output lines, 500 to 600 ohms. Key selection of both output and input lines.

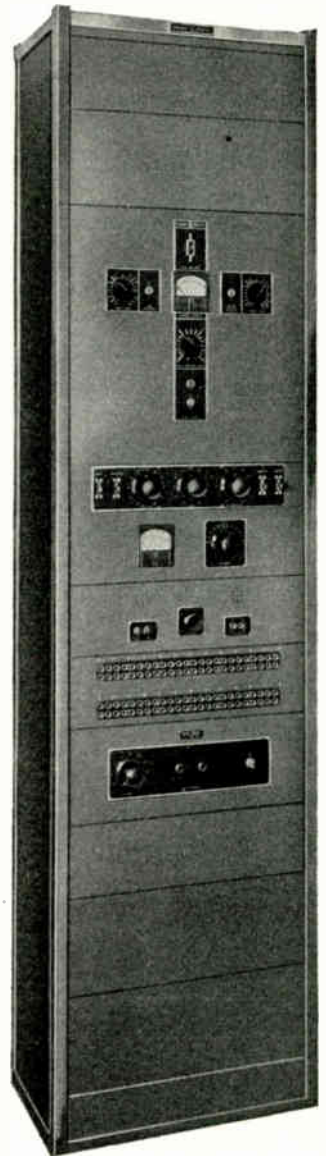
Normal power consumption approximately 187 watts at 105-125 volt, 50-60 cycle supply.

Cabinet dimensions of 83 $\frac{3}{4}$ inches high, 21 $\frac{1}{2}$ inches wide and 13 $\frac{1}{8}$ inches deep.

This equipment has an overall gain of 55 db, line gain control range of 51 db, frequency response uniform from 30 to 10,000 cycles, normal output level 0 db, maximum output level of 20 db, noise level—65 db weighted and less than 1 per cent distortion under normal operation conditions.



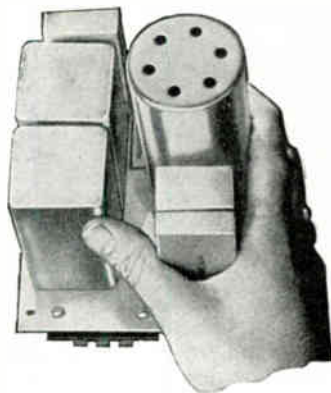
No. 704A Bay



No. 705A Bay

Western Electric Speech Input Equipment

No. 104B Pre-Mixing Amplifier and No. 15A Rectifier



Designed for use in modern studio amplifier channels as a pre-mixing or low level amplifier to improve the signal to noise ratio by raising the audio levels at which the mixing function takes place. For addition to existing studio channel bay equipments or for new installation. Features are: tandem operation, high overall quality, space economy $5\frac{1}{4} \times 4\frac{1}{8} \times 6\frac{3}{4}$ inches), and low cost. Frequency response uniform over range 35 to 10,000 cycles. Single stage, fixed gain amplifier, with a gain of approximately 28 db. Operates from an impedance of 30 or 250 ohms into an impedance of 30 or 500 ohms and may be used with either a dynamic or a ribbon type microphone. Requires 0.32 ampere at 10 ± 0.3 volts a.c. for the tube filament. Also properly filtered plate supply of approximately 0.6 milliamperes at 200, 250 or 375 volts d.c.

proximately 28 db. Operates from an impedance of 30 or 250 ohms into an impedance of 30 or 500 ohms and may be used with either a dynamic or a ribbon type microphone. Requires 0.32 ampere at 10 ± 0.3 volts a.c. for the tube filament. Also properly filtered plate supply of approximately 0.6 milliamperes at 200, 250 or 375 volts d.c.

No. 105A Program Amplifier



Designed for use as the main program amplifier in speech input equipments. Will amplify the output of a Western Electric dynamic microphone, or of a high level microphone mixing system using pre-amplifiers, such as the Western Electric No. 104 type to a level sufficient for feeding into a wire line or output switching system. Operates from an impedance of 30 or 600 ohms and into an impedance of 600 ohms. Operates equally well with 500 ohm impedances. Frequency response uniform 35 to 10,000 cycle range. Overall gain of the amplifier, including a 6 db isolation pad in the output circuit, is approximately 70 db. Output power 0.6 watts. Contains its own complete power supply as well as a 38 db gain control, a volume indicator meter and a separate plate current meter capable of serving a whole bay of equipment. Amplifier is only $10\frac{1}{2}$ inches high on a 19-inch rack.

to a wire line or output switching system. Operates from an impedance of 30 or 600 ohms and into an impedance of 600 ohms. Operates equally well with 500 ohm impedances. Frequency response uniform 35 to 10,000 cycle range. Overall gain of the amplifier, including a 6 db isolation pad in the output circuit, is approximately 70 db. Output power 0.6 watts. Contains its own complete power supply as well as a 38 db gain control, a volume indicator meter and a separate plate current meter capable of serving a whole bay of equipment. Amplifier is only $10\frac{1}{2}$ inches high on a 19-inch rack.

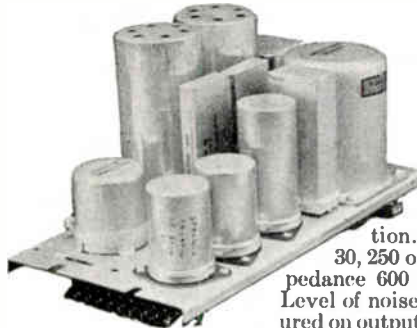
No. 106A Line Amplifier



Two-stage a.c. type with a gain of approximately 45 db. Designed for use as a line amplifier in speech input equipment, particularly where compactness and high quality amplification are desired. Used at studio locations to compensate for output switching circuit losses and to provide isolation between outgoing program lines. Also used as a general purpose amplifier for applications where moderate gains and power levels are required. Designed primarily to operate between impedances of 600 ohms. Amplifier also has a high impedance input of 10,000 ohms for bridging across 600 ohm circuits. Uniform response 30 to 15,000 cycles. Power supply: 105-125 volts, 50 or 60 cycles a.c. Power consumption: approximately 45 watts. Output power 0.6 watts.

Component parts of the No. 106A Amplifier are assembled on a recessed panel 19 inches wide and 7 inches high designed for mounting on standard relay rack or in an equipment cabinet.

No. 120A Input Amplifier



Compact, high quality, two-stage fixed gain, FM quality, pre-mixing or booster amplifier. Frequency response 30 to 15,000 cycles with only ± 1 db. variation. Source impedance 30, 250 or 600 ohms; load impedance 600 ohms. Gain 40 db. Level of noise contribution measured on output—82 db unweighted (0 level calibration 1 milliwatt). Maximum output level plus 16 db with 1% total harmonic distortion.

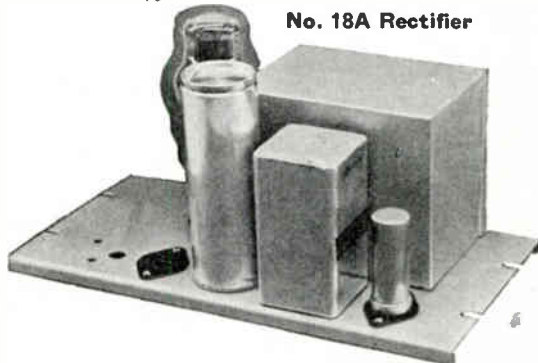
(0 level calibration 1 milliwatt). Maximum output level plus 16 db with 1% total harmonic distortion.

No. 121A Line Amplifier



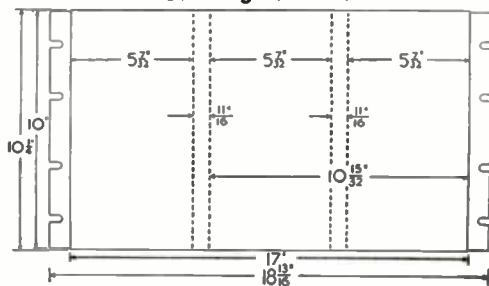
Three-stage unit for high quality performance as a speech input intermediate level amplifier. Frequency response 30 to 15,000 cycles with only ± 1 db variation. Source impedance 30, 250 or 600 ohms; load impedance 600 ohms. Gain 78 db. Level of noise contribution measured at output minus 42 db unweighted (0 level calibration 1 mw). Output level plus 28 db with 1% total harmonic distortion.

No. 18A Rectifier

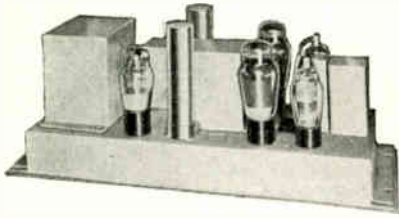


A full wave vacuum tube rectifier with filter for use with amplifiers in speech input equipment. Will supply up to 8 amperes at 6.3 volts, 60 cycles, 4 filaments and from .007 to .075 ampere dc at 285 ± 35 volts for plates. Power required; 110 to 120 volts, 60 cycles, 100 watts.

Mounting Facilities



One No. 177A mounting plate mounts: Up to three No. 120A Amplifiers or one No. 120A and one No. 121A amplifiers, or up to three No. 18A rectifiers. One No. 296A panel (face mat) covers wiring side and mounts accessory controls and meters in front of mounting plate.

*Western Electric***Speech Input Equipment****Nos. 124A and 124E Loudspeaker Amplifiers**

These amplifiers provide great flexibility of application and increased power output at low cost. Designed for use as high impedance bridging type booster or monitoring amplifiers with self-contained a.c. power supply. Also inexpensive general purpose amplifiers for applications where a gain of approximately 45 db (on a 600 ohm input circuit) is ample. Includes stabilized feed back. Nos. 124A and 124E are similar except that No. 124E has a high quality volume control and power switch mounted on a bracket on the underside of the chassis with the control elements extending through the mat for operation from the face of the amplifier. Power supply: 105-125 volts, 45-65 cycles. Power consumption: approximately 100 watts. Power output 20 watts. Frequency response uniform 30 to 15,000 cycles.

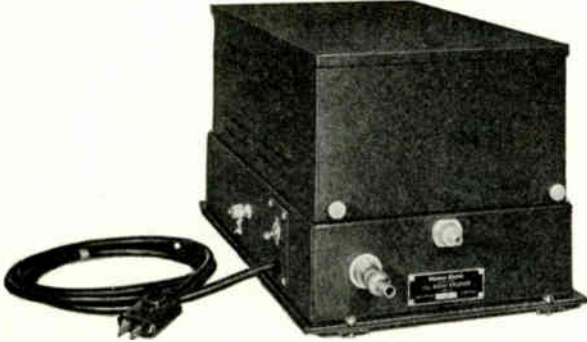
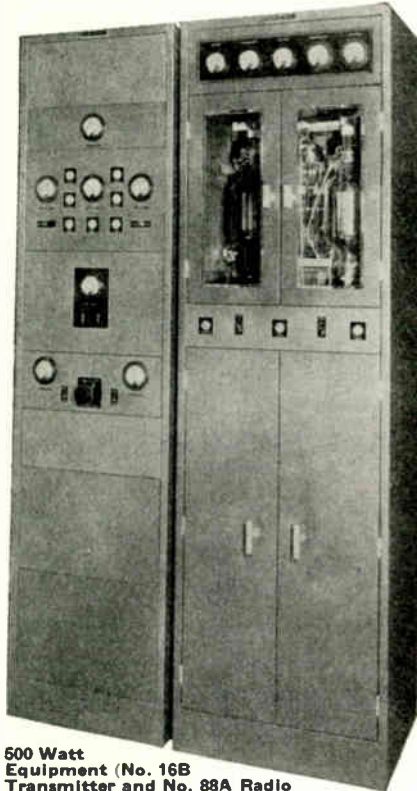
Overall length, 19 $\frac{1}{16}$ inches; depth, 7 $\frac{1}{2}$ inches; height, 7 inches.

Western Electric **Police and Mobile Radio Equipment****No. 28D Ultra-High Frequency Radio Receivers**

For use at fixed stations. Operates on frequencies between 30-40 mc. A.c. operated, compact, superheterodyne set. Designed specifically for fixed locations for reception of messages from mobile transmitters. May be used at central station or monitoring location, or unattended at remote location with its output connected into wire line to headquarters. Serves with equal dependability and efficiency in police, fire power line maintenance, highway maintenance and other radio telephone communication systems. With loud speaker, receiver is used for monitoring or for reception at precinct stations, sub-stations, officials quarters and similar locations. Has self-contained rectifiers operating from 105-120 volt, 50-60 cycle a.c. source, and draws approximately 55 watts.

Overall dimensions of receiver, including terminals and plugs: height, 9 $\frac{1}{16}$ inches; width, 10 $\frac{5}{8}$ inches; depth, 17 $\frac{3}{8}$ inches.

Weights approximately 31 $\frac{1}{2}$ pounds, including base plate.

**Headquarters Radio Telephone Equipment**

A complete line of ultra-high frequency radio transmitters and associated equipment for use at headquarters or control stations for either one-way or two-way radio telephone communication with cruising, maintenance or trouble cars.

The transmitters designed for this type of service are rated at from 50 to 500 watts for large cities, and 5 and 25 watts for towns.

No. 16B 50-Watt Radio Transmitter.

Crystal controlled; delivers to its antenna 50 watts of carrier power in the ultra-high frequency band between 30 and 60 mc.

Operates from 100-120 or 200-240 volt, single phase,

500 Watt Equipment (No. 16B Transmitter and No. 88A Radio Frequency Amplifier)

50-60 cycle a.c. commercial supply. Cabinet measures approximately 83 inches in height, 21 inches in width, and 18 inches in depth. Weighs approximately 650 pounds.

500-Watt Equipment. Designed for use in large cities. Capable of complete modulation and delivers to its antenna 500 watts of carrier power on any frequency within ultra-high frequency band 30 to 42 mc. Consists of two units: the No. 16B Transmitter, and the No. 88A Radio Frequency Amplifier with self-contained plate supply rectifier, operating from 200-250 volt, 3 phase, 60 cycle a.c. supply.

No. 228A Two-Way Ultra-High Frequency Mobile Radio Telephone Systems

15 Watts

With this equipment, areas overshadowed by tall buildings, hills or other obstacles are easily penetrated and made usable for constant, dependable communication service. The basic units are: radio transmitter, radio receiver, antenna system, control unit, telephone handset and loud-speaker; comprising complete two-way communication system. Transmitting equipment may be used with a medium frequency receiver or with No. 6018A, B or E Receiving Equipment. The receiving equipment may be used separately in one-way systems. System operates in frequency band from 30 to 40 mc.

No. 28A Radio Transmitter. Compact transmitting unit of No. 228A Radio Transmitting Equipment includes dynamotor for plate supply. Operates directly from any 6-volt car battery system. Delivers 15 watts of carrier power to antenna and carrier frequency stability of better than .02% assured by the use of quartz crystal.



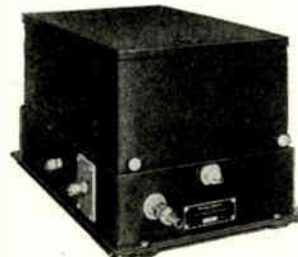
Overall dimensions, including terminals and plugs: height, 9 inches; width, 11 $\frac{3}{8}$ inches; depth, 17 $\frac{3}{8}$ inches.

Weights approximately 37 pounds, including base.

No. 28C Radio Receiver.

The superheterodyne receiver of No. 228A Radio Transmitting Equipment for mobile use. Audio output of 3 watts assures good reception over high acoustical noises prevalent in streets.

Overall dimensions, including terminals and plugs: height, 9 $\frac{1}{16}$ inches; width, 10 $\frac{5}{8}$ inches; depth, 17 $\frac{3}{8}$ inches.



Weights approximately 31 $\frac{1}{2}$ pounds.

Control unit is small, compact and measures only 3 $\frac{3}{4}$ inches in length, 2 $\frac{1}{2}$ inches in height, and 2 inches in depth. Operates on 6-volt battery with high voltage furnished through new, efficient vibrator.

Western Electric
Police Radio Equipment

No. 222A Radio Telephone Equipment for Police Headquarters

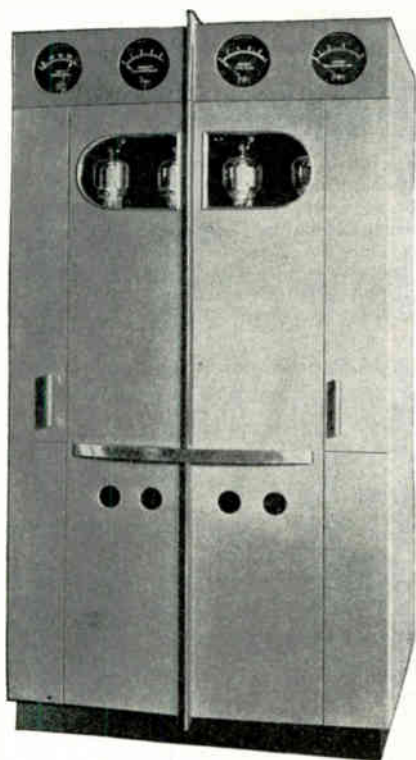


Designed for use in medium sized cities. Consists principally of No. 22A Radio Transmitter and No. 28D Radio Receiver, No. 633 "Salt Shaker" Microphone and No. KS-10017 Coaxial Antenna. These units, with accessories included, provide complete transmitting and receiving facilities for headquarters operation in the ultra-high frequency band.

No. 22A Radio Transmitter. Embodies many notable features and operates in ultra-high frequency spectrum from 30 to 42 mc. Incorporates volume limiter and sufficient audio amplification for dynamic microphone. Crystal controlled, delivering 25 watts of power into a coaxial transmission line. All a.c. operated. Power supply requires 370 watts when transmitting and 140 watts when in standby position.

No. 28D Radio Receiver. See listing on preceding page.

Western Electric
Broadcasting Equipment
Radio Transmitting Equipment
No.443A-1



No. 443A-1

For radio broadcasting and police; 1000 watts, all a.c. operation, 550 to 2500 kc. Doherty high efficiency amplifier circuit with attendant increased stability is here introduced for first time in a medium-powered broadcasting transmitter. Grid bias modulation inexpensive complement of radiation cooled tubes, small circuit elements. Efficiency of the power amplifier stage increased to 60% or more. Stabilized feedback keeps harmonic distortion and noise low; magnetic circuit breakers used instead of fuses. Central structure assembly—all parts easily accessible. Meets F.C.C. requirements.

Attractive, modern design and finish; needs only 44x39 inches of floor space.

No. 451A-1

For 250 watts (can be furnished with few additional small parts for toggle-switch change between 250 and 100 watts).

This equipment was designed for application where power in excess of 250 watts is not contemplated. It effectively covers the broadcast, police and emergency services and can be furnished to operate in the range of 550 to 2750 kilocycles.

Economy of operation and of maintenance are factors which make this transmitter especially desirable. Among those features are low power consumption and low tube cost, surprisingly little time and effort for maintenance and complete freedom from breakdowns.

Operates from 230 volt, single phase 60 cycle power source and requires an input of 750 watts for a power output of 250 watts and 1250 watts for an output of 100 watts. The power factor is approximately 90 per cent. Manually operated voltage regulator permits adjustments for any primary voltage over the range of 200 to 240 volts. Can be furnished for 50 cycle operation.

All tuning and operating controls and some meters are mounted in front on two vertical panels. The controls are divided into three groups according to function, and a distinctive knob or slot is used for each group in order to eliminate confusion.

The transmitter is delivered in two parts: a cabinet and inside frame upon which is mounted the apparatus. Doors both front and rear provide complete access to the apparatus.

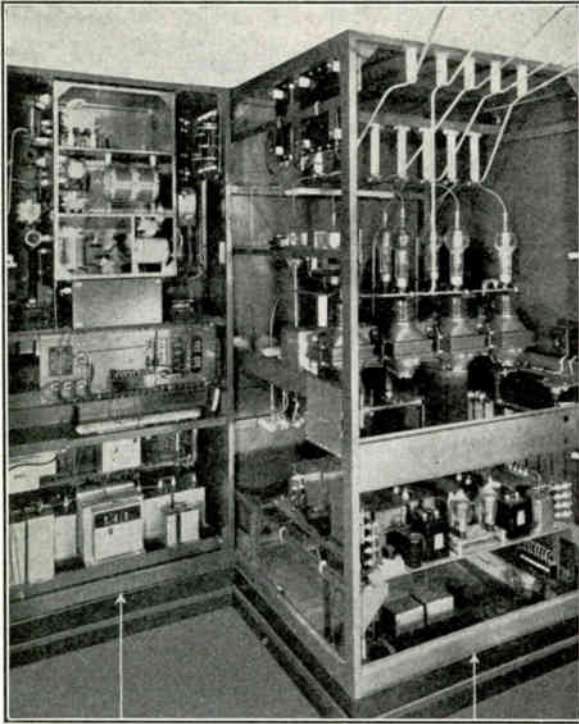
Dimensions: 30 inches wide, 28 inches deep and 76 inches high. The approximate weight is 1000 pounds.



No. 451A-1

Western Electric
Broadcasting Equipment

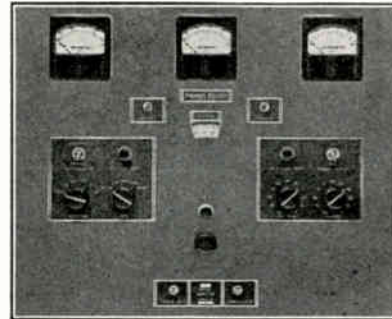
No. 405B-1 Radio Transmitting Equipment



Partial Rear View Showing No. D-99110 Oscillator-Amplifier and No. D-99114 Rectifier Units

Performance unequalled in the 5 KW field. Radiation cooled, all water cooling apparatus eliminated; entirely a.c. operated, for radio broadcasting, 550 to 1600 kc. Similar equipment available for police service. Includes Doherty high efficiency amplifier increasing power amplifier stage efficiency to over 60%, reducing plate dissipation, minimizing tube cooling requirements. Stabilized feedback, increased stability, automatic voltage regulator, visual indications of circuit conditions, cathode ray oscillograph connections in all important circuits, easily and accurately tuned by key operated tuning controls. More than fulfills F.C.C. requirements. Compactness permits installation in small space, 10' 9" x 11' 7".

No. 2A Phase Monitors



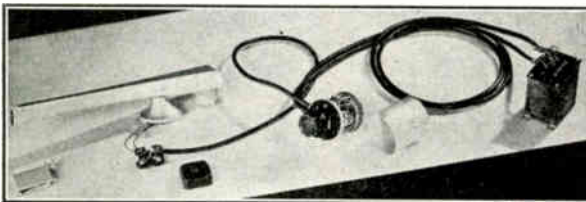
For measuring the phase and amplitude relations of the currents in the antenna elements so that these relations can be correlated with the field pattern. Provides for terminating as many as three sampling lines, originating on small untuned loops on each tower of an array. Single control used

to select desired pair when measuring phase angles. Additional switching facilities optional. In a few minutes, adjustment can be made for accurate operation on any frequency from 550 to 1600 kc. without auxiliary apparatus except for a radio frequency power source of at least 1/5 watt. Apparatus mounted upon steel panel covered by a mat. Quickly installed and permanently adjusted. Includes vacuum tubes.

Space requirements, 15 3/4 x 19 x 7 1/2 inches.

Weight, 43 pounds.

Reproducing Group



Consists of a lateral-vertical reproducer, reproducer arm, equalizing equipment and accessories.

Designed to meet severe requirement of radio broadcasting and high quality results demanded of sound distribution systems. The group is all conceived and constructed to provide sound reproduction without equal.

Simple instructions easily followed permit installation readily.

No. 1300A Reproducer Sets



Set with Cover Raised Showing No. 300A Reproducer Panel

For radio broadcasting and sound reproduction systems. Plays vertically or laterally cut records up to 16 inches in diameter at a speed of 33 1/2 rpm. or 78 rpm. Includes cabinet, cover, reproducer panel with turn-table, and filter selector switch control and on-off switch, reproducer

and reproducer arm. Cabinet cover optional. With this set, there is no slighting of the smallest recorded detail—reproduction is clear and full.

Western Electric **Microphones**

No. 639 Type Cardioid Directional Microphones



Affords unparalleled clarity, fidelity and pick-up control. Equally good for broadcasting and public address, it will enable jobs to be handled which were before thought impossible.

A ribbon and a dynamic mike are combined.

No. 639A has a three-way switch which provides a choice of either of these two or of cardioid directional.

No. 639B has a 6-way switch and offers three additional directivity patterns which make it particularly suited for use in difficult applications.

No. 633A "Salt Shaker" Type Microphones



This microphone can handle a wide variety of pick-ups and possesses performance characteristics in complete keeping with more expensive microphones.

Convenient mountings, adaptability, small size, light weight, high quality performance, for directional and non-directional use, with and without baffle.

Suited for use with sound systems in schools, restaurants, hotels, hospitals, by radio telephone amateurs, police radio systems, other radio services, and in commercial broadcasting—particularly for all remote pick-ups.

Western Electric Sound System Equipment

No. 31A Horns

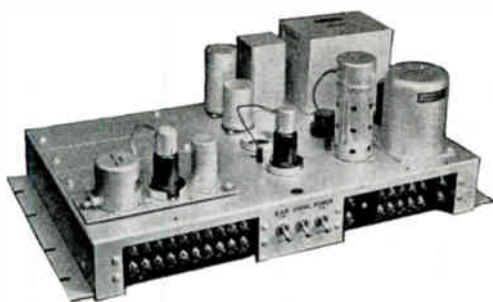


Designed for speech and music reproduction in sound systems where wide angle horizontal coverage is desired. May be adapted for use with a No. 713A Western Electric Receiver as part of a high quality speaker system, or a No. 707F Western Electric Receiver. Uniform sound field over a horizontal angle of 120° and

vertical angle of 40°. Range from 400 to 10,000 cycles with No. 713A Receiver and 300 to 6500 cycles with No. 707F Receiver. Can be mounted on ceiling, side wall, deck or platform, or to a pipe by means of two U bolts.

Approximately 23 inches wide, 9 inches high and 15 inches deep.

No. 117A Line Amplifiers



Multi-purpose line or voltage amplifier especially suited for use in sound system installations. Includes one No. 116B Mixer Stage Amplifier and sufficient space for accommodating three additional No. 116B Amplifiers. Includes volume limiting, volume expansion, selective speech or scratch equalization and operates from an input source with an impedance of any value between 15 and 250 ohms and into a 300 to 1200-ohm load. Can be used directly with a single power amplifier or to feed a bridging "bus" or wire line across which may be connected as many as 75 No. 118A Western Electric Amplifiers. Independent of other equipment for its power supply; 105-115 volts, 50-60 cycle a.c. power supply, consuming approximately 50 watts.

No. 118A Amplifiers



A medium gain, high power (50 watts) bridging amplifier suitable for high quality sound systems. Self-contained, operates directly from the usual 110-125 volt, 50-60 cycle a.c. supply consuming approximately 250 watts. Designed to work with any speech "bus" or equipment having approximately zero level output, such as the No. 117A Western Electric Amplifier.

No. 6030 Type Horns



Designed for speech and music reproduction in announcing, public address and music reproduction systems. Particularly adaptable to outdoor use, and has directional qualities that make it possible to direct and confine the sound beam to the areas occupied by the audience.

No. 6030A, equipped with one No. 707F receiver, is capable of handling 25 watts.

No. 6030B, equipped with two No. 707F receivers, 50 watts; they efficiently reproduce frequencies from 110 to 6500 cycles.

No. 750A and 751B Loud Speaking Telephones



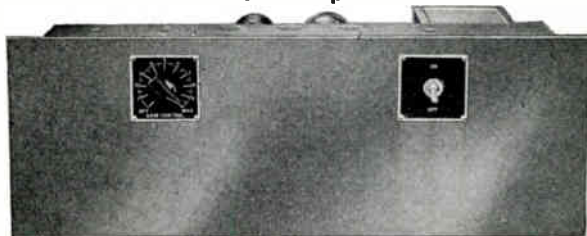
Designed for music reproduction systems, radio program monitoring and sound systems in schools, hotels and restaurants, etc., where high quality reproduction is the first consideration and where the areas to be covered are not too large. A single direct radiator type of loud speaker with 20-watt power handling capacity and capable of reproducing over a

frequency range 60 to 10,000 cycles that, heretofore, required a multiple device. Permanent magnet, dynamic, voice coil impedance approximately 8 ohms.

No. 750A without housing.

No. 751B with housing.

No. 124D Amplifiers



A general purpose, high gain, power amplifier for use in high quality sound systems such as are required in churches, schools and similar institutions. It supersedes the Western Electric Nos. 86 and 92 type Amplifiers and is particularly adaptable to portable use.

It includes one No. 116B amplifier and has sufficient mounting space for a second No. 116B, thus providing for two electronic mixing channels. It also has facilities for supplying power to one or two additional No. 116B's, which may be mounted apart from the No. 124D, or a total of four mixing channels as well.

Source impedances is 15-250 ohms (30 and 120 ohm nominal). Load impedances 1-1200 ohms. It has a gain of 107 db measured between nominal impedances. Frequency response 35-15,000 cycles; maximum departure from 1000 cycle gain less than 2 db—from 50 to 10,000 cycles maximum variation less than 1 db. Power output 12 or 20 watts with less than 2% total harmonic distortion. (The No. 124D amplifier as shipped will deliver an output power of 12 watts. Output of 20 watts obtained by simply changing transformer connections). Operates from 105-125 volt a.c., 50-60 cycles, 125 watts.

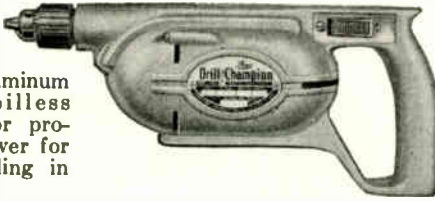
Aluminum finished chassis capable of horizontal or vertical mounting on a standard relay rack or in an adequately ventilated perforated metal cabinet.

Length, 18 $\frac{3}{16}$ inches; width, 6 $\frac{7}{8}$ inches; overall depth, 8 inches. The weight is approximately 20 pounds.

Thor Drill Champion 1/4-Inch Light Duty Electric Drills

Universal Motor for A.C. and D.C., 110 or 220 Volts

Designed for general light duty drilling. Has aluminum housing and oilless bearings. Motor provides ample power for light duty drilling in wood or metal.



Length overall, 12 inches. Free speed, 2000 rpm.

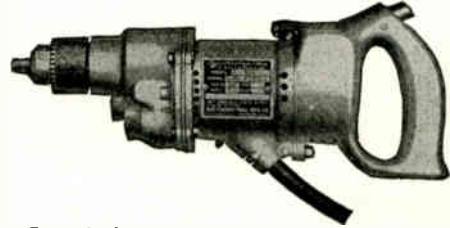
Equipped with Jacobs chuck; 3-conductor cable and plug; recessed, thumb-control switch.

Net weight, 4 pounds.

Shipping weight, 7 pounds.

Each..... \$19.95

Thor 5/16-Inch Heavy Production Electric Drills



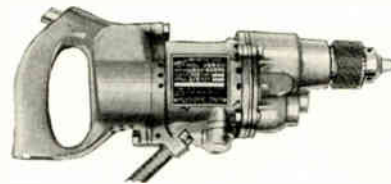
For production drilling in wood or metal.

With Jacobs chuck. Fully balanced and with ball-bearing construction.

In ordering, specify voltage desired.

No.....	UAD
Each.....	\$50.00
Free Speed.....	r.p.m. 1750
Length Over All.....	inches 13 1/4
Weight.....	pounds 8

Thor 3/8-Inch Heavy Production Electric Drills



A powerful, sturdy tool. Used mainly in industrial plants and shops where it is necessary to drill all sizes of holes up to and including 3/8 inch.

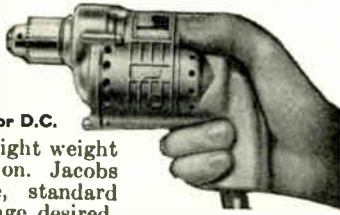
Equipped with Jacobs chuck.

In ordering, specify voltage desired.

No.....	UBD
Each.....	\$55.00
Free Speed.....	r.p.m. 750
Length Over All.....	inches 14
Weight.....	pounds 9

Thor 3/16 and 1/4-Inch Universal Portable Electric Drills

110 or 220 Volts, A.C. or D.C.

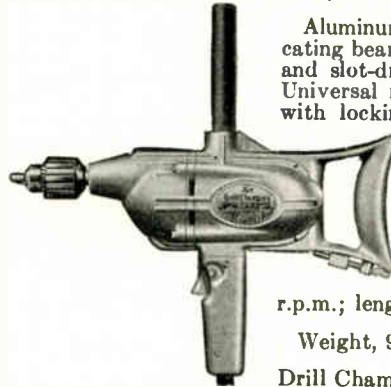


Streamline design and light weight provide one hand operation. Jacobs chuck and ground wire, standard equipment. Specify voltage desired.

No.	Each	Capacity Inches	Speed RPM	Len. Over-all In.	Weight Pounds
U13A	\$38.00	3/16	3750	6 3/4	2 1/2
U13F	40.00	3/16	4300	8 9/16	3 3/4
U15A	38.00	3/16	5100	6 3/4	2 1/2
U15F	40.00	3/16	5500	8 9/16	3 3/4
U14A	32.50	1/4	2500	6 3/4	2 1/2
U14F	35.00	1/4	2900	8 3/4	3 7/8
U14D	32.50	1/4	1900	6 3/4	2 1/2
U17A	38.00	1/4	700	7 1/2	3

Thor 1/2-Inch Light-Duty Drills

110 and 220 Volts, A.C. or D.C.



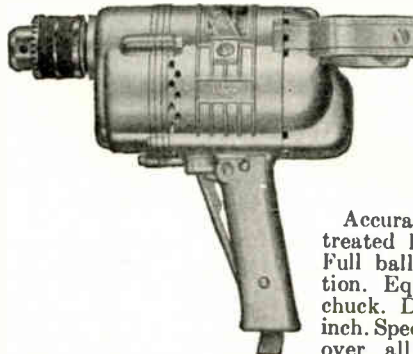
Aluminum housing, self-lubricating bearings, alloy-steel gears and slot-draft ventilation. Has Universal motor, trigger switch with locking pin handle, spade handle, dead handle, 3-jaw Jacobs chuck and key holder, 3-conductor cable and molded rubber plug.

Free speed, 450 r.p.m.; length overall, 15 inches.

Weight, 9 1/4 pounds.

Drill Champion..... each \$35.00

No. U44 Thor 1/2-Inch Electric Drills



For production or maintenance work.

Long carbon brushes. Air vents tangent to fan blade motion reduces heat.

Accurately machined, heat treated helical steel gears. Full ball bearing construction. Equipped with Jacobs chuck. Drilling capacity, 1/2 inch. Speed, 450 rpm. Length over all, 12 inches. Net weight, 9 1/4 pounds. Shipping weight 14 pounds.

No. U44..... each \$59.50

No. U20 Thor 1/4-Inch Light Duty Electric Drills



For intermittent drilling in maintenance work and for light production work. Has hand wound motor, grip switch handle and double-pole trigger switch with lock and trigger guard. Equipped with Jacobs chuck. Free speed 2200 r.p.m.; length 11 3/4 inches over all; weight 5 pounds.

No. U20..... each \$30.00

Thor 1/4-Inch Universal Heavy Production Electric Drills

Designed for heavy duty service in either maintenance or production work. Light weight. Uses double-pole trigger switch with lock and trigger guard and conveniently proportioned handle, providing ease of control and operation. Furnished with Jacobs Chuck.

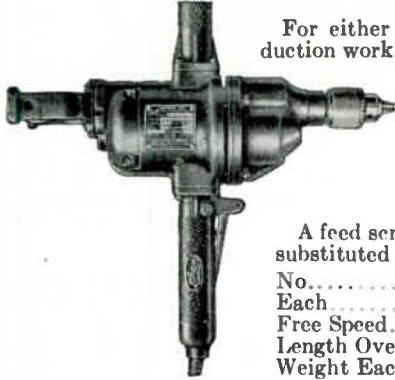
In ordering specify voltage.

No.....	U30	UKD
Each.....	\$45.00	*\$36.00
Free Speed.....	r.p.m. 2200	1400
Length.....	inches 12 3/4	12
Weight.....	pounds 7	5 1/2

*With center and stop device, \$22.50 extra.

No. U50 Thor 1/2-Inch General Purpose Electric Drills

For either maintenance or production work in any shop or plant.



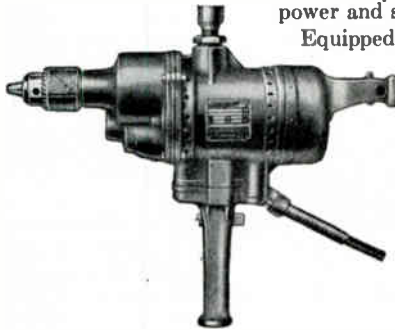
Has combination spade handle and breast plate, equipped with Jacobs chuck and dead handle.

A feed screw, if desired, can be substituted for the spade handle.

No.	U50
Each	\$58.00
Free Speed..... r.p.m.	600
Length Over All..... in.	15 1/2
Weight Each..... lbs.	13 1/2

No. UDA Thor 1/2-Inch Heavy Production Electric Drills

For deep drilling where great power and strength are required.



Equipped with Jacobs chuck, spade handle, side switch handle and dead handle. Feed screw may be substituted for spade handle if desired.

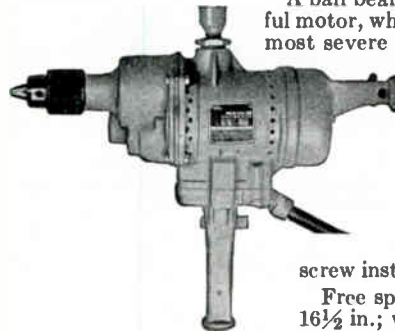
Free speed 650 r. p.m.; length 16 1/2 inches over all; weight 20 3/4 pounds.

In ordering, specify voltage desired.

No. UDA..... each \$72.00

No. UDB Thor 3/16-Inch Heavy Production Electric Drills

A ball bearing tool with a powerful motor, which can be used for the most severe operations for continuous 3/16-inch production drilling.



Equipped with Jacobs chuck, spade handle, side switch handle and dead handle.

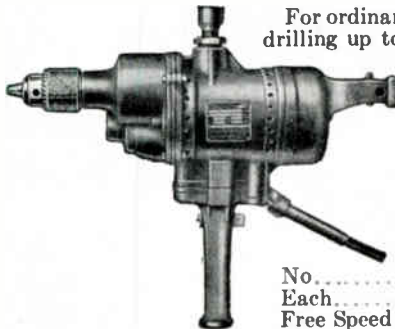
Can be furnished with a feed screw instead of a spade handle.

Free speed 500 r.p.m.; length 16 1/2 in.; weight 20 3/4 lbs.

No. UDB..... each \$74.00

Thor 5/8-Inch Heavy Production Electric Drills

For ordinary types of heavy duty drilling up to its capacity.



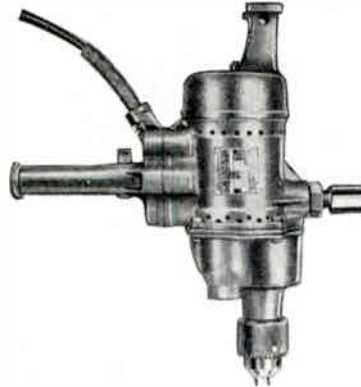
Equipped with Jacobs chuck, side switch, spade handle, and dead handle.

In ordering, specify voltage desired.

No.	UDC
Each	\$76.00
Free Speed..... r.p.m.	500
Length over All..... in.	16 1/2
Weight..... lbs.	22

Thor 5/8-Inch Heavy Production Electric Drills

A side switch type drill for drilling and reaming tough materials.



Free speed, 400 r.p.m. Equipped with either No. 2 Morse taper socket or 5/8 inch Jacobs chuck. Has spade and dead handles.

Specify voltage.

Length, 16 3/4 inches.

Weight, 21 1/2 pounds.

No. UEN... each \$85.00

Thor 3/4-Inch Light Electric Drills

Specially adapted for the hardest kind of service in production shops on a wide variety of work.

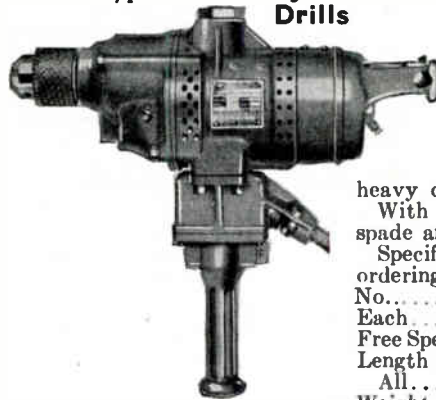


Equipped with No. 2 Morse Taper Spindle, spade handle and dead handle. Heavy duty.

In ordering, specify voltage desired.

No.	UES
Each	\$85.00
Free Speed..... rpm	330
Length Over All... inches	16 3/4
Weight..... pounds	22

Thor 3/4-Inch Heavy Production Electric Drills



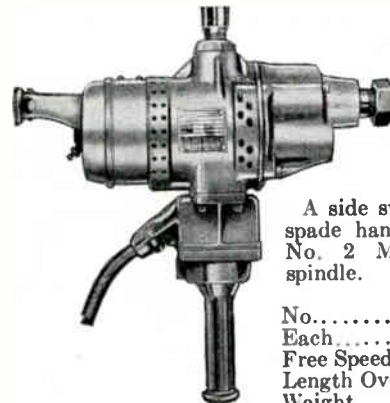
A side switch type drill of extra heavy construction. Suitable for all heavy duty work.

With Jacobs chuck, spade and dead handles. Specify voltage when ordering.

No.	UFH
Each	\$95.00
Free Speed r.p.m.	550
Length Over	
All..... inches	18
Weight..... pounds	28

Thor 7/8-Inch Universal Electric Drills

For heavy production work. Used by manufacturers of heavy machinery, in railway shops and in mine and construction work.



A side switch type drill; with spade handle, dead handle and No. 2 Morse Taper internal spindle.

No.	UFS
Each	\$96.00
Free Speed..... r.p.m.	350
Length Over All... inches	19 1/2
Weight..... pounds	27 3/4

Thor 1 and 1¼-Inch Heavy Production Electric Drills



Powerful, sturdy tools for the heaviest type of drilling and reaming.

Equipped with No. 3 Morse Taper spindle, spade and dead handles.

In ordering, specify voltage desired.

No.....	UFZ	U3Z
Each.....	\$115.00	150.00
Cap.....in.	1	1¼
Free Speed		
.....r.p.m.	300	350
Lgth. Over		
All.....in.	20	19¾
Wt.....lbs.	29	49½

Thor Electric Drill Stands



No. 8



No. 26

Quickly converts a portable electric drill into an accurate sensitive drill press. Has six to one leverage which permits tremendous pressure on the work.

Stand is so constructed that drill is accurately and securely arranged with minimum effort and held square and rigid.

No. 8 accommodates drills of capacities ⅝ to ½ inches. No. 26 and No. 30 accommodate drills of capacities ½ to ⅜ inches. When ordering, specify for what size tool.

No.	Each	Can be Used with the Following Drills	Vertical Adjusted Bench Movement			Wt. Lb.
			Inches	Inches	Space Inches	
8	\$22.00	All U14 Class	2	11	13 x9	29
	22.00	UL, UK, UA, UB	3	9	11½x9½	32
	22.00	U-20, U-30, U-44, U-50	3¼	10	13 x9	30
26	32.00	UDA, UDB, UDC, UEN, UES, UFH, UFS, UFZ, ½-In. Drill Champion	5	14	15 x9	50
30	36.00	Same as for No. 26	5	14	*	68

*Wall to center of drill, 14½ inches.

No. U100 Thor-Nado Portable Electric Hammers

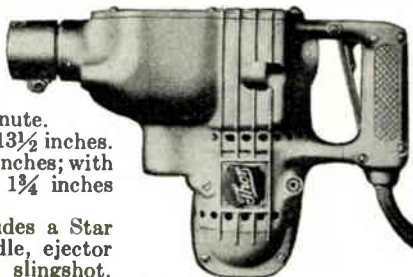
110-220 Volts, A.C. or D.C.

For heavy duty hammer service. Has a capacity in concrete up to a 1-inch Star drill; 1600 blows per minute.

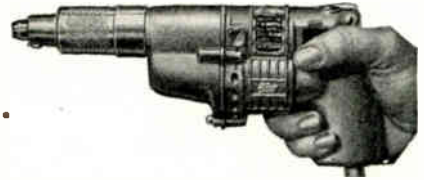
Length overall, 13½ inches. Spindle offset, 1⅝ inches; with ½-inch nozzle for 1¼ inches long shank.

Equipment includes a Star drill, turning handle, ejector pin, extra rubber slingshot, carrying case, 3-conductor cable with ground wire and molded rubber plug, momentary grip switch with lock.

Net weight, 14 pounds; shipping weight with case, 32 lb. No. U100.....each \$110.00



Thor One-Hand Electric Screwdrivers



Capacity, Nos. 4 to 12 screws. Has patented ventilating system. Accurately machined heat-treated helical gears. Equipped with No. 257 slip clutch attachment. No. U19A is a right angle tool.

Furnished with finders and bits.

No.....	U16A	U18A	U19A
Each.....	\$57.00	57.00	94.00
Free Speed.....	700	900	350
.....rpm.			
Length Overall.....	inches	10½	10¾
.....inches			13
Weight.....	pounds	4	4
.....pounds			6¾

Thor Universal Electric Screwdrivers



No. ULT for No. 10-24 metal screws. Used for driving small screws and nuts in metal work on radios, phonographs, pianos, automobiles, furniture, etc.

No. ULP for No. 8 wood screws. Designed for cabinet work, radios, aeroplane assembly and automobile trim work. Both types equipped with Thor double slip clutch attachment which can be adjusted to drive screws to any pre-determined tension.

No.....	ULT	ULP
Each.....	\$52.00	54.00
Free Speed.....	r.p.m.	900
.....r.p.m.		450
Length Over All.....	in.	12¾
.....in.		12¾
Weight.....	lbs.	3¾
.....lbs.		3¾

Thor Universal Electric Screwdrivers



Grip switch type; can be used in all lines of industry that require small screws, cap screws and nuts. Positive Clutch. Capacity, ¼ inch metal or No. 12 wood screws.

No.....	UKG	UKH
Each.....	\$58.00	58.00
Free Speed.....	r.p.m.	750
.....r.p.m.		400
Length Over All.....	inches	12⅝
.....inches		12¾
Weight.....	pounds	6
.....pounds		6
Size of Case to Center of Spindle.....	in.	1⅝
.....in.		1⅝

Thor Universal Electric Screwdrivers



A grip switch type screwdriver for all light screw and nut driving.

Equipped with double clutch friction type screw driv-

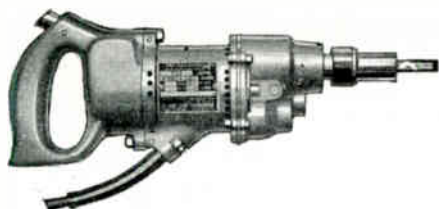
ing attachment with stationary finder.

Capacity, ¼ inch metal or No. 12 wood screws.

No.....	UKP
Each.....	\$68.00
Free Speed.....	r.p.m.
.....r.p.m.	400
Length Over All.....	inches
.....inches	14¼
From Side of Case to Center of Spindle.....	inches
.....inches	1⅝
Weight.....	pounds
.....pounds	6¾

Thor Universal Electric Screwdrivers

No. UBG



A grip switch screwdriver for use in automotive plants, furniture factories, etc. For Nos. 10 to 16 wood screws.

Equipped with positive clutch attachment but can be furnished with a variety of attachments for difficult screw and nut driving.

No.	UBG
Each	\$72.00
Free Speed	750 rpm.
Length Overall	14 1/2 inches
Weight	8 3/4 pounds

No. UBG-D Combination Screwdriver and Drill

By means of a specially designed Jacobs chuck and adapter, the UBG-D can be quickly converted from a heavy duty screwdriver or nut setter into a drill for heavy duty 3/8-inch drilling. The No. 3 Positive Clutch attachment for screw-driving and the No. 372, 3/8-inch Jacobs chuck and adapter are standard equipment. Other screwdriving and nut attachments are also available.

For Nos. 10 to 16 wood screws and 3/8-inch drill chuck.

Grip handle, plunger switch type. Equipped with ground wire. Available with a momentary trigger switch if so specified.

No.	UBG-D
Each	\$82.00
Free Speed	750 rpm.
Length Overall	14 inches
Weight	9 pounds

Thor 1/4-Inch Universal Electric Nut Setters

Grip switch type; with No. 140 Thor Kick-Out Nut Driving Attachment.



Nut and bolt setting require elasticity in attachment, so that various tensions may be easily obtained. Thor Double Slip Clutch with kickout was developed for this purpose.

No.	UBGN
Each	\$84.00
Free Speed	750 rpm.
Length Over All	17 3/4 inches
From Side of Case to Center of Spindle	1 3/8 inches
Weight	12 3/4 pounds

Thor 3/8 and 1/2-Inch Electric Nut Setters



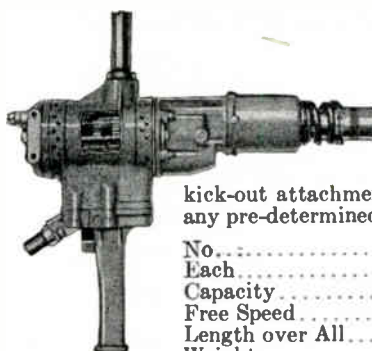
A powerful, sturdy nut driving machine used particularly in production lines because of its light weight.

Ordinarily furnished with a grip handle; also can be obtained with a suspension cap and hook. Furnished with a side switch and a No. A136 positive attachment. Has positive clutch.

No.	UCG
Each	\$94.00
Free Speed	450 r.p.m.
Length Overall	13 3/4 inches
Weight	15 1/2 pounds

Thor Electric Nut Setters

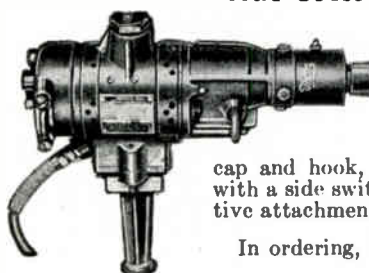
For 1/2-Inch Nuts



Equipped with suspension cap and hook or grip handle. Has side switch and dead handle. Has the Thor No. 141 kick-out attachment which drives nuts to any pre-determined tension.

No.	UEH	UCH
Each	\$135.00	110.00
Capacity	1/2 in.	1/2 in.
Free Speed	550 r.p.m.	450 r.p.m.
Length over All	17 1/2 in.	16 1/2 in.
Weight	23 3/4 lbs.	15 1/2 lbs.

Thor 1/2-Inch Heavy Duty Electric Nut Setters



Used where constant, severe service is required.

Can be furnished with suspension cap and hook, if specified. Equipped with a side switch and a No. A136 positive attachment.

In ordering, specify voltage desired.

No.	UEG
Each	\$120.00
Free Speed	550 r.p.m.
Length Overall	15 inches
Weight	23 pounds

Thor Universal Electric Tappers



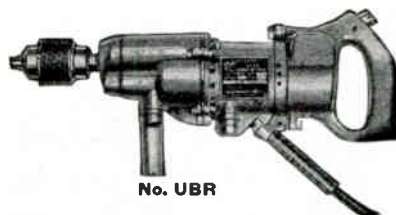
No. UKS

Grip switch type; for tapping or stud driving jobs.

Super-power motors, ball-bearing design, special heat-treated gears, etc.

Tappers have the mechanical reversing feature. A slight pull on the machine disengages the forward speed and engages the reverse speed.

Have universal motors; will operate on a.c. or d.c.



No. UBR

No. UKS is equipped with a 5/16-inch chuck, No. UBR with a 3/8-inch chuck.

From side of case to center of spindle: No. UKS, 1 inch; No. UBR, 1 3/8 inches.

No.	UKS	UBR
Each	\$68.00	85.00
Capacity	1/4 inches	3/8 inches
Free Speed	460 r.p.m.	500 r.p.m.
Length Over All	14 3/4 inches	16 1/2 inches
Weight	8 3/4 pounds	10 1/4 pounds

Thor Universal Portable Electric Grinders



A powerful electric grinder with heat-treated, alloy steel, spiral helical gears. Armature and spindle provided with large over-size ball bearings with convenient means for lubrication. Outer end of spindle support has labyrinth grease seal and is reinforced with steel hub where wheel guard is clamped.

Furnished with ground wire, wheel guard and 10 feet of cable. Spindle thread, 1/2-inch x 13; spindle offset, 1 inch. Length, 19 1/2 inches. Shipping weight, 18 pounds.

No. U54 U55
Without Grinding Wheel..... each \$62.00 80.00
Wheel Capacity..... inches 4 5
Free Speed..... r.p.m. 6000 4500

Specify voltage desired.

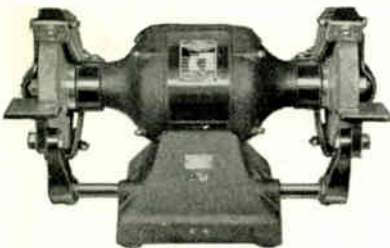
No. U60 Thor Universal Electric Grinders



Equipped with super-power motor, special heat-treated gears, large ball bearings. Carries a 6x1-inch wheel. Furnished with straight switch handle and emery wheel guard. Spindle thread 5/8x11 inches.

No..... U60
Each, without Wheel..... \$100.00
Speed, No Load..... r.p.m. 4000
Length Over All..... in. 24 1/2
Weight..... lbs. 20

Thor Bench Grinders

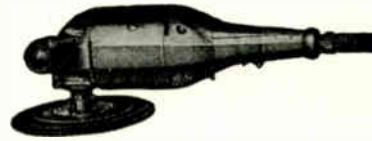


For 6 and 7-in. wheels, powerful, smooth-running, noiseless, free from vibration. Heavy ball bearings on spindle.

Specify whether for a.c. or d.c., 110 or 220 volts. No. B-66 is for a.c. only.

No.	B-66	B-6	B-7
Each.....	\$24.00	32.50	49.50
Wheel Size..... inches	6	6	7
Voltage.....	110	110 or 220	110 or 220
Free Speed..... rpm.	3450	3450	3450
Weight..... pounds	40 1/2	50 1/2	76

No. U58 Thor Light Duty Portable Electric Sanders



For sanding, grinding, cleaning, preparing automobile bodies and fenders for paint jobs, and every application which might involve sandpaper or emery.

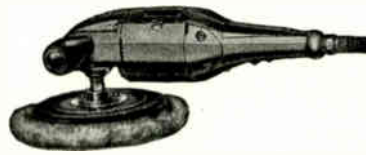
Armature and spindle run in ball bearings. Cut gears of alloy steel, heat treated. Inspection of motor can be made while sander is running by removing 2 brush covers. Side handle can be used on either side of machine.

Free speed, 4000 r.p.m. Length, 14 1/4 inches.

Equipped with 7-inch flexible rubber pad and a box of 3 assorted abrasive discs. Weight less pads, 9 1/2 pounds.

No. U58..... each \$48.00

Thor 7-Inch Electric Polishers

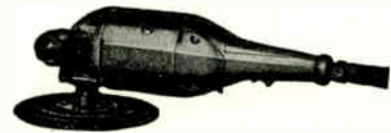


A light weight, perfectly balanced and easily handled polisher that is equipped with a powerful Thor motor.

Armature and spindle run in ball bearings. Alloy steel heat-treated gears. Easily taken apart for cleaning by removing brush covers. Handle can be used on either side of machine. Equipped with one 7-inch flexible rubber pad; one 7-inch felt pad and one 8-inch sheep wool pad.

No..... U70 U38
Each..... \$75.00 65.00
Free Speed..... rpm 2300 1950
Length Overall..... inches 16 1/4 13 3/4
Weight..... pounds 16 1/2 7 3/4

Thor Universal Heavy Duty Electric Sanders



For sanding, grinding, cleaning, etc. Side handle can be used on either side of machine. Each tool equipped with 3 abrasive discs, ground wire, rubber pad, and straight switch handle. Speed, 4200 rpm. Length, 16 3/4". Ship. wt., 24 lb. Specify voltage desired.

No..... U68 U69
Each..... \$75.00 78.00
Discs, Capacity..... inches 7 9

U68 furnished equipped with cone-shaped cup wheel 6x2x 7/8-inch hole by specifying U67. U67 comes with adjustable wheel guard, if desired.

Thor Portable Ball-Bearing Belt Sanders



No. TP. Streamlined; has momentary switch and touch-control lever that relieves tension on belt.

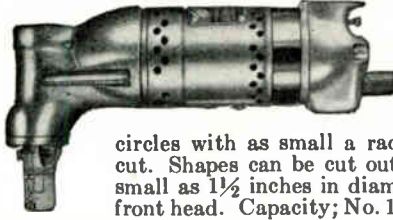
Nos. 7 and 8. With 2-pole toggle bakelite enclosed switch. Belts removed by turn of wheel. No. 8 has dust collecting system.

No.	TP	7	8
Each.....	\$82.50	95.00	125.00
Belt Speed..... feet per minute	1200	1500	1500
Belt Size..... inches	3x24 1/4	4 1/2 x 26	4 1/2 x 26
Size Overall..... inches	4 1/4 x 13 1/4 x 7	7 x 14 x 9	7 x 14 x 12
Weight..... pounds	13 1/4	18	22



OFFICES IN ALL PRINCIPAL CITIES

No. U1N Thor Electric Nibblers For Cutting Sheet Metal and Tubes 110-220 Volts, A.C. or D.C.

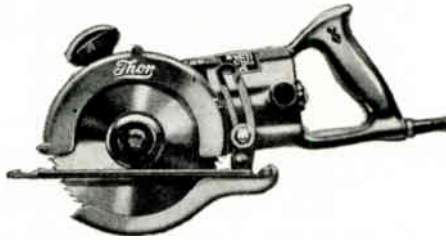


Internal cuts of any shape may be made without breaking-in from the edge of the stock. Curves and circles with as small a radius as 1 inch can be cut. Shapes can be cut out of tubing that is as small as 1½ inches in diameter. Has yoke type front head. Capacity; No. 18 gage in sheet metal, No. 15 gage in aluminum.

Minimum cutting radius, 1-inch; length overall, 9 inches; diameter of body, 2½ inches.
Input; free speed, 90 watts; full load, 200 watts.
Weight, 3¾ pounds.
When ordering, specify voltage.
No. U1N..... each \$60.00

Thor Portable Electric Saws

For metal or wood sawing. Heavy duty. High grade ball bearings throughout. Specify type of work so that proper blade or disc can be selected.



No.	All Voltages Each	Size Blade In.	Max. Depth Cut in Wood Inches	No.	All Voltages Each	Size Blade In.	Max. Depth Cut in Wood Inches
1A	\$75.00	6	1 7/8	4A	\$135.00	9	2 7/8
2A	105.00	7	2 5/8	5	180.00	10	3 3/4
3	125.00	8	2 3/4	6A	195.00	12	4 3/8

Thor Saw Blades

Combination Blades

Designed for all around work; suitable for ripping or crosscutting.

No.	376	377	378	379	380	382
Each	\$2.95	3.50	3.95	4.60	4.95	5.95
Diameter.....inches	6	7	8	9	10	12

Cut-Off Blades

For all types of crosscut work.

No.	309	356	293	357	324	334
Each	\$2.95	3.50	3.95	4.60	4.95	5.95
Diameter.....inches	6	7	8	9	10	12

Nail Cutting Blades

Excellent for repairing old floors. Also used for opening boxes and crates where nails may be struck.

No.	347	358	348	359	349
Each	\$3.25	3.90	4.40	5.00	5.60
Diameter.....inches	6	7	8	9	10

Ideal 3-in-1 Electric Cleaners



As a Blower

This cleaner is easily adaptable to all kinds of cleaning work. Used for vacuum cleaning and blowing. Cleaner can be easily converted into a blower and vice versa. Also used for all general plant cleaning jobs as well as for spraying insecticides, varnishes, shellacs, paint, etc.

Jumbo Model No. 50. For extra heavy duty service; super-powered. Has a full 1-hp., 11,000-rpm. motor. Air velocity, 24,200 feet per minute. For 110, 220, and 250 volts; 25 to 60 cycles. Equipped with 20 feet of heavy duty 3-wire safety cord and rubber plug.
No. 50, Weight 14 Pounds..... each \$105.62

Whiz Model No. 10. For light duty cleaning work. Has ¼-hp. universal motor. Air velocity, 15,000 feet per minute. For 32 to 250 volts; 25 to 60 cycles.
No. 10, Weight 7 Pounds..... each \$49.37

Giant Model No. 20. For intermediate duty service. Has ½-hp. universal motor. Air velocity, 15,600 feet per minute. For 32 to 250 volts; 25 to 60 cycles.
No. 20, Weight 7½ Pounds..... each \$61.87

Super-Giant Model No. 30. For heavy duty service. Has a ¾-hp. motor. Air velocity, 18,720 feet per minute. For 32 to 250 volts; 25 to 60 cycles.
No. 30, Weight 9½ Pounds..... each \$81.25

Hot and Cold Air Model No. 40. For use where moisture constitutes an industrial problem. Has a double action switch; may be set for either hot or cold air. Equipped with ½-hp. universal motor. For 32 to 250 volts; 25 to 60 cycles.
No. 40, Weight 8 Pounds..... each \$74.37

Sturtevant Big Midget Portable Blowers



Delivers dry air for removing dust from machinery. Compressed air ordinarily contains moisture; this blower shoots dry air. Does away with air lines and lugging a

hose around, and work is reached from all sides. Has ½ h.p. universal motor, 110 or 220 volts; speed, open outlet, 9895 r.p.m., closed outlet, 11100 r.p.m.; volume delivered, 43.2 cubic feet per minute; air velocity, 14820 feet per minute; static pressure, outlet closed, 16.62 ins. water; inside diameter nozzle, ¾ inch.

Furnished with 20-foot cord and plug; switch in handle. Weight, 7 Pounds.

Each..... \$82.00

Peiffer Universal Cylinder Bellows



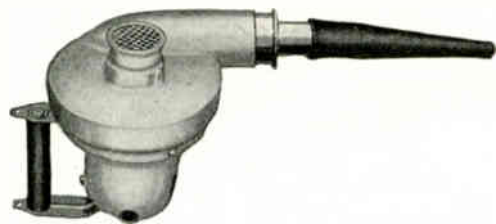
Made especially for cleaning out switchboards and all telephone and telegraph apparatus.

Bellows has no metal mountings, being made of a composition fiber. Will not short-circuit.

No.	1	2	3	4
Each	\$2.25	3.00	4.50	6.00
Length.....inches	20	22 3/8	24 3/4	25 1/8
Weight.....ounces	10 1/2	13 1/2	16 1/2	23



Premier Heavy Duty Blowers



Used for cleaning equipment in telephone exchanges. Also used as an exhaust fan for removing dust from buffing and grinding wheels.

Equipped with 110-volt, Universal type, ball-bearing motor. Motor requires no oiling; may be operated continuously without overheating.

Furnished with 20-foot extension cord, and rubber blower nozzle with coupling and screen guard.

No.	146	66
Each.	\$40.00	30.00
Motor.	hp. $\frac{5}{8}$	$\frac{1}{4}$
Maximum Vacuum (Water Gauge) ...	inches 35	19
Volume of Air.	cfm. 150	90
Weight.	pounds 12	7

Premier Suction Tools

For Use with Premier Heavy Duty Blowers



These tools are specially designed non-conductors. Used and recommended by telephone engineers and radio station engineers for cleaning switchboards and other difficult-to-clean electrical equipment.

With these tools a Premier Blower can be quickly converted into a powerful and efficient suction cleaner.

No.	Name of Part	No.	Name of Part
759	Short Extension Tube	25019	Counter Brush
2434	Strap	25020	Sash Brush
25013	Adapter	25042	Shield
25015	Rubber Nozzle	25070	Coupling
25016	Adapter Sleeve	25072	Guard
25017	Military Type Brush	25074	Hose

Weight, 10 pounds.

Complete Set as Listed. each \$20.00

Ideal Portable Cleaner Attachments

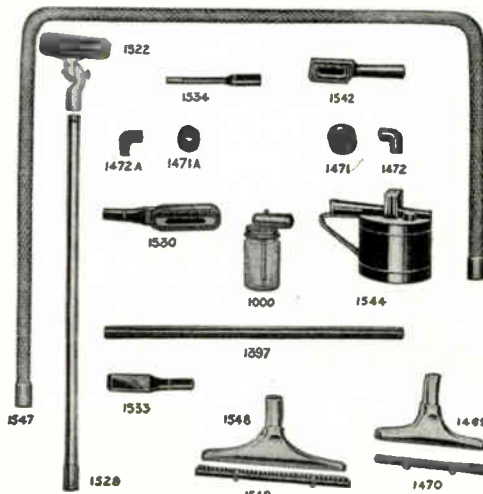
For Use with Jumbo, Super-Giant, Giant, or Whiz Model Cleaners

Standard Attachments



Standard Attachments. per set \$12.50

Special Attachments



No.	Description	Each
1000	Paint, Powder, and Liquid Sprayer (Quart or Pint Size).....	\$3.45
1397	23-Inch Fiber Extension Handle.....	2.20
1469	10-Inch Floor Nozzle for Use with No. 1529 Handle.....	5.60
1470	10-Inch Snap-On Bristle Brush.....	1.10
1471	Round Insulated Brush, 2 $\frac{1}{8}$ -In. Diameter....	1.63
1471A	Round Insulated Brush, 2-Inch Diameter....	1.56
1472	Semi-Hard Rubber Elbow.....	1.12
1472A	Aluminum Elbow.....	1.31
1522	Adjustable Wall Brush.....	6.00
1529	44-Inch Steel Extension Handle.....	5.31
1530	7-Inch Switchboard Brush.....	7.38
1533	Flat Fiber Cleaning Tool.....	2.75
1534	Telephone Braid Cleaning Brush.....	4.56
1542	4-Inch Semi-Hard Rubber Insulated Brush....	4.88
1544	Insecticide Sprayer, 5-Pint Capacity.....	7.50
1546	Flat Flue Cleaning Brush.....	9.50
1547	8-Foot Hose.....	4.56
1547A	10-Foot Hose.....	6.90
1548	14-Inch Floor Nozzle for Use with No. 1529 Handle.....	7.50
1549	14-Inch Snap-On Bristle Brush.....	1.13

11g Electric Propeller Fans

11g Self-Cooled Propeller Fans

Selecting the Correct Size of 11g Self-Cooled Motor Propeller Fan

The air change required in a room differs with the conditions found therein. The worse the air conditions, the faster the air should be changed; restaurants for instance need a more rapid air change than do offices. Air conditions in a given type of building are fairly uniform and it is possible to generalize on the rate of air change advocated for various classes of buildings. Note the listing below.

Air Changes

Class of Buildings	Air Should be Changed
Restaurant and Hotel Kitchens....	Every 1 to 2 Minutes
Offices and Stores, Depending on the Climate.....	Every 2 to 5 Minutes
Workrooms and Factories.....	Every 5 to 10 Minutes
Residence Kitchens.....	Every 1 to 2 Minutes
Garages.....	Every 5 to 10 Minutes
Theatres.....	Every 2 to 5 Minutes
Halls.....	Every 5 Minutes
Laundries.....	Every 2 to 5 Minutes
Farm Barns.....	Every 10 Minutes
Attic Cooling.....	Every 2 minutes on floor beneath attic

Self-Cooled Motor

The ingenious, exclusive self-cooling features of the 11g ventilating fan motor combines the low operating cost of the open motor with the protection of the fully enclosed motor.

The 11g self-cooled motor is an open motor, protected and enclosed by a metal hood. The fan action draws clean air through the vent-pipe from the outside, circulates it through the motor and exhausts it. The motor stays clean, stays cool; no foul air reaches it.

The value of this self-cooling feature is reflected in lower operating costs, quieter operation and longer service life.

Slow Speed—Quietness—Long Life

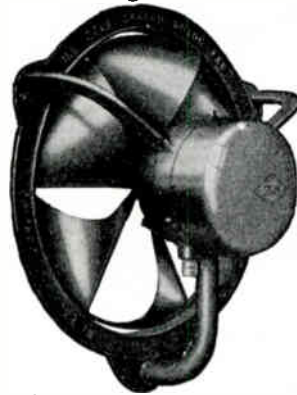
This motor propeller fan is made to operate efficiently at low speeds, from the 12-inch 11gair running at 1140 r.p.m. to the 72-inch 11g fan at 315 r.p.m.; slow speeds characterize the 11g line. Slow speeds permit quiet operation, smoother, effortless running, less vibration and bearing wear. Many an 11g self-cooled motor propeller fan is as good as new after years of service. Slow speed is the answer.

Two Fans in One

The 11g self-cooled motor propeller fan for single phase operation is equipped with two speed controllers. In effect, this gives the user two fans for the price of one; at top speed a reasonably quiet ventilator for peak loads, and for hot weather duty; at low speed, a fan which is noiseless, ready for cold weather ventilation duty. Here is year round use, top capacity, silent operation, and flexibility of performance, all in one fan.

Improved Balanced Wheel

Slow speeds are possible because of the improved 11g bucket type fan wheel. The deeply cupped blades scoop up the air, working efficiently at low speeds. Dynamic balancing on a costly machine makes the 11g fan wheel quiet, vibration-free for life.



Constructed with patented 11g enclosed self-cooled motor which affords the low operating cost of the open motor with the protection of a fully enclosed motor.

Fan action draws clean air through vent pipe in the bottom of the fan from out-of-doors, circulates it through the motor and exhausts it.

Motor stays cool and clean and uses less power.

Ratings are certified to be in accordance with the A.S.H. & V.E.

Constant Speed, S. Ph. 110 or 220 Volts, 60-Cycle

Size In.	Type	Each	Speed RPM.	CFM.	Watts Input	Motor Frame No.	Ship. Wt. Lb.
9 1/2	11gette	\$25.00	1550	450	40	41	12
12	11gair	40.00	1140	750	70	13	23
16	11gair	68.50	855	1000	100	15	48
16	SH	66.00	1140	1400	100	15	48
18	SH	94.50	1140	2300	170	D87	80
20	SH	115.00	1140	3200	250	S87	96
24	SH	153.50	855	4100	275	D102	186
30	SH	231.00	685	7300	450	D101	216
36	SH	346.50	570	9650	500	D104	445
†42	SH	407.50	490	12300	800	D104	550
†48	SH	504.00	490	18400	1300	D105	780

***Two-Speed, S. Ph. 110 or 220 Volts, 60-Cycle**

Size In.	Type	Each	Speed RPM.	CFM.	Watts Input	Motor Frame No.	Ship. Wt. Lb.
16	S	\$88.00	855	1000	100	15	60
			1140	1400			
18	S	121.00	855	1750	170	D87	84
			1140	2300			
20	S	143.00	855	2400	250	D87	96
			1140	3200			
24	S	203.00	600	2880	275	D102	190
			855	4100			
30	S	265.00	500	5420	450	D101	220
			685	7300			
36	S	378.00	400	6900	500	D104	450
			570	9650			
†42	S	446.50	380	9800	800	D104	568
			490	12300			

*Two speed controller included. †220 volts only.

For 50-cycle use same list price; speeds and capacities are 5/6 of those shown for 60-cycle.

A.C., 50-60-Cycle, 2 or 3-Phase

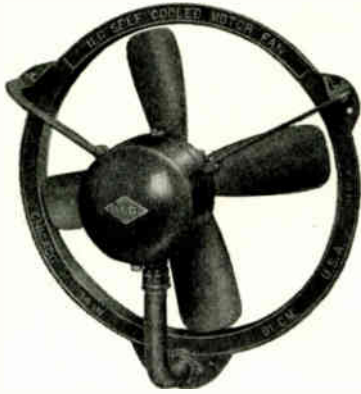
Size In.	Type	220 or 440 Volts Each	550 Volts Each	Speed RPM.	CFM.	Watts Input	Motor Frame No.	Ship. Wt. Lb.
18	M	\$128.00	\$154.50	1140	2300	120	87	80
20	M	143.00	177.50	1140	3200	200	87	110
24	M	165.00	198.50	855	4100	250	102	172
30	M	198.50	231.00	685	7300	400	101	228
36	ML	319.50	363.50	490	8300	460	104	450
36	M	319.50	363.50	570	9650	460	104	460
42	M	367.50	409.50	490	12300	800	104	630
48	M	430.50	483.00	490	18400	1300	105	780
54	M	697.00	777.00	425	23200	1950	107	900
60	M	903.00	1008.00	380	28400	2000	108	1150
72	M	1092.00	1218.00	315	40500	2100	109	1600

D.C.,

Size In.	Type	110 or 220 Volts Each	500 Volts Each	Speed RPM.	CFM.	Watts Input	Motor Frame No.	Ship. Wt. Lb.
†9 1/2	11gette	\$25.00	.....	1550	450	70	41	12
12	11gair	44.50	.....	1140	750	70	100	23
16	B	76.50	.....	1140	1400	100	1/8	48
18	B	110.50	.....	1140	2300	150	1/6	80
24	A	220.50	\$231.00	855	4100	300	1197	186
30	A	264.50	278.50	690	7300	440	1199	220
36	A	397.00	417.00	570	9650	600	1207	450
42	B	462.00	485.00	490	12300	800	1207	550
48	B	619.50	651.00	490	18400	1300	1211	800
54	B	913.50	959.00	425	23200	1800	1213	950
60	B	1260.00	1323.00	380	28400	2270	1215	1200
72	B	1407.00	1477.50	315	40500	2300	1217	1600

Enclosed speed controllers furnished with all d.c. fans except the Type 12 size. †110 volts only.

Ilg Special High Speed Propeller Fans



Suitable for industrial or other uses where noise is no consideration.

Regular self-cooled motor construction with 4-blade cast aluminum fan wheel.

110 or 220 Volts, 1 Phase, 60 Cycles

Size	Each	RPM.	CFM.	Watts Input	Motor Frame	Ship. Wt. Lb.
18HS	\$147.00	1750	3100	300	87	90
24HS	252.00	1140	5500	500	102	190
*30HS	336.00	1140	10000	750	103	265

220 or 440 Volts, 2 or 3 Phase, 60 Cycles

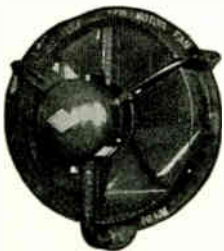
Size	Each	RPM.	CFM.	Watts Input	Motor Frame	Ship. Wt. Lb.
18HM	\$162.00	1750	3100	300	87	100
24HM	195.50	1140	5500	500	102	225
30HM	258.50	1140	10000	750	103	325
36HM	351.00	1140	15000	1200	104	500

110 or 220 Volts, D.C., with Regulator

Size	Each	RPM.	CFM.	Watts Input	Motor Frame	Ship. Wt. Lb.
24HB	\$294.00	1140	5500	500	1197	235
30HB	357.00	1140	10000	750	1207	345

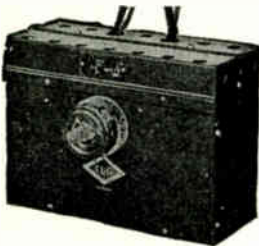
Ilg Propeller Fan Guards

Ilg Woven Wire Guards are strong and durable and do not obstruct flow of air to the fan. Furnished in one, two, or three sections; all sections are interchangeable.



Propeller Fan with 3-Section Guard

Size Inches	Per Section Each	Complete Each	Weight Pounds Complete
12	\$3.25	\$9.50	2
16	3.50	10.00	2 1/2
18	3.75	11.00	3 1/2
20	5.50	16.50	4
24	6.50	19.90	5
30	7.75	23.25	8
36	9.25	27.75	11
42	10.00	29.50	15
48	12.30	36.75	24
54	15.75	47.25	38
60	21.00	63.00	50
72	28.00	84.00	75



2-Speed Type

Ilg Variable Speed Controllers

A.C., 2 and 3-Phase



Variable Speed Type

Full speed and approximately 40% reduction.

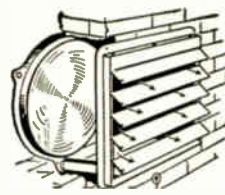
Size.....inches	18	20	24	30	36
Each.....	\$80.00	80.00	88.00	88.50	88.50

Variable Speed Type

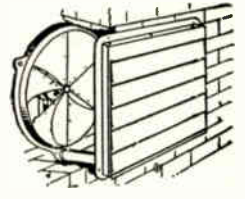
Variable speed adjustment from full speed to 50% reduction.

Size.....inches	42	48	54	60	70
Each.....	\$169.00	200.50	256.50	256.50	256.50

Ilg Automatic Shutters



Fan Running



Fan Not Running

These shutters are used on the outside of propeller fans to protect the fan when not running and also to keep out the wind, rain, snow and cold.

Ilg Automatic Shutters are built of special hard rolled aluminum leaves, pressed on Whiting Alloy copper coated rods supported in cast frame.

When fan is running, the shutter is held open by the force of the air current. When fan is shut off, the shutter closes automatically by gravity.

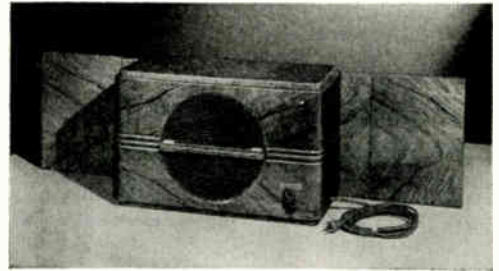
Shutters are moisture proof and need no attention after they are installed.

Size of shutter corresponds to size of fan.

Sizes 48-inch and larger are built in two sections.

Size Inches	Approx. Shipping Wt., Lbs.	Each	Size Inches	Approx. Shipping Wt., Lbs.	Each
9 1/2	7	\$7.50	36	112	\$54.00
12	10	8.50	42	152	79.00
16	19	11.50	48	188	105.00
18	30	14.00	54	195	126.00
20	43	17.00	60	210	178.50
24	67	20.00	72	314	199.50
30	80	38.00	..	...	.....

No. BM388 Filter Type Ilgairator Window Ventilators



This is an electric fan and air filter unit that can be used with any sliding sash window for supplying fresh, filtered air to a room. Dust, soot, and plant pollens are filtered out of the air with over 98% efficiency.

The cabinet is made of furniture steel attractively proportioned and finished in natural walnut grain. Six adjustable panel widths are furnished for various window widths. The installation does not interfere with opening, closing or locking window. Filter is replaceable; a new cartridge is easily inserted.

With all necessary accessories including rubber covered cord and plug; operates from any electric light socket.

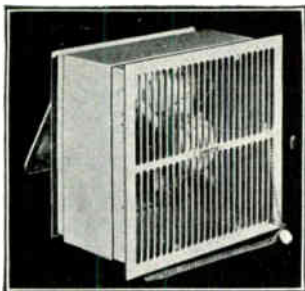
Single phase, 60 cycles, 110 volts.

Air capacity, 250 cfm. Speed, 1550 rpm. Watts, 40.

Also available for d.c. Prices on application.

Panel Adjustment ..in.	24-26	26-30	30-36	36-45	45-58	58-78
No. BM388.....each	\$61.50	54.00	54.00	54.00	61.50	71.50
Ship. Wt.....lb.	35	35	38	42	46	52

1lg Built-In Kitchen Ventilators



This ventilator is permanently installed behind an attractive grill. A pull chain starts and stops fan, simultaneously opening and closing the outer weather-tight door, which keeps out insects and cold air when the ventilator is not in operation. Installation can be made with little trouble.

ILGAIR.—For the large kitchen, cabinet dimensions, 8 $\frac{3}{4}$ inches deep, 12 $\frac{3}{4}$

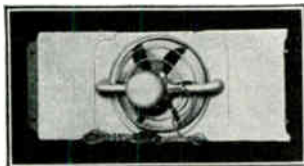
inches high, and 13 $\frac{1}{2}$ inches wide. Ivory finish, including grill.

ILGETTE.—For the small kitchen. Dimensions: 12 inches high, 12 inches wide, adjustable depth. Enameled French gray with mirror-finish metal grill.

AUTOMATIC ILGETTE.—Equipped with a small motor in place of pull chain for complete electrical operation of the unit from a wall switch.

	Ilgette	Ilgair	Automatic Ilgette
CFM.....	500	800	500
110-220V., 50 or 60 Cycles, A.C. each	\$44.00	\$57.00	\$62.50
110 V. D.C. or 25 Cycles A.C. each	44.00	61.00	.....
RPM.....	1550	1140	1550
Watts.....	40	70	55
Shipping Weight..... pounds	28	42	30

1lg Portable Kitchen Ventilators



Recommended for rented homes or apartments, this ventilator fits any ordinary window. Requires only 8 screws for complete installation. All steel ivory finish panel in 26 to 36 inches and 36 to 46 inches widths; glass, clear-vision,

panel in 30 to 36-inch, 36 to 42-inch and 42 to 48-inch widths in Ilgair model only. Complete with 10-foot cord, switch plug, and sash lifting handles.

Ilgettes—Small Model

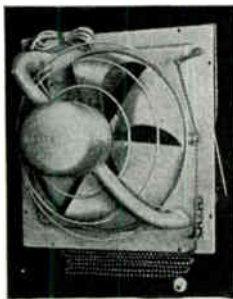
C.f.m., 450; r.p.m., 1550; watts, 40; shipping weight, 35 pounds.
 110 or 220 Volts, 50 or 60 Cycle A.C.....each \$29.00
 110 Volts D.C. or 25 Cycle A.C.....each 29.00

Ilgair—Larger Model

C.f.m., 750; r.p.m., 1140; watts, 70; shipping weight, 40 pounds.

	Portable Type	Glass Panel
110 or 220 Volts, 50 or 60 Cycle A.C.....each	\$42.00	\$60.00
110 Volts D.C., or 25 Cycle A.C.....each	46.00	64.00

Ilgette Package Type Kitchen Ventilators



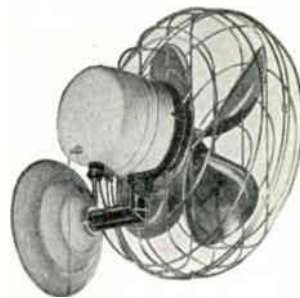
Designed for permanent installation in casement and other small-paneled windows used in many modern apartment and home kitchens. Easily mounted in the window in place of 1 pane of glass. The nickel silver beaded chain starts the fan and opens the outer weather-tight door. Release of the chain stops the fan and closes the door. Finished in ivory enamel and is equipped with an attractive fan guard. Panel dimensions are 12 inches high by 12 inches wide.

C.f.m., 450; r.p.m., 1550; 40 watts; shipping weight, 35 pounds.
 110 or 220 Volts; 50 or 60 Cycle A.C.....each \$38.00
 110 Volts D.C. or 25 Cycle A.C.....each 38.00

1lgstream Fans



Floor Type



Universal Type Wall Mounting



Universal Type Display Case Mounting

A new type air disturbance fan for stores, restaurants, offices, etc. It has high volume, setting into motion air currents over wide floor areas.

While discharging the air at high velocity, the 1lgstream fan is quiet, entirely suitable for any room where noise is out of place.

Floor Type

Has the advantage of portability. A strong chrome-plated fan guard prevents accidental injuries. The fan wheel is mirror-finished aluminum alloy, and the upright is chromium plated. The heavy weighted base is in black crackle with chromium trim. The motor hood is finished to match.

The 4-blade wheel is designed to operate at low speed and deliver a large volume of air at high velocity. Has locked-tight up and down directional fan adjustment.

Overall heights are: Model 23, 102 inches; Model 27, 105 inches.

No. 23 series weighs 140 pounds, No. 27 series weighs 240 pounds.

No.....	23F2	23F1	27F2	27F1
1-Phase, 110 Volts..... ea.	\$101.00	\$92.50	\$183.00	.....
60-Cycle, 220 Volts..... ea.	103.00	94.50	183.00	.....
115 Volts, D.C..... ea.	113.50	109.50	220.50	\$206.00
No. of Speeds.....	2	1	2	1
R.P.M.....	1140-855	1140	855-600	855
*Capacity..... C.F.M.	4200-3150	4200	7000-4900	7000

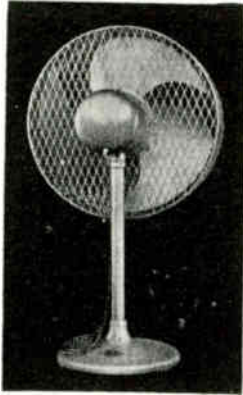
Universal Type

Can be mounted on wall or ceiling or placed on display case or other surface. A swivel arrangement permits the directing of the fan up or down, left or right and positive locking in that position. The directional adjustment can be quickly changed at any time.

No.....	23U2	23U1	27U2	27U1
1-Phase, 110 Volts..... ea.	\$92.50	\$84.00	\$168.00	.....
60-Cycle, 220 Volts..... ea.	94.50	86.50	168.00	.....
115 Volts, D.C..... ea.	109.50	101.00	206.00	\$191.00
No. of Speeds.....	2	1	2	1
R.P.M.....	1140-855	1140	855-600	855
*Capacity..... C.F.M.	4200-3150	4200	7000-4900	7000

*Capacity includes induced air volume.

**Ilgwind Fans
For Recirculation**



A portable plug-in unit used for cooling homes and apartments. Expels hot air and draws in cool air. Inside temperatures drop from 5° to 20° as an Ilgwind fan is placed at one window, and other windows and doors are opened to make possible a complete air change. For handling up to eight rooms.

Adjustable in height. Has a fine mesh safety guard. With 2-speed, 60-cycle, single-phase motor, 110 or 220 volts. Direct connection of motor and fan eliminates friction and noise. With 20-foot rubber-covered cord.

	No. 271		No. 331	
	rpm.		rpm.	
Speed.....	1140	885	855	600
Each.....	\$144.00	144.00	179.00	179.00
Capacity.....	7000	4900	12000	8600
Hp.....	1/4	1/4	3/8	3/8
Watts.....	370	185	450	345
Ht. Floor to Hub.....	41-65	41-65	39-63	39-63
Net Weight.....	95	95	160	160
Shipping Weight.....	165	165	260	260

Ilg Portable Floor Fans



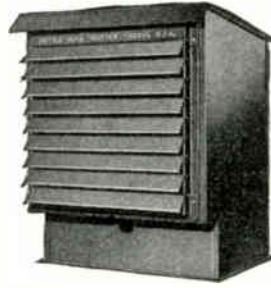
For industrial air cooling. Discharges large volumes of air at high velocity. Propeller has 4 blades of cast aluminum protected by guards. Cast iron base.

The 12-inch fan is equipped with cord and plug; larger models with standard enclosed switch.

Size.....	12	24	30	36
220 or 440 V., 3-Ph. A.C.				
..... each	\$103.00	294.00	357.00	416.00
230 V., D.C.				
..... each	\$115.50	388.50	535.50	604.00
†C.F.M.	3200	8000	16000	24000
R.P.M.	2400	1140	1140	1140
Watts Input.	230	500	750	1200
Weight...lbs.	140	350	400	550

*110 or 220 volts 1-phase only.
†Capacities include induced air volume.

Ilg Power Roof Ventilators



For buildings where roof ventilation provides the only practical means of exhausting foul air.

There is a constant suction created by the Ilg Self-Cooled Motor Propeller Fan which is enclosed in the penthouse. The foul, dead air and excess heat are positively and uniformly drawn off by the action of the fan. Wind and weather can have no effect.

Placed above machines in special processes and connected by duct work, the unit serves as a fume or smoke and

heat exhauster. Since heat's natural direction of travel is upward, the Ilg Power Roof Ventilator has found wide use in every industry confronted with excessive heat.

The Ilg Self-Cooled Motor Propeller Fan is mounted within a sheet steel penthouse. Solidly constructed over a heavy angle iron frame, the house is weathertight in every respect. Furnished complete with shutter. Prices do not include fan.

Size Ventilator In.	Standard Each	Insulated Each	Size Shutter & Fan In. 1	PENTHOUSE DIMENSIONS, INCHES			Gage Metal	Ship. Wt. Lb.
				Depth	Width	Height		
12	\$66.00	\$96.50	12	16	20	30	20	90
16	66.00	99.00	16	16	20	30	20	95
18	77.00	121.00	18	18	24	36	18	105
20	89.00	137.50	20	18	26	36	18	135
24	104.00	154.50	24	21 1/2	30	42	18	170
30	149.00	209.00	30	25 1/4	36	49	18	235
36	198.50	262.50	36	27 1/4	44	58	18	400
42	294.00	367.50	42	32	50	62	18	580
48	378.00	472.50	48	36	56	72	18	740
54	577.50	693.00	54	40	63	82	16	820
60	661.50	808.50	60	44	69	98	16	910
72	976.50	1155.00	72	48	82	102	16	1070

Type P Ilg Volume Blowers



The Ilg Type P Volume Blower is designed to handle small quantities of air over a pressure range of 1/2 to 3 in. The housing is of heavy cast-iron; the wheel is of cast aluminum.

This blower can be hung from ceiling or suspended from side wall and fitted into any one of four different discharges quickly and easily.

It is particularly useful for exhausting fumes from chemical laboratories. It can also be used for handling light dust from polishing wheels

and grinders and is suitable for any small exhaust purpose where a considerable amount of resistance is caused by a long run of small duct. The 7 1/2 Type P Blower at 3400 r.p.m. can be satisfactorily used on single-fire blacksmith forges.

A.C., 60-Cycle, Single Phase

Size No.	110 Volts Each	220 Volts Each	Rated R.P.M.	C.F.M.	Watts Input	Shipping Wt., Lbs.
7 1/2 P	\$63.00	\$65.00	3400	225	200	62
10 P	76.00	78.00	1720	300	160	68
15 P	95.00	100.00	1720	450	250	115
20 P	252.00	258.50	1720	1310	850	285

A.C., 60-Cycle, 3 Phase

20 P	\$224.00	1720	1310	850	285
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A.C., 25-Cycle, Single Phase

10 P	\$83.00	\$94.50	1420	205	110	65
15 P	116.50	121.00	1420	375	160	105
20 P	285.50	291.00	1420	1000	490	245

D.C.

7 1/2 P	\$60.00	\$63.00	3400	225	200	62
10 P	78.00	82.00	1720	300	160	68
15 P	107.00	113.00	1720	450	250	115
20 P	202.00	210.00	1720	1310	850	285



Type B IIg Volume Blowers

Gasoline Engine Driven



Driven by a direct connected 4-cycle gasoline engine, blower is for ventilating where electricity is not available. Manholes, vats, tanks and other places can be ventilated with this portable blower which is complete-

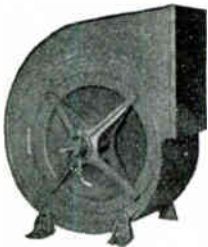
ly self-contained. Canvas hose is ordinarily used to convey the fresh air from blower to spot requiring ventilation.

The blower inlet is screened to prevent paper, leaves, etc. from entering. The outlet is fitted with a flange to accommodate a canvas hose. No batteries or other connections are required.

No.	B12	B15
Each	\$157.50	184.00
Capacity	cfm. 630	1200
Speed	rpm. 1750	1750
Hp.	1/8	1/2
Gas Consumption	pints per hour 1/8	1
Tank Capacity	gal. 1/4	1
Height Over All	inches 14 1/2	21
Width Over All	inches 16	18
Depth Over All	inches 13	23 1/2
Shipping Weight	pounds 95	125
Net Weight	pounds 60	90

IIg Type BW Universal Blowers

For Belt Drive



Sides of housing are of cast iron and the cast iron bearing bracket is recessed in the sheet metal bowl in blower's side. The multiblade wheel is overhung on the shaft which runs on ball bearings in cast iron bracket. This two bearing construction makes possible a completely unobstructed inlet.

Special Whiting ribbon steel blades of wheel have slight forward curve developing high air volume at low tip speeds and against comparatively high static pressures. Blades are spot welded to rims, and rim and blade assembly mounted on cast iron spider.

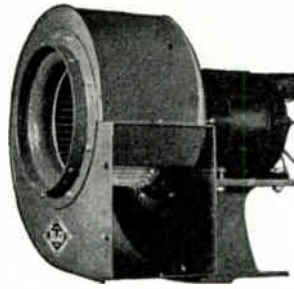
Ball bearings make these blowers suitable for any installation requiring quietness. Bearings are oversized and grease lubricated.

Angle of discharge and direction of rotation can be changed at any time.

Available in single width, single inlet and double width, double inlet types.

No.	Outlet Area Sq. Ft.	SINGLE WIDTH, SINGLE INLET		DOUBLE WIDTH, DOUBLE INLET	
		RPM.	Ship. Wt. Lb.	RPM.	Ship. Wt. Lb.
BW25	.8	1800	175	...	...
BW30	1.2	1500	225	...	...
BW35	1.7	1300	295	...	...
BW40	2.3	1100	425	...	...
BW45	3.0	1000	550	...	...
BW50	3.7	850	725	850	925
BW55	4.5	700	850	700	1075
BW60	5.4	600	1025	600	1275
BW70	7.5	500	1400	500	1825
BW80	9.9	400	1800	400	2375
BW90	12.6	350	2400	350	3200

Type B IIg Volume Blowers



Suitable for all kinds of small volume, low pressure installations. This blower combines high efficiency and low power consumption. Quiet and smooth running.

The housing and multi-blade wheel are die-cut steel. The wheel is carefully balanced. The inlet flange and the base which bears both housing and the direct connected motor, are cast iron. Discharge is universal.

60 Cycle A.C. and D.C.

Size	A.C.		D.C.		R.P.M.	H.P.	Free Air C.F.M.	Ship. Wt. Lbs.
	110 or 220 Volts 1-Phase	220 or 440 Volts 3-Phase	115 or *Less Regulator	230 Volts With Regulator				
B 9	\$47.00	**	\$63.00	\$69.50	1140	1/70	180	45
B 9	45.00	**	73.50	82.00	1750	1/20	275	55
B12	66.00	**	88.00	97.00	1140	1/20	410	75
†B12	55.00	**	94.50	105.00	1750	1/6	630	85
B15	105.00	**	113.50	126.00	855	1/10	600	120
B15	78.00	**	115.50	130.50	1140	1/7	790	120
†B15	112.00	\$146.00	147.00	191.00	1750	1/2	1200	130
B18	136.00	144.00	162.00	172.00	855	1/7	1000	160
B18	152.00	172.00	166.00	185.00	1140	1/3	1340	170
†B18	231.00	210.00	223.00	298.50	1750	1 1/4	2050	195
B21	202.00	164.00	225.00	241.50	855	1/3	1580	225
B21	230.00	198.00	248.00	321.50	1140	3/4	2100	240

*One-half h.p. and larger require starter or regulator.

**Use 220 volt, 1 phase unit and connect across 2 wires of the 3 phase line.

†These units should not be used for free air delivery where quietness is essential.

Performance Data in C.F.M. at Various Pressures

Size	R.P.M.	H.P.	Free Air	STATIC PRESSURE, INCHES			
				1/4	3/8	1/2	3/4
B 9	1140	1/70	180	145	100	...	...
B 9	†1425	1/30	230	200	170	120	...
B 9	1750	1/20	275	255	235	205	170
B12	1140	1/20	410	370	320	250	...
B12	†1425	1/10	515	480	450	400	350
B12	1750	1/6	630	610	580	550	515
B15	855	1/15	590	520	430	300	...
B15	1140	1/7	790	725	680	610	530
B15	†1425	1/3	980	940	900	860	810
B15	1750	1/2	1200	1175	1140	1100	1070
B18	†720	1/8	840	750	630	400	...
B18	855	1/7	1000	920	820	710	500
B18	1140	1/3	1340	1275	1210	1140	1070
B18	†1425	2/3	1670	1620	1570	1520	1470
B18	1750	1 1/4	2050	2000	1975	1935	1900
B21	†720	1/5	1330	1210	1100	930	600
B21	855	1/3	1580	1480	1380	1260	1130
B21	1140	3/4	2100	2030	1960	1880	1800
B21	†1425	1 1/2	2640	2580	2520	2460	2400

Size	R.P.M.	H.P.	Free Air	STATIC PRESSURE, INCHES				
				1	1 1/4	1 1/2	1 3/4	2
B9	1140	1/70	180	...	...	...	...	...
B9	†1425	1/30	230	...	...	...	...	...
B9	1750	1/20	275	...	...	...	...	...
B12	1140	1/20	410	...	...	...	...	...
B12	†1425	1/10	515	...	...	...	...	...
B12	1750	1/6	630	390	300	...	...	...
B15	855	1/15	590	...	...	...	...	...
B15	1140	1/7	790	...	...	...	...	...
B15	†1425	1/3	980	600	470	...	...	...
B15	1750	1/2	1200	940	900	780	600	...
B18	†720	1/8	840	...	...	...	...	...
B18	855	1/7	1000	...	...	...	...	...
B18	1140	1/3	1340	720	...	...	...	...
B18	†1425	2/3	1670	1280	1210	1030	...	...
B18	1750	1 1/4	2050	1770	1720	1610	1490	1360
B21	†720	1/5	1330	...	...	...	...	...
B21	855	1/3	1580	...	...	...	...	...
B21	1140	3/4	2100	1500	1400	1000	...	...
B21	†1425	1 1/2	2640	2200	2130	1980	1800	1570

†720 r.p.m. and 1425 r.p.m. on 25-cycle only.

Ilg Type B Universal Blowers
With Forward Curved Wheel



The motor is machined circular and held in a cast iron ring and recessed within the cast iron side of the blower in a sheet steel bowl. The multiblade wheel is mounted directly in the motor shaft. There is little overhang because the motor is recessed. This construction eliminates the inlet bearing, independent motor base, and alignment of motor and wheel. Mounted on 4 legs, the Ilg Blower is quickly installed; the universal discharge is possible by relocation of the legs.

All direct current blowers are furnished with speed regulators and covers.

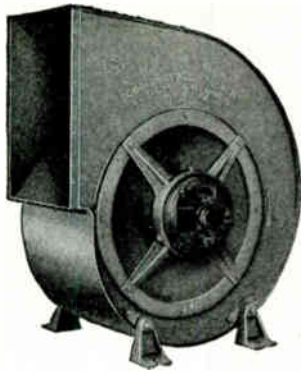
Give current, voltage, cycle, and phase—specify discharge arrangement on order.

Direct-Connected

Size	R.P.M.	A.C. 2 & 3 Phase 60 Cycle Constant Speed			D.C.			Single Phase, A.C. 1 Phase 60 Cycle Constant Speed		
		220 or 440 Volts	550 Volts	Ship. Wt. Lbs.	110 or 220 Volts	500 Volts	Ship. Wt. Lbs.	110 Volts	220 Volts	Ship. Wt. Lbs.
B25	685	\$194.50	\$215.00	220	\$283.50	\$304.50	240	\$267.00	\$221.50	250
B25	855	226.00	247.00	220	336.00	354.00	360	304.00	256.00	250
B25	1140	267.00	288.00	295	441.00	462.00	360			
B30	685	304.00	324.50	350	430.50	451.50	410	378.00	346.50	405
B30	855	335.00	356.00	380	505.00	526.00	410			
B30	1140	407.50	428.50	460	609.00	630.00	650			
B35	570	356.00	377.00	470	544.00	565.00	510	445.50	404.00	550
B35	685	378.00	399.00	470	668.00	689.00	670		434.00	550
B35	855	445.50	466.00	470	714.00	735.00	670			
B40	570	434.00	455.00	630	712.00	733.00	780			
B40	685	507.50	528.00	650	810.50	832.00	850		528.00	725
B40	855	567.00	598.50	650	1029.00	1165.50	925			
B45	490	543.00	574.50	750	802.00	823.00	990		604.00	850
B45	570	596.00	627.00	800	928.00	949.00	1050			850
B45	685	708.00	739.00	920	955.50	976.50	1050			
B50	490	690.00	720.00	955	934.50	966.00	1160		845.00	1040
B50	570	745.00	775.00	955	1092.00	1144.50	1410			
B55	425	767.00	798.00	1150	1005.00	1036.00	1560			
B55	570	950.00	981.00	1375	1113.00	1134.00	1830			
B60	380	883.00	913.50	1375	1000.00	1042.00	1850			
B60	490	1014.50	1056.00	1575	1328.00	1370.00	2050			
B70	340	1296.00	1338.00	2050	1483.00	1525.00	2500			
B70	380	1336.00	1377.50	2050	1496.00	1538.00	2500			
B70	425	1396.50	1438.50	2050	1640.00	1698.00	2750			
B80	285	1640.00	1687.00	2850	1714.00	1756.00	3200			
B80	340	1735.00	1782.00	2850	1848.00	1911.00	3625			
B90	245	1787.00	1833.00	3325	2310.00	2357.00	3750			
B90	285	1851.00	1914.00	3325	2504.00	2567.00	4150			
B90	310	2403.50	2466.50	3625	2830.00	2893.00	4550			

Speed, Capacity and Brake H.P. at Various Pressures—For 60 Cycle and D.C.

Size	R.P.M.	Wheel Diam. In.	STATIC PRESSURE, INCHES																			
			1/8		1/4		3/8		1/2		5/8		3/4		1		1 1/8					
			C.F.M.	H.P.	C.F.M.	H.P.	C.F.M.	H.P.	C.F.M.	H.P.	C.F.M.	H.P.	C.F.M.	H.P.	C.F.M.	H.P.	C.F.M.	H.P.				
B25	685	12 3/4	1750	.29	1580	.26	1400	.23														
B25	855	12 3/4	2265	.58	2135	.54	2000	.51	1860	.47	1715	.44										
B25	1140	12 3/4									2700	1.23	2600	1.18	2490	1.13	2390	1.09	2280	1.04		
B30	685	15 1/2	3310	.80	3110	.75	2910	.71	2690	.65	2455	.60										
B30	855	15 1/2									3550	1.32	3380	1.26	3200	1.19	3000	1.12	2795	1.04		
B30	1140	15 1/2																				
B35	570	18 1/4	3744	.71	3440	.66	3130	.60	2770	.54												
B35	685	18 1/4	4640	1.28	4395	1.20	4140	1.14	3880	1.06	3600	1.00	3285	.91								
B40	570	21	5890	1.49	5530	1.40	5180	1.32	4800	1.22	4432	1.13	3970	1.02								
B40	685	21									6340	2.33	6030	2.22	5720	2.15	5370	1.98	5000	1.85	4560	1.69
B40	855	21									8100	4.65	7920	4.51	7740	4.40	7470	4.25	7200	4.10		
B45	490	23 3/4	7330	1.72	6875	1.60	6400	1.51	5900	1.40	5070	1.21	4660	1.12								
B45	570	23 3/4	8720	2.75	8340	2.64	7940	2.52	7530	2.40	7080	2.25	6620	2.12								
B45	685	23 3/4									9300	4.40	8950	4.25	8620	4.09	8250	3.92	7850	3.74		
B50	490	26 1/2	10420	3.05	9900	2.90	9380	2.75	8850	2.60	8300	2.45	7680	2.26								
B50	570	26 1/2									10150	4.18	10000	4.00	9520	3.83	9000	3.50	8400	3.41		
B55	425	29 1/4	12180	3.32	11550	3.15	10850	2.99	10150	2.79	9370	2.58	8550	2.35								
B55	570	29 1/4									14680	7.15	14150	6.91	13620	6.66	13100	6.40	12520	6.14		
B60	380	32	14200	3.60	13400	3.40	12550	3.20	11700	3.00	10720	2.76	9600	2.49								
B60	490	32									16100	6.82	15450	6.55	14770	6.30	14070	6.00	13300	5.70		
B70	340	37 1/2	20720	5.80	19700	5.52	18550	5.21	17430	4.52	16230	4.60	14970	4.23								
B70	380	37 1/2									20400	7.18	19410	6.82	18400	6.48	17220	6.10	16000	5.68	14500	5.17
B70	425	37 1/2									23080	10.1	22200	9.75	21280	9.32	20250	8.91	19230	8.50		
B80	285	43	26100	6.70	24600	6.31	23050	5.92	21480	5.52	19800	5.10	17880	4.63								
B80	340	43									26820	9.90	25500	9.40	24130	8.90	22800	8.38	20790	7.70		
B90	245	48 1/2	32100	7.70	30150	7.25	28100	6.80	26000	6.30	23750	5.78	21000	5.12								
B90	285	48 1/2									31250	10.2	29420	9.66	27250	8.95	24800	8.17				
B90	310	48 1/2									35500	13.9	33900	13.2	32150	12.6	30350	11.9	28300	11.2		



Type BC 11g Blowers

With Backward Curved Non-Overloading Wheel

Non-overloading characteristics have been brought to a high state of development in the 11g Type BC Blowers. The motor load remains constant for a large range of air volume over a considerable change in static pressure.

This feature is of distinct value to the architect, the engineer, and contractor in installations where the actual resistance in the system does not agree with the calculated figure, for there is not a chance of a motor overload in case the resistance is less than calculated.

Blower has high efficiency available in direct-connected and belted single width, single inlet types and belted double width, double inlet type. The discharge is universal.

Enclosed speed regulators furnished with direct current blowers.

For frequencies other than 60 cycle add 5%.

Size	R.P.M.	60 CYCLE A.C. Direct Connected										*Belted			
		2 & 3 PHASE		1 PHASE		Ship. Wt. Lbs.	D.C.		Ship. Wt. Lbs.	SINGLE WIDTH SINGLE INLET		DOUBLE WIDTH DOUBLE INLET			
		220 or 440 Volts	550 Volts	110 Volts	220 Volts		110 or 220 Volts	550 Volts		Each	Wt. Lbs.	Each	Wt. Lbs.		
BC25	1140	\$210.00	\$226.00	\$259.00	\$236.50	220	\$225.00	\$240.50	230						
BC25	1750	215.00	231.00	314.00	252.00	220	301.00	317.00	230	\$117.50	175				
BC30	1140	230.00	247.00	309.00	260.00	300	254.00	270.00	310						
BC30	1750	235.50	251.00		297.00	300	261.50	277.00	330	143.00	225				
BC35	855	250.00	271.00	329.00	279.00	350	281.50	302.00	360						
BC35	1140	257.50	278.00	398.00	301.00	350	383.00	404.00	375						
BC35	1750	425.50				480	634.00	655.00	530	185.00	295				
BC40	855	278.00	346.00	427.00	326.00	500	408.50	429.50	525						
BC40	1140	372.00	393.00		446.00	530	610.00	631.00	580						
BC40	1750	543.00	564.00			625	883.00	904.00	725	231.00	425				
BC45	685	392.00	413.00		339.00	650	586.00	607.00	700						
BC45	855	398.00	419.00		462.00	650	612.00	633.00	700						
BC45	1140	483.00				750	738.00	759.00	880	273.00	550				
BC50	685	490.00	504.00		555.50	800	634.00	655.00	850						
BC50	855	506.00	527.00		607.00	875	828.00	848.50	1000						
BC50	1140	591.00	612.00			900	1042.00	1073.00	1090	330.00	725	\$609.00	925		
BC55	570	472.50	493.50		530.00	950	672.00	693.00	1000						
BC55	685	511.00	532.00		601.00	950	702.00	723.50	1000						
BC55	855	525.00	546.00			980	827.00	848.50	1080	378.00	850	708.00	1075		
BC60	570	508.00	529.00		579.00	1200	820.00	841.00	1330						
BC60	685	546.00	567.00		682.50	1200	956.00	976.50	1420						
BC60	855	626.00	657.50			1225	1391.00	1423.00	1580	426.50	1025	820.00	1275		
BC70	570	904.00	935.00			1600	1786.00	1210.00	1760						
BC70	685	1034.00	1066.00			1625	2160.00	1641.00	1920						
BC70	855	1347.00	1379.00			1850	2620.00	2302.00	2450	500.00	1400	1034.00	1825		
BC80	490	1222.00	1244.00			2000	1811.00	1843.00	2295						
BC80	570	1360.00	1391.00			2100	2011.00	2042.00	2455						
BC80	685	1537.00	1554.00			2250	2394.00	2436.00	2850	650.00	1800	1364.00	2375		
BC90	490	1827.00	1858.50			2700	2680.00	2722.00	3300						
BC90	570	1846.00	1888.00			3000	2726.00	2768.00	3300						
BC90	685	1871.00	1913.00			3000	3052.00	3105.00	3500	796.00	2400	1770.50	3200		

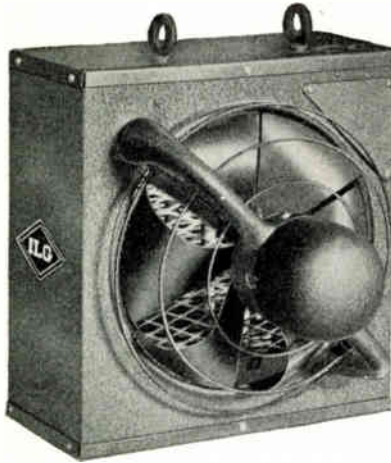
* Motor and drive not included.

Speed, Capacity and Brake H.P. at Various Pressures for 60 Cy. and D.C.—Direct Connected

Size	R.P.M.	STATIC PRESSURE, INCHES																				
		1/4		1/2		3/4		1		1 1/4		1 1/2		1 3/4		2		2 1/2		3		
		C.F.M.	H.P.	C.F.M.	H.P.	C.F.M.	H.P.	C.F.M.	H.P.	C.F.M.	H.P.	C.F.M.	H.P.	C.F.M.	H.P.	C.F.M.	H.P.	C.F.M.	H.P.	C.F.M.	H.P.	
BC25	1140	1050	.10	825	.10	550	.10															
BC25	1750	1790	.37	1650	.37	1520	.37	1375	.37	1225	.37	1065	.37	860	.36							
BC30	1140	2010	.28	1760	.28	1480	.28	1200	.27													
BC30	1750	3300	.99	3135	.99	2960	.99	2785	.99	2610	.99	2440	.99	2260	.99	2090	.99	1695	.98			
BC35	855	2350	.30	1950	.30	1500	.25															
BC35	1140	3400	.60	3100	.60	2800	.60	2475	.60	2150	.60	1750	.58									
BC35	1750	5470	2.22	5300	2.22	5100	2.22	4900	2.22	4700	2.22	4500	2.22	4300	2.22	4080	2.22	3650	2.22	3225	2.22	
BC40	855	3750	.55	3280	.55	2800	.55	2250	.55	1300	.45											
BC40	1140	5300	1.25	4950	1.25	4600	1.25	4240	1.25	3850	1.25	3480	1.25	3100	1.25	2625	1.24					
BC40	1750	8375	4.52	8160	4.52	7950	4.52	7720	4.52	7500	4.52	7260	4.52	7050	4.52	6800	4.52	6350	4.52	5850	4.52	
BC45	685	4220	.50	3600	.50	2850	.50	1800	.46													
BC45	855	5570	.98	5050	.98	4500	.98	3950	.98	3400	.98	2500	.92									
BC45	1140	7700	2.31	7300	2.31	6900	2.31	6500	2.31	6100	2.31	5660	2.31	5250	2.31	4850	2.31	3900	2.31			
BC50	685	6050	.85	5300	.85	4500	.85	3750	.85	2000	.70											
BC50	855	7850	1.65	7250	1.65	6660	1.65	6100	1.65	5450	1.65	4850	1.65	4050	1.65							
BC50	1140	10780	3.93	10350	3.93	9890	3.93	9450	3.93	9000	3.93	8500	3.93	8070	3.93	7600	3.93	6700	3.93	5650	3.9	
BC55	570	6600	.82	5600	.82	4580	.82	3300	.82													
BC55	685	8300	1.42	7500	1.42	6650	1.42	5800	1.42	4900	1.42	3600	1.32									
BC55	855	10700	2.77	10000	2.77	9370	2.77	8700	2.77	8010	2.77	7350	2.77	6690	2.77	6000	2.77					
BC60	570	8900	1.27	7750	1.27	6600	1.27	5500	1.27	3800	1.15											
BC60	685	11020	2.22	10100	2.22	9200	2.22	8250	2.22	7300	2.22	6400	2.22	5100	2.10							
BC60	855	14200	4.30	13500	4.30	12750	4.30	12000	4.30	11250	4.30	10500	4.30	9750	4.30	9000	4.30	7400	4.30			
BC70	570	14700	2.85	13400	2.85	12200	2.85	10800	2.85	9500	2.85	8150	2.85	5500	2.50							
BC70	685	18150	4.85	17100	4.85	16000	4.85	14900	4.85	13800	4.85	12800	4.85	11700	4.85	10600	4.85	6500	4.2			
BC70	855	23180	9.55	22250	9.55	21400	9.55	20500	9.55	19650	9.55	18800	9.55	17950	9.55	17100	9.55	15300	9.55	13600	9.55	
BC80	490	19100	3.57	17350	3.57	15600	3.57	13900	3.57	12150	3.57	10100	3.57									
BC80	570	22700	5.60	21250	5.60	19800	5.60	18300	5.60	16800	5.60	15300	5.60	13800	5.60	12100	5.60					
BC80	685	27900	9.70	26600	9.70	25400	9.70	24150	9.70	22900	9.70	21700	9.70	20400	9.70	19200	9.70	16750	9.70	13750	9.70	
BC90	490	27700	6.50	25800	6.50	23900	6.50	22000	6.50	20000	6.50	18000	6.50	16000	6.50	14000	6.40					
BC90	570	33000	10.20	31300	10.20	29600	10.20	28000	10.20	26200	10.20	24500	10.20	22800	10.20	21100	10.20	17600	10.20			
BC90	685	40250	17.60	38800	17.60	37500	17.60	36000	17.60	34700	17.60	33200	17.60	31800	17.60	30500	17.60	27600	17.60	24800	17.60	

Type HT IIg Electric Unit Heaters

No Controller Is Required



For space heating or drying. Eye bolts provided for suspension of unit.

Heating element is non-overheating and interchangeable. Its temperature, whether fan is running or not, does not exceed 400°F. Self-adjusting to temperature, having a slightly higher kilowatt capacity in a cold room than in a warm room.

Suitable for connection to 110 or 220 volts single-phase and to 220 volts 3-phase.

Dimensions over all: Width, 12 $\frac{3}{8}$ inches; height, 15 inches; depth, 12 $\frac{1}{4}$ inches. Dimensions of case only excluding fan and hanger bolts: Width, 12 $\frac{3}{8}$ inches; height, 13 $\frac{3}{8}$ inches; depth, 5 $\frac{7}{8}$ inches; distance between eye bolts, 10 inches. Speed, 1550 rpm.

Complete unit is finished in brown crinkle enamel.

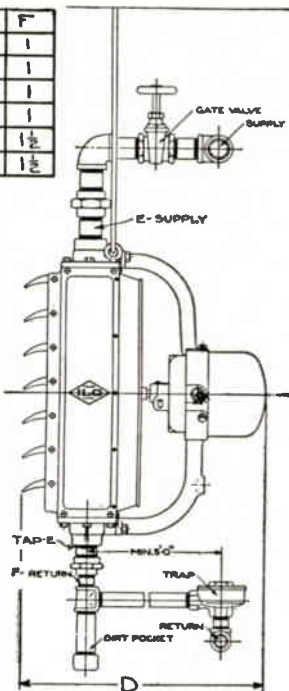
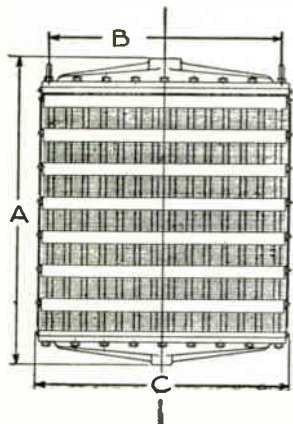
When ordering, specify exact voltage. Units for direct current and special voltages can also be supplied.

Shipping weight, 42 pounds. Net weight, 20 pounds.

No.	110HT	210HT	310HT	410HT
Each	\$44.50	48.50	55.00	59.00
Capacity.....kw.	1 $\frac{1}{2}$	2	3	4
CFM.....	250	250	400	400
Capacity.....Btu.	5,100	6,800	10,200	13,600

IIg Unit Heaters

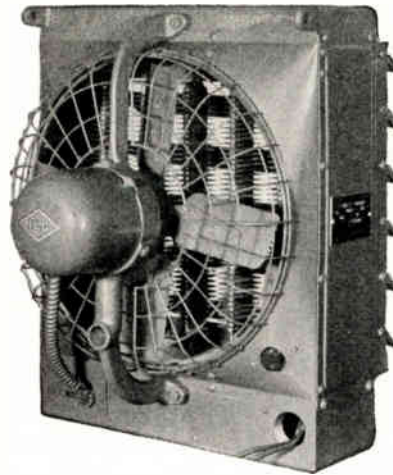
SIZE	A	B	C	D	E	F
10U	18	11 $\frac{1}{4}$	13	14	1 $\frac{1}{4}$	1
13U	21	14 $\frac{1}{4}$	15 $\frac{1}{2}$	18 $\frac{1}{2}$	1 $\frac{1}{2}$	1
17U	24	17	18 $\frac{1}{2}$	19 $\frac{1}{4}$	1 $\frac{1}{2}$	1
19U	27	20	21 $\frac{1}{2}$	21 $\frac{1}{4}$	1 $\frac{1}{2}$	1
25U	35	20	27 $\frac{3}{4}$	28	2 $\frac{1}{2}$	1 $\frac{1}{2}$
31U	42	26	33 $\frac{1}{2}$	31	2 $\frac{1}{2}$	1 $\frac{1}{2}$



Size	A	B	DIMENSIONS, INCHES			
			C	D	E	F
10U	18	11 $\frac{1}{4}$	13	14	1 $\frac{1}{4}$	1
13U	21	14 $\frac{1}{4}$	15 $\frac{1}{2}$	18 $\frac{1}{2}$	1 $\frac{1}{4}$	1
17U	24	17	18 $\frac{1}{2}$	19 $\frac{1}{4}$	1 $\frac{1}{2}$	1
19U	27	20	21 $\frac{1}{2}$	21 $\frac{1}{4}$	1 $\frac{1}{2}$	1
25U	35	20	27 $\frac{3}{4}$	28	2 $\frac{1}{2}$	1 $\frac{1}{2}$
31U	42	26	33 $\frac{1}{2}$	31	2 $\frac{1}{2}$	1 $\frac{1}{2}$

IIg Electric Unit Heaters

Nos. 513 to 4819



Rear View

Nos. 513 to 4819 can be furnished only for those currents for which controllers are listed since controller is necessary to obtain operation of thermal safety switch on unit heater.

Controller equipment includes enclosed magnetic starter and remote control switch.

No.	A.C. or D.C.		Cap. KW.	RPM.	CFM.	Cap. Btu.	Frame Size	Ship. Wt. Lb.
	110 or 220 Volts Each	440 or 550 Volts Each						
513	\$70.50	.....	5	1140	335	17100	13EU	75
613	82.00	\$94.00	6	1140	465	20500	13EU	75
913	109.50	125.00	9	1140	600	30800	13EU	80
1217	126.00	144.00	12	855	800	41000	17EU	125
1517	141.00	162.00	15	855	1000	51200	17EU	125
1819	170.00	193.00	18	855	1200	61500	19EU	240
2419	206.00	235.00	24	855	1600	81000	19EU	240
3019	223.00	254.00	30	1140	2000	102500	19EU	245
3619	250.00	286.00	36	1140	2400	123000	19EU	245
4819	304.00	346.00	48	1140	3200	164000	19EU	245

Above prices include automatic thermal safety switch as standard equipment.

***Prices on Controller Equipment**

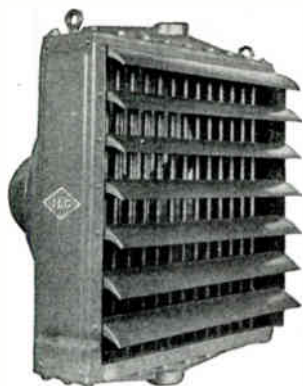
KW. Cap.	†1 PHASE 60 CYCLE						†2-3 PHASE 60 CYCLE	
	110 Volts		220 Volts		220 Volts		220 Volts	
	No.	Each	No.	Each	No.	Each	No.	Each
5	H2719592	\$35.00	H2329592	\$21.00	.....	.....	.....	.....
6	H579592	58.00	H2729592	35.00	H1849592	\$22.00	.....	.....
9	H579592	58.00	H2729592	35.00	H1849592	22.00	.....	.....
12	H1359592	134.50	H589592	61.00	H2849592	37.00	.....	.....
15	H1359592	134.50	H589592	61.00	H2849592	37.00	.....	.....
18	H1999592	241.50	H589592	61.00	H109592	62.00	.....	.....
24	H1999592	241.50	H1369592	134.50	H109592	62.00	.....	.....
30	.....	.....	.....	.....	H109592	62.00	.....	.....
36	.....	.....	.....	.....	H149592	143.00	.....	.....
48	.....	.....	.....	.....	†	.....	.....	.....
No.	†2-3 PHASE 60 CYCLE				D.C.			
	440 or 550 Volts		220 Volts		220 Volts		550 Volts	
	No.	Each	No.	Each	No.	Each	No.	Each
5	.....	.....	H566005	\$72.50	H456005	\$58.00	.....	.....
6	H1859592	\$22.00	H566005	72.50	H456005	58.00	.....	.....
9	H1859592	22.00	H566005	72.50	H456005	58.00	.....	.....
12	H1859592	22.00	H596005	92.50	H456005	58.00	.....	.....
15	H1859592	22.00	H596005	92.50	.....	.....	.....	.....
18	H2859592	37.00	H596005	92.50	.....	.....	.....	.....
24	H2859592	37.00	H596005	92.50	.....	.....	.....	.....
30	H2859592	37.00	H476005	128.00	.....	.....	.....	.....
36	H119592	62.00	H476005	128.00	.....	.....	.....	.....
48	†	.....	.....	.....	.....	.....	.....	.....

*No. 10250H289 pilot switch is included in the controller prices and should be specified on the order.

†25, 30, 40, and 50-cycle control equipment available at same price.

‡Upon application.

Ilg Steam Unit Heaters



Powerful Ilg self-cooled motor propeller fan enables a stream of warm air to be concentrated at the floor level and minimizes heat loss above the working zone. Ordinarily suspended by eye bolts 7 or 8 feet from the floor.

Can be operated manually, by electric thermostat, or steam regulator. Uniformity of design and construction assures balanced performance.

Controllers: Single-phase 2-speed motors are equipped with controllers having 2 speeds and an off position; single-phase 3-speed motors are equipped with controllers having 3 speeds and an off position; 2-speed controllers are available for 2 and 3-phase motors in each speed as extra equipment; variable speed d.c. motors are equipped with enclosed speed regulators.

Unit heater prices include fan, motor, casing, individually adjusted air deflectors, and heating element. Speed regulator is included where specifically stated. No air valves or other accessories are included.

Size	R.P.M.	A.C.			D.C.		B.T.U.	Leaving Temp. Deg. F.	*C.F.M.	†E.D.R.	Conden-sation	Wt. Lbs.	
		1-Phase, 110 or 220 Volts 60-Cycle	2-Speed Each	3-Speed Each	2-3-Phase 220 or 440 V. Constant Speed Each	110 or 220 Volts Constant Speed Each							Variable Speed Each
10-1S6	1550	\$42.00	.....	\$48.00	.....	\$45.00	\$48.00	18600	111	385	77.5	18	75
10-S6	1550	60.00	.....	69.00	.....	61.00	69.00	28400	134	385	118	30	75
13-G6	1140	67.00	.....	85.00	.....	73.00	85.00	37000	134	460	154	38	130
13-D6	1140	74.00	\$82.00	99.00	.....	82.00	99.00	47000	132	600	196	49	130
13-E6	855	80.00	.....	.....	.....	.....	.....	51000	134	640	213	53	130
13-E6	1140	80.00	89.00	104.00	.....	89.00	104.00	60000	126	850	250	62	130
13-H6	855	85.00	.....	.....	.....	.....	.....	57800	131	750	240	60	130
13-H6	1140	85.00	95.00	109.00	.....	95.00	109.00	72500	125	1000	310	75	130
13-F6	1750	91.00	101.00	113.00	.....	101.00	113.00	87000	120	1300	373	91	140
17-D6	855	91.00	.....	.....	.....	.....	.....	68500	137	825	285	71	180
17-D6	1140	91.00	100.00	113.00	\$96.00	100.00	113.00	84000	131	1100	350	87	180
17-T6	855	95.00	.....	.....	.....	.....	.....	79000	133	1000	329	82	185
17-T6	1140	95.00	106.00	118.00	99.00	106.00	118.00	100000	128	1350	417	104	185
17-H6	855	99.00	.....	.....	.....	.....	.....	100000	128	1350	417	104	195
17-H6	1140	99.00	110.00	123.00	103.00	110.00	123.00	120000	122	1800	500	124	195
17-F6	1750	104.00	116.00	127.00	106.00	116.00	127.00	142000	114	2500	592	147	205
19-D6	855	104.00	.....	.....	.....	.....	.....	105500	131	1500	440	110	220
19-D6	1140	104.00	115.00	127.00	106.00	115.00	127.00	140000	125	2000	584	145	220
19-E6	855	110.00	.....	.....	.....	.....	.....	135000	127	1900	563	140	225
19-E6	1140	110.00	121.00	134.00	112.00	121.00	134.00	162000	123	2400	675	168	225
19-H6	855	124.00	.....	.....	.....	.....	.....	153000	124	2250	638	159	230
19-H6	1140	124.00	134.00	149.00	124.00	134.00	149.00	186000	119	3000	776	193	230
19-F6	1750	140.00	151.00	168.00	140.00	151.00	168.00	210000	112	4000	876	217	284
25-D6	685	144.00	.....	.....	.....	.....	.....	182000	133	2310	760	189	440
25-D6	855	144.00	155.00	173.00	144.00	155.00	173.00	216000	129	2900	900	224	440
25-E6	685	167.00	.....	.....	.....	.....	.....	217000	128	2960	905	225	440
25-E6	855	167.00	180.00	200.00	167.00	180.00	200.00	250000	123	3710	1040	259	440
25-F6	1140	184.00	.....	220.00	184.00	198.00	220.00	275000	118	4250	1146	285	460
19-2-E6	855	221.00	.....	.....	.....	.....	.....	270000	127	3800	1126	280	450
19-2-E6	1140	221.00	236.00	264.00	216.00	236.00	264.00	324000	123	4800	1350	336	450
19-2-H6	855	263.00	.....	.....	.....	.....	.....	306000	124	4500	1250	310	450
19-2-H6	1140	263.00	280.00	310.00	247.00	280.00	310.00	372000	119	6000	1500	363	450
19-2-F6	1750	306.00	325.00	357.00	280.00	325.00	357.00	420000	112	8000	1750	434	500
31-D6	685	188.00	.....	.....	187.00	.....	.....	238000	137	2850	993	247	540
31-D6	855	188.00	201.00	224.00	187.00	201.00	224.00	280000	132	3560	1167	290	540
31-E6	685	228.00	.....	.....	220.00	.....	.....	288000	132	3700	1200	298	540
31-E6	855	228.00	244.00	271.00	220.00	244.00	271.00	332000	126	4630	1382	344	540
31-H6	685	284.00	.....	.....	264.00	.....	.....	332000	127	4750	1382	344	540
31-H6	855	284.00	300.00	332.00	264.00	300.00	332.00	394000	123	5800	1641	407	540
31-F6	1140	318.00	.....	.....	290.00	336.00	367.00	436000	119	6900	1818	452	560

Net Extra for DeLuxe Units with Color Finish

Unit No.	10	13	17	19	25	19-2	31
Each.	\$4.00	5.00	7.50	9.00	15.00	18.00	23.00

Ratings apply only to recirculation and free discharge; *Cubic feet per minute of standard air at 70° F. and standard basis of rating (2 pounds steam pressure and 60° F. entering air); †Equivalent direct radiation at standard basis of rating.

For constant speed units equipped with explosion proof motors, add 10%. Prices on variable speed explosion proof motors on application. Explosion proof motors are not available for No. 10 and No. 13 series excepting the No. 13 for single phase which carries an extra of \$19.00.

For 25-cycle, add 10% to price of 60-cycle unit of nearest r.p.m. Where 50-cycle motors are required, use 60-cycle prices.

Where steam pressure is referred to as a condition of rating, it is meant to be the gauge pressure maintained on the heating surface; and to determine the pressure required at the boiler a suitable line drop must be allowed for.

Where heaters are to handle air at temperatures below freezing, it is recommended that a minimum pressure of 5 pounds gauge should be maintained on the heating surface.

G-E Natural-Convection Type Unit Heaters

Horizontal Type

A convenient, easily-installed heater for heating out-of-the-way places.

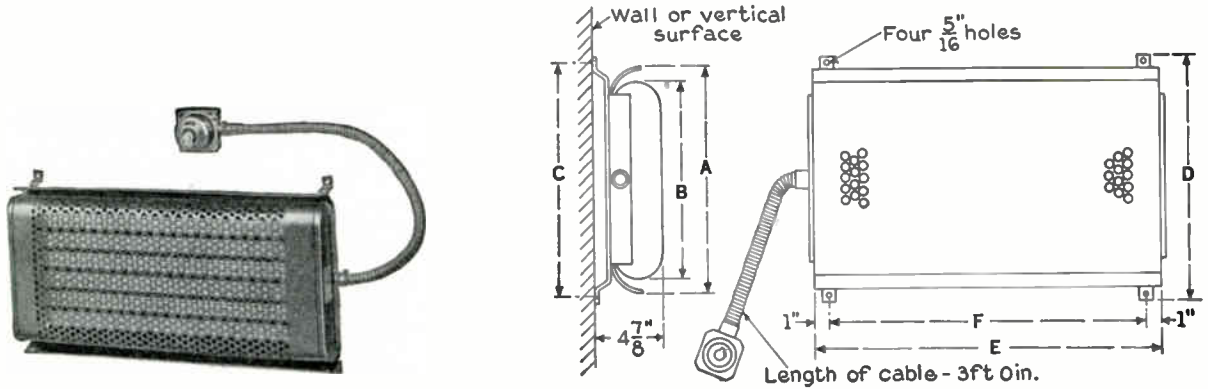
Common applications: substations, valve houses, pump houses, warehouses, crane cabs, airplane hangars, electric locomotives, blower rooms, repair shops, service stations, laboratories, garages, scale rooms, watchmen's houses, elevators, drying rooms, waiting stations, and ticket booths.

Free air circulation provides maximum heat. Heater is easily installed, simply mount on wall or floor and connect to power line. Easily moved from one job to another.

Heat is available at the turn of the switch. The 3-heat switch provides simple regulation of temperature and economy of operation.

Heater consists of a number of G-E Strip Heaters mounted in a perforated, pressed-steel case with heat-resisting painted finish.

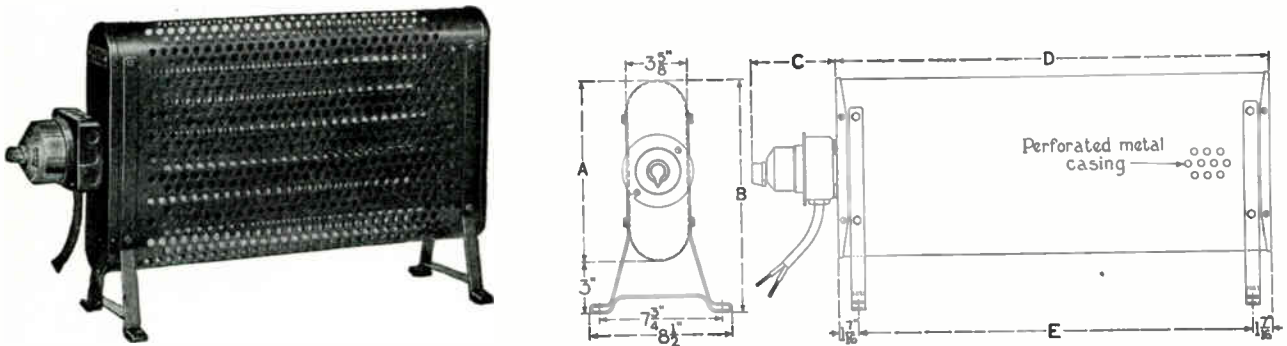
Wall-Mounted Model



Designed for mounting directly on wall with main axis horizontal. Can be mounted with cable emerging from either right or left end. Equipped with heat baffles to prevent overheating and scorching of wall surfaces.

Watts	With 3-Ft. Armored Cable and 3-Heat Snap Switch				Without Armored Cable and Switch				DIMENSIONS, INCHES						Approximate Shipping Wt. Lb.
	No. 115 Volts	No. 230 Volts	Each	440 Volts No. Each	No. 115 Volts	No. 230 Volts	440 Volts No. Each	A	B	C	D	E	F		
1000	2A133	2A133G2	\$20.00	2A195 \$24.00	2A134	2A134G2	2A156 \$17.00	9 1/2	7 3/4	10 3/8	11 1/4	25 3/4	23 3/4	22	
2000	2A135	2A135G2	27.00	2A164 31.00	2A136	2A136G2	2A157 23.00	12 1/4	10 1/2	13 1/8	14	25 3/4	23 3/4	32	
3000	.....	2A137	34.00	2A165 38.00	.....	2A138	2A158 29.00	16	14 1/4	16 7/8	17 3/4	25 3/4	23 3/4	40
4500	.....	2A139	45.00	2A166 49.00	.....	2A140	2A159 39.00	16	14 1/4	16 7/8	17 3/4	32 3/8	30 3/8	50

Floor-Mounted Model



Each heater is equipped with a 3-heat snap switch mounted on one end and a 10-foot rubber-covered heater cord.

Watts	No. 115 Volts		Each	440 Volts No. Each		DIMENSIONS, INCHES					Approximate Shipping Weight Pounds
	No. 230 Volts	Each		No. 230 Volts	Each	A	B	C	D	E	
1000	54X146	54X147	\$20.00	2A196	\$24.00	7 3/4	10 3/4	4 1/4	25 5/8	22 3/4	25
2000	2A194	54X149	27.00	2A112	31.00	10 7/16	13 7/16	5	25 5/8	22 3/4	33
3000	.....	54X151	34.00	2A113	38.00	14 1/4	17 1/4	5 1/4	25 5/8	22 3/4	40
4500	.....	2A168	45.00	2A114	49.00	14 1/4	17 1/4	5 1/4	32 1/4	29 3/8	50

G-E Forced-Convection Type Heaters

50-60 Cycles, A.C.



Portable Model

Available in two models: portable model, primarily for floor mounting; suspension model, for wall or ceiling mounting.

HEATING UNIT. Equipped with G-E Calrod Unit with strong radiating fins that multiply radiating surface of the Calrod. These fins are electric-furnace brazed on Calrod to provide maximum heat-transfer efficiency.

FAN. With G-E aphonic pressure-type fan with matching outlet orifice. Provides efficient and quiet operation.

MOTOR. A G-E totally-enclosed motor with sleeve bearings. Motor is protected against direct radiation from heating units by an ingenious baffle. Cool air is drawn over the motor frame at all times through the space between motor and the baffle.

AUTOMATIC PROTECTION AGAINST OVERHEATING. Heaters



Suspension Models

rated under 10 kilowatts have a convenient reset button located on outside of case. On heaters rated 10 kilowatts and over, remote push-button control is used, and the push-button provides the necessary reset feature.

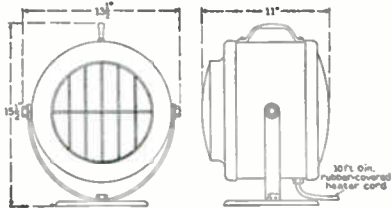
HOUSING. Heater may be directed upward or downward as much as 30° from horizontal, to serve required area. The absence of louvers allows free flow of air.

WIDE UTILITY. The two smaller sizes of heaters are so designed that they can be used as fans during hot weather.

To operate motor and fan independently of heating unit, the 2, 3, and 4-kw. heaters are provided with tumbler switch mounted on casing. On the 5 and 7.5-kw. heaters, fan-motor leads are brought out so that fan can be connected to manual switch.

¶Portable Model—For Floor Mounting

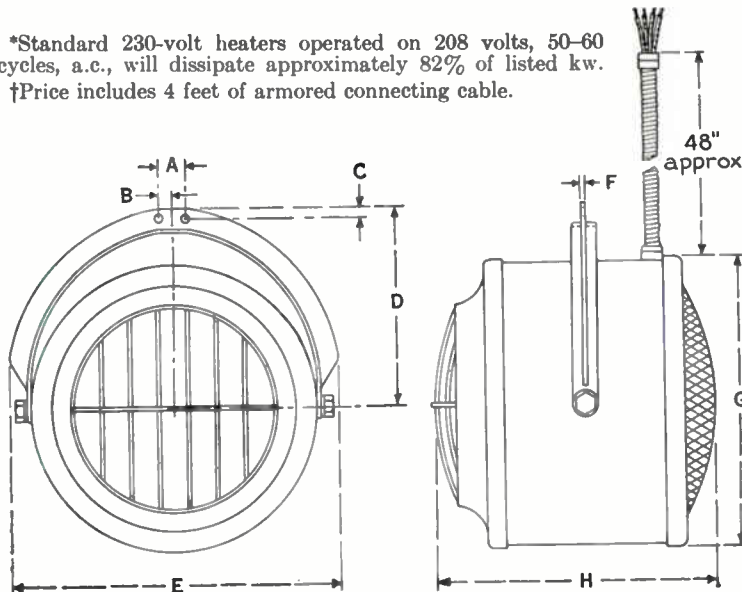
Can be arranged for suspension mounting. Unbolt foot pedestal and supporting arm and readjust arm so that it will be 180° from standard location.



APPROX. CONDITIONS UNDER NORMAL OPERATION										
Kw.	No.		Each	Btu. per Hr.	E.Q.R. at 240 Btu. per Sq. Ft.	Aver. Velocity Air per Min. Ft. at Outlet	Air Cu. Ft. per Min. Temp.	TEMP. DEGREES F.		Approx. Ship. Wt. Lb.
	115 Volts Sgl.-Ph.	*230 Volts Sgl.-Ph.						In-let	Out-let	
2	2A174G31	2A174G30	\$42.00	6,824	28.4	710	200	70	105	40
3	2A175G23	2A175G30	48.00	10,236	42.7	730	206	70	120	43
4	.....	2A176G30	54.00	13,648	56.9	750	212	70	135	46

§Suspension Model—For Wall or Ceiling Mounting

*Standard 230-volt heaters operated on 208 volts, 50-60 cycles, a.c., will dissipate approximately 82% of listed kw.
 †Price includes 4 feet of armored connecting cable.



Kw.	No.		†Each	Approx. Ship. Wt. Lb.
	*230 Volts Sgl.-Ph.	*230 Volts 3-Ph.		
5.0	2A177G27	.....	\$75.00	80
7.5	2A178G27	.....	85.00	90
10.0	.....	2A201	125.00	140
12.5	.....	2A202	135.00	150
15.0	.....	2A203	145.00	160

Approximate Conditions Under Normal Operation

Kw.	Btu. per Hr.	E.Q.R. at 240 Btu. per Sq. Ft.	Aver. Velocity Air per Min. Ft. at Outlet	Vol. Air Cu. Ft. per Min. Temp.	TEMP. DEGREES F.	
					In-let	Out-let
5.0	17,060	71.1	894	536	70	115
7.5	25,590	106.4	916	550	70	130
10.0	34,120	142.0	1725	1540	70	100
12.5	42,650	178.0	1753	1565	70	106
15.5	51,180	213.0	1782	1590	70	112

Dimensions

Kw.	DIMENSIONS, INCHES							
	A	B	C	D	E	F	G	H
5.0	1 1/2	3/4	1/2	10 5/16	17 1/4	3/16	15	13 1/4
7.5	1 1/2	3/4	1/2	10 5/16	17 1/4	3/16	15	13 1/4
10.0	2	1	5/8	14 3/8	25 1/8	1/4	22	19 1/2
12.5	2	1	5/8	14 3/8	25 1/8	1/4	22	19 1/2
15.0	2	1	5/8	14 3/8	25 1/8	1/4	22	19 1/2

†Special unit heaters can be supplied for connection of both fan motor and heating elements to circuits listed: 50-60 cycles, 115 volts, single-phase, a.c. (special 4-kw. heater); 25 cycles, 115 or 230 volts, single-phase, a.c.; 25, 50, or 60 cycles, 208 or 440 volts, single-phase, a.c.; d.c., 115 volts, 2 and 3 kw.; d.c., 230 volts, 2, 3, and 4 kw. Add \$10.00 to standard heater.

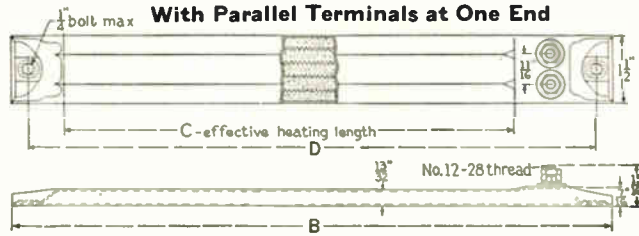
§Special unit heaters can be supplied for connection of both fan motor and heating elements to circuits listed below. The 5 and 7.5-kw. heaters will be single-phase only; the 10, 12.5, and 15-kw. heaters will be 3-phase only, 25 cycles, a.c., 230 volts; 25, 50, or 60 cycles, a.c., 208 or 440 volts; d.c., 230 or 250 volts. Add \$10.00 to standard heater.

G-E Strip Heaters

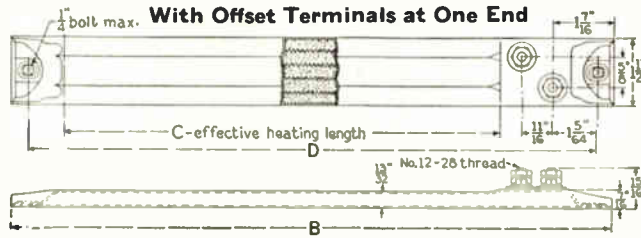


Serves as an air and clamp-on heater. A few of the common applications are for: process machinery, drying ovens, warming tables, glue tables, water baths, drying cabinets,

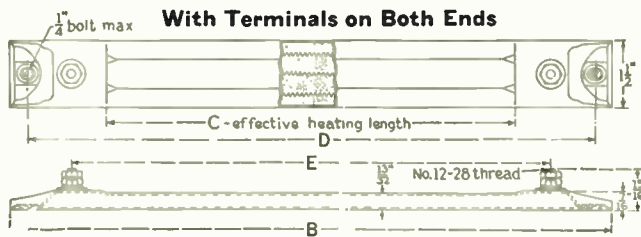
pipe lines, incubators, valve and pump houses, etc. Features: uniform heat distribution; ridged construction that withstands vibration; compressed insulation.



Steel Sheath				Porcelain-Enameled Steel Sheath				DIMENSIONS, INCHES				Approx. Ship. Wt. Lb.
No.	MAX. ALLOWABLE SHEATH TEMP. 750°F.	Each	Watts	No.	MAX. ALLOWABLE SHEATH TEMP. 1200°F.	Each	Watts	B	C	D	E	
63X527	\$3.25	1000	230	2A249	\$4.10	1500	230	35 1/2	32	34 3/4	.....	3
63X526	2.75	750	230	2A248	3.55	1000	230	30 1/8	26 3/8	29 3/8	.....	3
51X340	2.25	500	115	2A247	2.95	750	115	23 1/2	20	22 3/4	.....	2
51X341	2.25	500	230	2A247G2	2.95	750	230	23 1/2	20	22 3/4	.....	2
2A150	2.25	500	275	.....	.....	.....	.....	23 1/2	20	22 3/4	.....	2
.....	.....	.....	.....	2A220	2.95	500	115	23 1/2	20	22 3/4	.....	2
.....	.....	.....	.....	2A220G2	2.95	500	230	23 1/2	20	22 3/4	.....	2
51X338	2.10	350	115	2A246	2.70	500	115	17 5/8	14 1/8	16 1/8	.....	2
51X339	2.10	350	230	2A246G2	2.70	500	230	17 5/8	14 1/8	16 1/8	.....	2
51X336	1.90	250	115	2A245	2.40	350	115	11 3/4	8 1/4	11	.....	2
51X337	1.90	250	230	2A245G2	2.40	350	230	11 3/4	8 1/4	11	.....	2
51X334	1.80	150	115	2A244	2.20	200	115	7	3 1/2	6 1/4	.....	1
51X335	1.80	150	230	2A244G2	2.20	200	230	7	3 1/2	6 1/4	.....	1



2A155	\$3.25	1000	230	2A235	\$4.10	1500	230	35 1/2	31 1/2	34 3/4	.....	3
.....	.....	.....	.....	2A260	4.10	1000	230	35 1/2	31 1/2	34 3/4	.....	3
2A154	2.75	750	230	2A234	3.55	1000	230	30 1/8	26 1/8	29 3/8	.....	3
.....	.....	.....	.....	2A259	3.55	750	230	30 1/8	26 1/8	29 3/8	.....	3
2A153	2.25	500	115	2A233	2.95	750	115	23 1/2	19 1/2	22 3/4	.....	2
2A153G2	2.25	500	230	2A233G2	2.95	750	230	23 1/2	19 1/2	22 3/4	.....	2
.....	.....	.....	.....	2A258	2.95	500	115	23 1/2	19 1/2	22 3/4	.....	2
.....	.....	.....	.....	2A258G2	2.95	500	230	23 1/2	19 1/2	22 3/4	.....	2
2A152	2.10	350	115	2A232	2.70	500	115	17 5/8	13 5/8	16 1/8	.....	2
2A152G2	2.10	350	230	2A232G2	2.70	500	230	17 5/8	13 5/8	16 1/8	.....	2
.....	.....	.....	.....	2A257	2.70	350	115	17 5/8	13 5/8	16 1/8	.....	2
.....	.....	.....	.....	2A257G2	2.70	350	230	17 5/8	13 5/8	16 1/8	.....	2



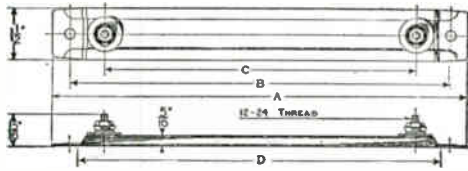
51X348	\$2.25	500	115	2A253	\$2.95	750	115	23 1/2	19	22 3/4	20 3/4	2
51X349	2.25	500	230	2A253G2	2.95	750	230	23 1/2	19	22 3/4	20 3/4	2
2A125	2.25	500	250	2A262G2	2.95	500	230	23 1/2	19	22 3/4	20 3/4	2
51X346	2.10	350	115	2A252	2.70	500	115	17 5/8	13 1/8	16 1/8	14 7/8	2
51X347	2.10	350	230	2A252G2	2.70	500	230	17 5/8	13 1/8	16 1/8	14 7/8	2
51X344	1.90	250	115	2A251	2.40	350	115	11 3/4	7 1/4	11	9	2
51X345	1.90	250	230	2A251G2	2.40	350	230	11 3/4	7 1/4	11	9	2
51X342	1.80	150	115	2A250	2.20	200	115	7	2 1/2	6 1/4	4 1/4	1

Can be connected in series for 440 or 550-volt circuits. For these voltages, secondary insulation is required.

*Dimensions apply to steel-sheath heaters. Porcelain-

enameled heaters have a width of 1 1/16 inches; thickness, 1 3/32 inch; height over terminals, 1 1/2 inches; height under terminals, 1/2 inch. Use 3/16-inch bolt maximum.

Type S Chromalox Electric Strip Heaters With One Bolt Terminal at Each End For 115 or 230 Volts

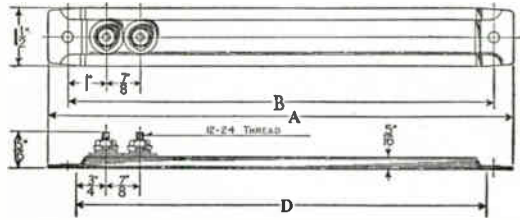


Dimensions

Size In.	DIMEN., INCHES				Size In.	DIMEN., INCHES			
	A	B	C	D		A	B	C	D
8	8	7	5	6 1/2	24	23 3/4	22 3/4	20 3/4	22 1/4
9 1/2	9 1/2	8 1/2	6 1/2	8	25 1/2	25 1/2	24 1/2	22 1/2	24
12	12	11	9	10 1/2	26 3/4	26 3/4	25 3/4	23 3/4	25 1/4
14	14	13	11	12 1/2	30 1/2	30 1/2	29 1/2	26 1/2	28
15 1/4	15 1/4	14 1/4	12 1/4	13 3/4	33 1/2	33 3/8	32 3/8	29 3/8	31
18	17 7/8	16 7/8	14 7/8	16 3/8	36	35 7/8	34 7/8	31 7/8	33 1/2
19 1/2	19 1/2	18 1/2	16 1/2	18	43	42 1/2	41 1/2	38 1/2	40
21	21	20	18	19 1/2					

Dimension D indicates overall length of Style 5 heaters.

Type SE Chromalox Electric Strip Heaters With 2 Bolt Terminals at One End For 115 and 230 Volts



Dimensions

Size In.	DIMEN., INCHES			Size In.	DIMEN., INCHES		
	A	B	D		A	B	D
8	8	7	6 1/2	24	23 3/4	22 3/4	22 1/4
10 1/2	10 1/2	9 1/2	9	25 1/2	25 1/2	24 1/2	24
12	12	11	10 1/2	26 3/4	26 3/4	25 3/4	25 1/4
14	14	13	12 1/2	30 1/2	30 1/2	29 1/2	28
15 1/4	15 1/4	14 1/4	13 3/4	33 1/2	33 3/8	32 3/8	31
18	17 7/8	16 7/8	16 3/8	36	36	34 3/4	33 1/2
19 1/2	19 1/2	18 1/2	18	38 1/2	38 1/2	37 3/8	36
21	21	20	19 1/2	43	42 3/8	41 3/8	40 1/8

Dimension D indicates overall length of Style 5 heaters.

Maximum Sheath Temperature 750°F. (Sheath of Rust-Resisting Iron)

No.	Each	OVERALL LENGTH INCHES		Watts
		*Standard	†Style 5	
S-815	\$1.80	8	6 1/2	150
S-920	1.85	9 1/2	8	200
S-1225	1.90	12	10 1/2	250
S-1430	2.00	14	12 1/2	300
S-1532	2.05	15 1/4	13 3/4	325
S-1837	2.10	18	16 3/8	375
S-1850	2.10	18	16 3/8	500
S-1950	2.15	19 1/2	18	500
S-2050	2.20	21	19 1/2	500
S-2425	2.25	24	22 1/2	250
†S-2450	2.25	24	22 1/2	500
S-2575	2.40	25 1/2	24	750
S-2670	2.45	26 3/4	25 1/4	700
S-3075	2.80	30 1/2	28	750
S-3375	3.05	33 1/2	31	750
S-3610	3.25	36	33 1/2	1000
S-4312	3.85	43	40	1250

Maximum Sheath Temperature 1200°F. (Sheath of Heat-Resisting Chrome Steel)

S-802	\$2.60	8	6 1/2	250
S-903	2.75	9 1/2	8	300
S-1202	2.90	12	10 1/2	250
S-1205	2.90	12	10 1/2	500
S-1405	3.05	14	12 1/2	500
S-1505	3.10	15 1/4	13 3/4	500
S-1805	3.30	18	16 3/8	500
S-1807	3.35	18	16 3/8	750
S-1801	3.40	18	16 3/8	1000
S-1905	3.40	19 1/2	18	500
S-1907	3.50	19 1/2	18	750
S-1901	3.50	19 1/2	18	1000
S-2005	3.50	21	19 1/2	500
S-2405	3.70	24	22 1/2	500
S-2407	3.70	24	22 1/2	750
S-2401	3.80	24	22 1/2	1000
S-2415	4.00	24	22 1/2	1500
S-2501	3.90	25 1/2	24	1000
S-2607	4.00	26 3/4	25 1/4	750
S-3007	4.40	30 1/2	28	750
S-3301	4.75	33 1/2	31	1000
S-3601	5.00	36	33 1/2	1000
S-4301	5.75	43	40	1500

*Standard type has fastening tabs at each end with slotted mounting holes 3/16 inch wide by 1/2 inch long for bolting to supports.

†Style 5 (blunt end) has fastening tabs cut off about 3/4 or 1 1/4 inches depending on overall length from each end for clamp-on applications.

‡Also 250 volts.

When ordering specify if Style 5 is desired, also No. and voltage.

Maximum Sheath Temperature 750°F. (Sheath of Rust-Resisting Iron)

No.	Each	OVERALL LENGTH, IN.		Watts
		*Standard	†Style 5	
SE-815	\$1.80	8	6 1/2	150
SE-1025	1.85	9 1/2	9	250
SE-1225	1.90	12	10 1/2	250
SE-1430	2.00	14	12 1/2	300
SE-1532	2.05	15 1/4	13 3/4	325
SE-1835	2.10	18	16 3/8	350
SE-1850	2.10	18	16 3/8	500
SE-1935	2.15	19 1/2	18	350
SE-1950	2.15	19 1/2	18	500
SE-2050	2.20	21	19 1/2	500
SE-2450	2.25	24	22 1/2	500
SE-2475	2.30	24	22 1/2	750
SE-2550	2.35	25 1/2	24	500
SE-2575	2.40	25 1/2	24	750
SE-2670	2.45	26 3/4	25 1/4	700
SE-3075	2.80	30 1/2	28	750
SE-3375	3.05	33 1/2	31	750
SE-3610	3.25	36	33 1/2	1000
SE-3880	3.45	38 1/2	36	800
SE-3810	3.50	38 1/2	36	1000
SE-4312	3.85	43	40	1250

Maximum Sheath Temperature 1200°F. (Sheath of Heat-Resisting Chrome Steel)

SE-802	\$2.60	8	6 1/2	250
SE-1003	2.80	10 1/2	9	350
SE-1202	2.90	12	10 1/2	250
SE-1205	2.90	12	10 1/2	500
SE-1405	3.05	14	12 1/2	500
SE-1505	3.10	15 1/4	13 3/4	500
SE-1805	3.30	18	16 3/8	500
SE-1807	3.35	18	16 3/8	750
SE-1801	3.40	18	16 3/8	1000
SE-1905	3.40	19 1/2	18	500
SE-1901	3.50	19 1/2	18	1000
SE-2007	3.50	21	19 1/2	750
SE-2405	3.70	24	22 1/2	500
SE-2407	3.70	24	22 1/2	750
SE-2401	3.80	24	22 1/2	1000
SE-2507	3.85	25 1/2	24	750
SE-2501	3.90	25 1/2	24	1000
SE-2601	4.00	26 3/4	25 1/4	1000
SE-3007	4.40	30 1/2	28	750
SE-3001	4.40	30 1/2	28	1000
SE-3307	4.75	33 1/2	31	750
SE-3601	5.00	36	33 1/2	1500
SE-3801	5.25	38 1/2	36	1000
SE-4301	5.75	43	40	1500

*Standard type has fastening tabs at each end with slotted mounting holes 3/16 inch wide by 1/2 inch long for bolting to supports.

†Style 5 (blunt end) has fastening tabs cut off about 3/4 or 1 1/4 inches depending on overall length from each end for clamp-on applications.

When ordering specify if Style 5 is desired, also No. and voltage.

Type H Chromalox Electric Air Heaters

Listed Under Underwriters' Laboratories, Inc.
Re-Examination Service—Reference No. 7601
For 115, 208, 230, 250, 440, and 550 Volts



No. EH-2405

This heater is designed for those many hard-to-heat places where heat must be concentrated near the floor. Ideal for mounting underneath low windows.

This heater discharges heated air horizontally into the room where it is needed (not up to the ceiling), thereby providing even heat distribution and eliminating the usual hot spots and cold corners. Mounting side (back part) is always cool, therefore this heater can be fastened to walls or wooden partitions without fire hazard.

Fully Assembled with 3 Feet of Flexible Cable and 3-Heat Switch Mounted on Standard Conduit Box Ready to Connect to Power Line

No.	With Switch Each	Without Switch or Cable Each	Wattage	Length Inches	Height Inches	Depth Inches	Approx. Ship. Wt. Pounds
EH-1801	\$20.00	\$17.00	1000	20 ³ / ₄	7 ¹ / ₂	4 ¹ / ₂	28
EH-2405	23.50	20.50	1500	26 ³ / ₄	7 ¹ / ₂	4 ¹ / ₂	38
*EH-2406	27.00	23.00	2000	26 ³ / ₄	11 ¹ / ₄	4 ¹ / ₂	49
*EH-2407	34.00	29.00	3000	26 ³ / ₄	11 ¹ / ₄	4 ¹ / ₂	49

With 3-Heat Switch and Conduit Box Mounted on End of Heater

No.	With Switch Each	Without Switch or Cable Each	Wattage	Length Inches	Height Inches	Depth Inches	Approx. Ship. Wt. Pounds
EH-S-1801	\$20.00	\$17.00	1000	25	7 ¹ / ₂	4 ¹ / ₂	32
EH-S-2405	23.50	20.50	1500	30	7 ¹ / ₂	4 ¹ / ₂	40
*EH-S-2406	27.00	23.00	2000	30	11 ¹ / ₄	4 ¹ / ₂	48
*EH-S-2407	34.00	29.00	3000	30	11 ¹ / ₄	4 ¹ / ₂	48

*These heaters can be supplied for 3-heat operation on 440 or 550 volts. All other heaters can be supplied for single-heat operations on 440 or 550 volts. For single or 3-heat switch (440-550 volts) add \$4.00 to above prices.

Type D Chromalox Electric Air Heaters

For 115, 208, 230, and 250 Volts



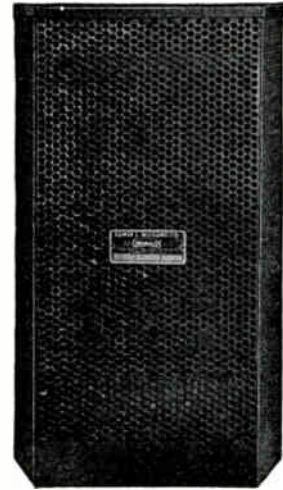
Recommended for small offices or shops.

The 1000-watt and 1500-watt heaters are supplied complete with 3-heat switch, 6 feet of heater cord and attachment plug. The two larger sizes are furnished with 3-heat switch and 6 feet of heater cord for connection to power line.

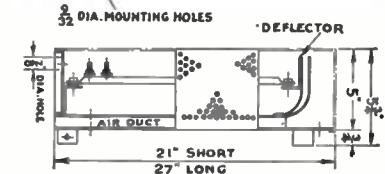
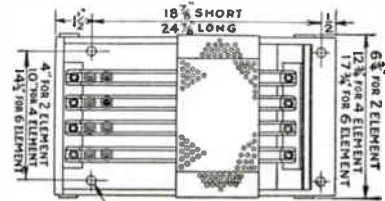
No.	Each	Wattage	Overall Length Inches	Overall Width Inches	Overall Height Inches	Approx. Ship. W. Pounds
EH-810	\$16.00	1000	22	6	13	33
EH-815	18.50	1500	22	6	13	33
EH-420	21.00	2000	28	6	13	38
EH-430	26.00	3000	28	6	13	38

Type V Chromalox Electric Air Heaters

Listed Under Underwriters' Laboratories, Inc.
Re-Examination Service—Reference No. 7601
For 115, 208, 230, 250, 440, and 550 Volts



Exterior View of No. EH-2030



Showing Overall Dimensions

This heater is constructed to give strong flue action and rapid air circulation.

Easily mounted on walls or wooden partitions without fire hazard.

Furnished fully assembled with 3 feet of flexible cable and 3-heat switch mounted on standard conduit box ready to connect to power line.

No.	Complete Each	Without Switch or Cable Each	Wattage	Overall Height Inches	Approx. Ship. Wt. Pounds
EH-1010	\$20.00	\$17.00	1000	21	24
*EH-1020	27.00	23.00	2000	21	42
EH-2015	23.50	20.50	1500	27	30
*EH-2020	27.00	23.00	2000	27	51
*EH-2030	34.00	29.00	3000	27	51
†EH-2040	45.00	39.00	4500	27	65

*Can be supplied for 3-heat operation on 440 or 550 volts. All other heaters can be supplied for single-heat operation on 440 or 550 volts. For single or 3-heat switch (440-550 volts) add \$4.00 to above prices.

†The 4500-watt (4.5 kw.) heater can be supplied on order for 3-phase, 2-phase or single-phase operation and the load will be evenly balanced on each phase. If greater heating capacity is required than is supplied by a 4.5 kw. heater, mount two or more heaters side by side and thus secure the necessary total kw. of heater capacity.

Type HF Chromalox Electric Unit Heaters

Blower Type

115-230 Volts, 60 Cycles, A.C., Single Phase



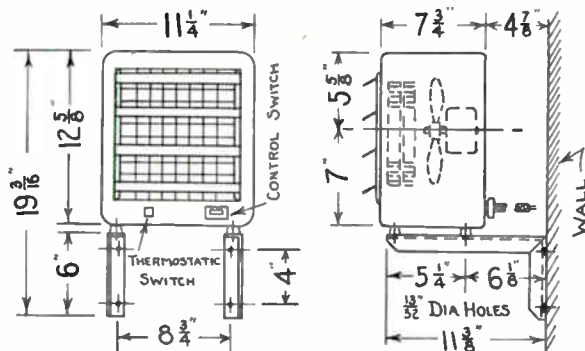
Used to heat watchmen's shelters, factory offices, stock rooms, warehouses, etc.; in place of steam heating system for heating offices and rooms in spring and fall; to supplement steam heating in cold weather in rooms inadequately heated; and for temporary heating where a portable or easily mounted heater is needed.

Steel heater case provided with handle and rubber feet or pads for portable use. Brackets available for permanent wall mounting. Adjustable louvers will direct air in desired direction. Chromalox Koilstrip elements within the heater warm air drawn in back of heater and forced out the front by cadmium-plated fan. Enclosed type electric motor drives fan.

Positive acting thermostatic switch automatically opens heater circuit if normal operating temperatures are exceeded. Manually operated reset button closes heater circuit when normal temperatures are restored.

Manual control switch turns on heater circuit and fan for winter use, and fan only for summer use. For automatic temperature control, order PA-85 thermostat at \$11.50; no contactor is required.

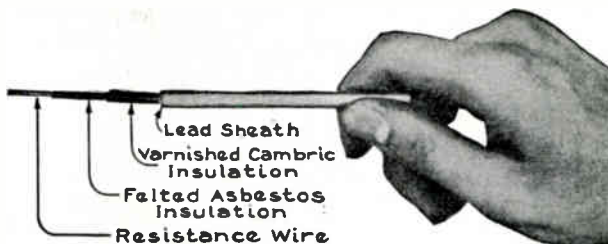
The 1500-watt heaters supplied with 10 feet of heater cord and attachment plug; all other sizes supplied with 10 feet of heater cord only.



No.	Each	Kw.	No. of Volts	Approx. Btu. per Hour	Approx. Air Temp. Rise °F.	Approx. Air Velocity FPM.	Approx. Ship. Wt. Lb.
HF-150	\$26.50	1.5	115-230	5118	35	130	21 1/2
HF-200	\$29.00	2.0	115-230	6824	45	130	21 1/2
HF-300	\$34.00	3.0	115-230	10236	58	250	24
HF-400	\$38.50	4.0	230	13648	72	250	24

NOTE. The 115-volt, 4-kilowatt heater is furnished with line terminals and without hand control switch, at \$36.50 each. Control with contactor and thermostat.

G-E Heating Cable



A flexible, lead-covered cable which can be bent and formed readily to fit almost any low-temperature heating job. Should be used on those jobs requiring a heater sheath temperature of 165°F. or less. The gentle heating effect can be extended along a line or spread evenly over a wide area. Cable is so pliable that it can easily be concentrated in certain areas.

Soil heating is one of the widest applications of heating cable as well as one of the oldest, but ingenious operators have been alert to the low-cost possibilities of this electric heating medium and have put it to work on a great diversification of application. The following jobs are being done successfully on a wide scale: protecting pipes and valves from freezing; warming water for poultry; warming testing rooms; warming valves and pipe lines of viscous material; acid baths (acids that will not attack lead); protecting sprinkler systems; melting ice from eaves and downspouts; miscellaneous air heating; freeing ice from sidewalks and other surfaces; floor heating; for heating brooders, lily ponds, and kennel floors.

Application Data

The tabulation below shows lengths of cable recommended for more common voltages, and the resultant wattages. Never use shorter lengths on these voltages because such practice will increase the wattage and operating temperature and shorten the cable life. Longer lengths can be used, in which case the total watts will decrease according to the following equation:

$$\text{Total Watts} = \frac{(\text{Volts})^2}{\text{Ft. Length} \times 0.53}$$

Length, No. 19 A.W.G. feet	60	120	240
Volts	110	220	440
Total Watts	400	800	1600

Never apply in a location where sheath temperatures will exceed 165°F. When used in the lengths indicated in the table, in free air the sheath temperature will be approximately 95°F. above air ambient temperature. It is usually safe to mount on boards as well. In soil of average moisture content, the sheath temperature will be approximately 60°F. above the soil temperature.

Bend on a minimum diameter of 2 inches.

Vertical suspension can be made of lengths up to 120 feet.

When making connections to G-E heating cable, strip the lead sheath back about one inch further than the insulation to provide adequate creepage distance between the conductor and the sheath. Make a waterproof connection by covering splice with alternate layers of tape and varnish or shellac.

When applying heating cable to long sections, such as to a pipe line, it is advisable to bend selected length of cable back on itself and then apply doubly. Thus, the two ends will be together to facilitate connections and the inductive heating effect will be lessened.

Specifications

RESISTOR. No. 19 A.W.G., nickel-chromium alloy, .036 inch diameter; resistance, .53 ohms per linear foot.

INSULATION. Felted asbestos, .031 inch thick; two separate wraps of black varnished cambric, each wrap .008 inch thick and each wrap lapped.

SHEATH. Lead, .047 inch thick.

FINISHED DIAMETER. .240 inch.

SHIPPING WEIGHT. Per 1000 feet, 180 pounds.

Prices

Quantity feet	1 to 599	600 to 1999	2000 to 4999
Per 100 Feet	*\$6.25	†6.00	†5.75

*F.O.B. factory. †Freight allowed.

G-E Calrod Immersion Heaters

G-E Immersion Heaters offer the most economical method of heating liquids in tanks, kettles, metal barrels, etc. They are of substantial construction and high efficiency, utilizing the well-known G-E Calrod sheath wire.

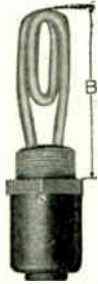


Fig. 1

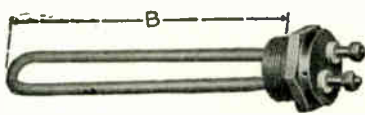


Fig. 2

For Water

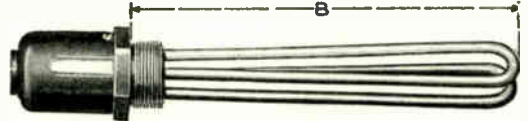


Fig. 3

For heating water, a copper-sheathed unit of high heat density, and having a threaded brass header, is used. Typical heaters are shown.

No.		Each	Kw.	No. Heats	Lgth. from End of Unit to Nut on Threaded Collar "B" Dimen. In.	Diam. Threaded Collar In.	Lgth. Over-All In.	Fig. No.	Approx. Ship. Wt. Lb.	Snap Switches for Hand Control		
115 Volts	230 Volts									No.	Description	
15X820	15X821	\$7.90	0.6	1	5	1 1/4	8 1/2	1	2	60451	\$1.00	Single-Heat
15X822	15X823	8.40	0.75	1	8	1 1/4	11 1/2	2	2	60451	1.00	Single-Heat
15X824	15X825	9.30	1.0	1	10	1 1/4	13 1/2	2	2	60451	1.00	Single-Heat
15X826	15X827	11.70	1.2	3	8	1 1/4	11 1/2	3	3	29X924	1.50	3-Heat
15X828	15X829	13.60	2.0	3	10	1 1/4	13 1/2	3	3 1/2	278607	2.40	3-Heat
*15X830	*15X831	16.00	2.0	3	1 1/8	1 5/8	4 1/2	4	3 1/2	278607	2.40	3-Heat
15X832		16.00	3.0	3	14	2	18	3	6	278607	2.40	3-Heat
	†15X833	16.00	3.0	3	14	2	18	3	6	278610	4.50	3-Heat
15X834	†15X835	18.40	4.0	3	18	2	22	3	7	278610	4.50	3-Heat
15X836	†15X837	20.90	5.0	3	22	2	26	3	8	278610	4.50	3-Heat
	†50X595	26.80	7.5	3	30	2	34	3	11			
	†14X426	33.00	10.0	3	42	2	46	3	14			

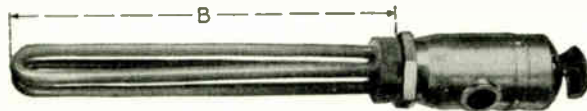
*This heater differs from the other heaters in that it is installed from within the container instead of being screwed in from the outside. Therefore, it is provided with a shoulder on the header and with the necessary gasket and tightening nut.
 †This heater, for operation on a 230-volt circuit, can be

operated single-heat on a 440-volt circuit by running the two elements in series. Switches listed should not be used for circuits of over 250 volts.

†Straight thread, not pipe thread.

§Diameter is standard pipe thread of size given.

Water-Immersion Heaters with Switch in Cap



No.		Each	Kw.	No. Heats	B or Collar In.	Std. Pipe Thrd. or Collar In.	Lgth. Over-All In.	Approx. Ship. Wt. Lb.
115 Volts	230 Volts							
1A389	1A389G2	\$21.00	3.0	3	14	2	20 1/2	8
1A390	1A390G2	23.40	4.0	3	18	2	24 1/2	9
1A391	1A391G2	25.90	5.0	3	22	2	28 1/2	10
	1A392	31.80	7.5	3	30	2	36 1/2	13

For Water—Self-Protecting Type

For service in devices where the unit may accidentally be exposed at times. This unit will operate partly or totally uncovered for a limited period without injury. It depends,

on its operation, upon the high temperature coefficient of resistance of a special alloy which is used as the heating element. Sheath is made of nickel silver.

No.		Each	Kw.	No. Heats	Lgth. from End of Unit to Nut on Thrd. Collar "B" Dimen. In.	Diam. Threaded Collar In.	Lgth. Over-All In.	Fig. No.	Approx. Ship. Wt. Lb.	Snap Switches for Hand Control		
115 Volts	230 Volts									No.	Description	
1A384		\$12.00	0.75	1	10	1 1/4	13 1/2	2	3	60451	\$1.00	Single-Heat
1A385		17.00	1.5	3	10	1 1/4	13 1/2	3	3 1/2	278607	2.40	3-Heat
	1A385G2	17.00	1.5	1	10	1 1/4	13 1/2	3	3 1/2	60451	1.00	Single-Heat
1A386	1A386G2	20.80	2.5	3	14	2	18	3	6	278610	4.50	3-Heat
1A387	1A387G2	24.00	3.5	3	18	2	22	3	7	278610	4.50	3-Heat
1A388		27.20	4.5	3	22	2	26	3	8			
	1A388G2	27.20	4.5	3	22	2	26	3	8	278610	4.50	3-Heat

For Non-Circulating Oils

For heating liquids such as oil and paraffin. A low watt density is used because of possible damage to the liquids and to the heaters through carbonization, etc. Steel is used

as the sheath and header material. Equipped with an ingenious glass seal at the terminal to protect the G-E Calrod heating element against accidental contact with oil.

33X825	33X826	\$13.60	1.0	3	10	1 1/4	13 1/2	3	5	29X924	\$1.50	3-Heat
32X820	†32X821	16.00	1.5	3	14	2	18	3	6	29X924	1.50	3-Heat
32X822	†32X823	18.40	2.0	3	18	2	22	3	7	278607	2.40	3-Heat
15X838	†15X839	20.70	2.5	3	22	2	26	3	8	278607	2.40	3-Heat
32X824		23.00	3.0	3	26	2	30	3	10	278607	2.40	3-Heat
	†32X825	23.00	3.0	3	26	2	30	3	10	278610	4.50	3-Heat
32X826	†32X827	27.70	4.0	3	36	2	40	3	12	278610	4.50	3-Heat
32X828	†32X829	32.30	5.0	3	42	2	46	3	14	278610	4.50	3-Heat

†This heater, for operation on a 230-volt circuit, can be operated single-heat on a 440-volt circuit by running the two elements in series. Switches listed should not be used

for circuits of over 250 volts.

§Diameter is standard pipe thread of size given.

Chromalox Immersion Heaters

Types M, MO, CM and CMO



Type M or MO



Type CM or CMO with Switch and Outlet Box

USES.—Because of their efficiency, Chromalox Immersion Heaters supply the most economical method for heating fluids in tanks, vats, kettles, boilers, stills and other containers where direct heat energy is desirable. Hundreds of companies are using these durable heaters for heating cleaning solutions, volatile solutions, tempering baths, pickling baths, water, oils, acids, glues, paraffin, syrups, gasoline, caustics and other fluids.

CONSTRUCTION.—All Chromalox Immersion Heater blades or heating units proper are similar in construction to Chromalox Strip Heaters having the resistor embedded in refractory material. The heating units are encased in seamless metal tubing or sheath pressed tightly over them, the seamless sheath being welded or brazed to the pipe threaded screw plug making entire unit waterproof and insuring efficient heat transfer.

OPERATION.—Single heat heaters have one blade or heating unit while 3-heat immersion heaters have two blades or heating units that can be operated in parallel or series giving full or 1/4 total wattage; operating only one blade or unit of a heater gives 1/2 total wattage. 440-volt operation, single heat, can be obtained by connecting the two blades or heating units of a 3-heat, 230-volt immersion heater in series. A 3-heat, 115-volt immersion will operate with the two blades in series on 230 volts.

INSTALLATION.—Chromalox Immersion Heaters are easily installed. Where tank wall is 3/8 inch thick or more,

simply drill a hole and thread it with either 1 1/4 or 2-inch standard pipe thread, depending upon what immersion heater is used. If tank wall is less than 3/8-inch thick, solder or weld a standard 1 1/4 or 2-inch pipe threaded flange or metal disc to tank wall and install immersion heater.

Types of Heaters

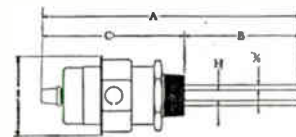
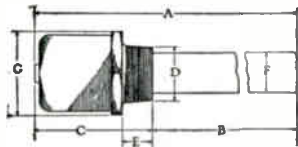
TYPE M.—For water heating and solutions that readily absorb generated heat. Regularly supplied with copper sheath and bronze screw plug. *For alkali solutions* where copper is attacked, steel sheath, iron screw plug and welded seam construction is supplied—when specified.

TYPE CM.—Same as Type M except furnished with 3-heat switch mounted on outlet box which covers heater terminals, providing for conduit or BX wiring if desired.

TYPE MO.—For heating mineral oils, paraffin and other fluids that absorb heat slowly. Supplied with steel sheath, iron screw plug, and brazed seams. Can be furnished with copper sheath and bronze screw plug where steel would be attacked.

TYPE CMO.—Same as Type MO except furnished with 3-heat switch mounted on outlet box, which covers heater terminals, providing for conduit or BX wiring if desired.

NOTE.—If solution to be heated will attack the standard immersion heater construction, special seamless metal sheathed heaters can be furnished. Write for prices specifying type of solution.

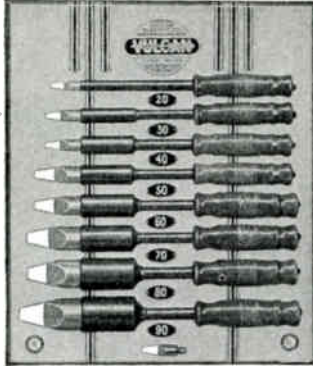


For Water Heating—Copper Sheath

				TYPES M and MO Without Hand Control Switch				TYPES CM and CMO With Hand Control Switch and Outlet Box Mounted on Heater			
Watts	Volts	Heats	Std. Pipe Thrd. In.	Cat. No.	Each	A		Cat. No.	Each	B	
						Approx. Over All Length Inches	Heated or Blade Length Inches			Approx. Over All Length Inches	Heated or Blade Length Inches
500	115 or 230	1	1 1/4	M-150	\$7.50	12 1/8	7	CM-150	\$8.50	13 5/8	7
750	115 or 230	1	1 1/4	M-175	8.40	14 1/4	9 1/8	CM-175	9.40	15 3/4	9 1/8
1000	115 or 230	1	1 1/4	M-110	9.30	15 1/2	10 3/8	CM-110	10.55	17 1/2	10 3/8
1000	115 or 230	3	1 1/4	M-110-3	11.70	12 1/8	7	CM-110-3	12.95	13 5/8	7
1500	115 or 230	3	1 1/4	M-115	12.40	14 1/4	9 1/8	CM-115	13.80	16	9 1/8
2000	115 or 230	3	1 1/4	M-120	13.60	15 1/2	10 3/8	CM-120	15.15	17 5/8	10 3/8
1500	115 or 230	1	2	M-215	11.00	19 7/8	14 1/4	CM-215	12.40	21 7/8	14 1/4
2000	115 or 230	1	2	M-220	12.70	25 7/8	20 1/4	CM-220	14.25	28	20 1/4
2000	115 or 230	3	2	M-220-3	13.60	15 5/8	10	CM-220-3	15.15	17 3/4	10
2500	115 or 230	3	2	M-225	14.80	18 1/4	12 5/8	CM-225	16.35	20 3/8	12 5/8
3000	115 or 230	3	2	M-230-3	16.00	19 7/8	14 1/4	CM-230-3	17.90	22	14 1/4
4000	115 or 230	3	2	M-240	18.40	25 7/8	20 1/4	CM-240	22.75	28 1/4	20 1/4
5000	115 or 230	3	2	M-250	20.90	27 5/8	22 1/4	CM-250	25.25	30 3/8	22 1/4
6000	230 Only	3	2	M-260	23.30	37 5/8	32 1/4	CM-260	27.65	40 3/8	32 1/4
7500	230 Only	3	2	M-275	26.80	41 7/8	36 1/4	.....	.....	.....	.....
10000	230 Only	3	2	M-201	33.00	50 1/4	44 5/8	.....	.....	.....	.....
				For Oil Heating—Steel Sheath							
1000	115 or 230	3	1 1/4	MO-110	\$13.60	14 1/4	9 1/8	CMO-110	\$14.85	16	9 1/8
1500	115 or 230	3	2	MO-215	16.00	18 1/4	12 5/8	CMO-215	17.40	19	12 5/8
2000	115 or 230	3	2	MO-220	18.40	22 7/8	17 1/4	CMO-220	19.80	23 5/8	17 1/4
2500	115 or 230	3	2	MO-225	20.70	25 7/8	20 1/4	CMO-225	22.25	28	20 1/4
3000	115 or 230	3	2	MO-230	23.00	29 7/8	24 1/4	CMO-230	25.00	32	24 1/4
4000	115 or 230	3	2	MO-240	27.70	37 7/8	32 1/4	CMO-240	32.05	40	32 1/4
5000	115 or 230	3	2	MO-250	32.30	45 1/4	39 5/8	CMO-250	36.65	47 5/8	39 5/8
6000	230 Only	3	2	MO-260	37.00	50 1/4	44 5/8	CMO-260	41.35	52 3/4	44 5/8

Specify voltage when ordering.

Vulcan Electric Soldering Irons



Display Board

These electric soldering irons are approved by Underwriters' Laboratories. Can be connected to any lighting socket and will operate with identical results on either a.c. or d.c.

They are wound for standard voltages as follows: 110-120, 220-240 volts. An extra charge of \$1.00 is made for special voltages. Specify voltage when ordering.

Each iron is equipped with a patented, ventilated, adjustable handle, by which it can be lengthened or shortened, and a 6-foot approved heater cord and attachment plug cap.

No. 10 and No. 20

For finest instruments, smallest fuses, light telephone repairs, radio, and all very light soldering.

No. 20 is recommended for industrial use.

No.	Comp. Each	Extra Tip Each	Heat-ing Head Each	Hand-le Each	Cord and Plug Each	Equal to Old Style Copper Lb.	Diam. Tip In.	Wt. Oz.
*10	\$3.75	\$.30	\$2.30	\$.40	\$.65	44 1	3/16	10
20	5.00	.30	3.55	.40	.65	50 1	1/16	10

*No. 10 made only in 110-120 volts.

No. 30

For radio and home use, fuses, instruments, inspectors' or linemen's tool kits, etc.

30	\$6.25	\$.40	\$4.70	\$.40	\$.65	60 1 1/2	1/2	12
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No. 40

For telephone switchboards, electrical instruments, light manufacturing, fuses and radio. High speed tool.

40	\$7.00	\$.40	\$5.45	\$.40	\$.65	90 2 1/2	1/2	14
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No. 50

For fast telephone work, art glass, light automobile repairs, light tinware and general home use.

50	\$8.00	\$.65	\$6.20	\$.40	\$.65	130 3 1/2	3/8	18
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No. 60

For light automobile repairs, light tinware, general utility and home use.

60	\$9.25	\$.90	\$6.95	\$.65	\$.65	175 4 1/2	1	22
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No. 70

For medium tinware, general manufacturing, metal patterns and automobile work.

70	\$10.75	\$1.20	\$8.15	\$.65	\$.65	220 6	1 1/8	28
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No. 80

For heavy tinware, sheet steel work, metal boat making, refrigerator work and automobile radiator work.

80	\$12.50	\$1.60	\$9.50	\$.65	\$.65	310 7 1/2	1 3/8	38
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No. 90

For heavy sheet metal work, large patterns and all heavy soldering.

90	\$14.50	\$2.10	\$11.00	\$.65	\$.65	430 10	1 3/8	50
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No. 900

For exceptionally heavy soldering.

900	\$25.00	\$4.20	\$19.50	\$.65	\$.65	700 15	1 3/4	84
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Vulcan Electric Branding Irons



Permanent identity, quickly, economically, and indelibly. Protects property against loss.

Send sketches of desired imprints for estimate.

Prices upon application.

Vulcan Rheostats



Provides flexible and accurate temperature control of Vulcan electric soldering tools. It protects them, when not actually delivering their working heat, by preventing the unused heat from storing up; it saves the expense of wasted current; it protects the tinning from burning off the tip and prolongs the life of the winding.

Rheostat maintains the exact degree of temperature required for perfect soldering on any particular job.

No.	A	B	C	D
Each	\$8.50	9.50	10.50	12.00
For Tool No.	10, 20 & 30	40 & 50	60 & 70	80 & 90

No. 250 Vulcan Solder Pouring Ladles



Pouring may be done without removing ladle from stand by turning handle enough to tip pot. Pot remains upright otherwise. Quick, efficient heating. Cast iron pot.

Capacity, approximately 1 1/2 pounds solder.

Cartridge unit of 200 watts is easily replaceable.

When ordering, specify voltage.

No. 250.....each \$10.50

Vulcan Plug Tip Type Tools



No. 35

Equipped with six-foot (10,000 cycle) approved heater cord with rubber plug cap, except No. 25 which is equipped with six feet of Tirez rubber cord and plug which is smaller and more suitable for this size.

Operate equally well on either a.c. or d.c. Stocked in standard voltages.

Specify voltage when ordering.

No. 25

For small fuses, light telephone repairs, radio and all very light soldering.

No.	Comp. Each	Extra Tip Each	Heat-ing Head Each	Hand-le Each	Cord and Plug Each	Equal to Old Style Copper Lb.	Diam. Tip In.	Wt. Lb.
25	\$4.00	\$.30	\$2.55	\$.40	\$.65	50 1	1/4	5/8

No. 35

For radio and home use, fuses, instruments, inspectors' or linemen's tool kits, etc.

35	\$6.25	\$.40	\$4.70	\$.65	\$.65	100 1 1/2	3/8	1 1/8
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No. 45

For telephone switchboards, electrical instruments, light manufacturing, fuses and radio apparatus.

45	\$7.00	\$.50	\$5.35	\$.65	\$.65	150 2 1/2	1/2	1 1/4
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No. 55

For light automobile repairs, light tinware, general utility and home use.

55	\$8.50	\$.90	\$6.20	\$.65	\$.65	200 3 1/2	5/8	1 3/8
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No. 75

For medium tinware, general manufacturing, metal patterns, automobile work, etc.

75	\$11.25	\$1.60	\$8.25	\$.65	\$.65	300 6	1 1/8	2 3/8
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Special voltages, \$1.00 extra.

American Beauty Electric Soldering Irons



No. 3138



No. 3158

All irons are made with a special baffle plate at the shank to prevent free conduction of heat to handles.

Copper tips are treated with special nickel coating to prevent oxidation and corrosion.

Heating element core is machined from solid steel rod. Outer surfaces are impregnated with zinc.

Stands are supplied with all irons.

Pyramid type tips are regularly supplied with Nos. 3138 and 3158, chisel type with Nos. 3178 and 3198. All numbers can be supplied with either type tip, when so specified. A special long drawn semi-chisel shape tip can be furnished for No. 3138.

No. 3138. Primarily adapted for light work; radio, telephone, telegraph, ignition work, etc.

No. 3158. For the same purposes as No. 3138 iron and work of a somewhat heavier nature; for electric starter and ignition manufacturers, repair work, etc.

No. 3178. For use on heavy work; connections, light commutators, and for service and production work.

No. 3198. For shop, service, production work, etc. Supplies a large volume of heat at high temperature.

Cat. No.	Each	Diam. Tip In.	Watts	OVERALL INCHES		WEIGHT POUNDS	
				Lgth.	Diam.	Net	Ship.
3138	\$7.20	3/8	100	12 7/8	7/8	1	2
3158	8.60	5/8	200	13 5/8	1 1/4	1 3/4	3
3178	11.50	7/8	300	14 3/8	1 5/8	2 5/8	4
3198	15.00	1 1/8	550	15	1 3/4	3 3/4	5 3/4

No. 475 American Beauty Temperature Regulating Stand



A thermostatically controlled device for regulating the temperature of electric soldering irons. The soldering iron, when placed on this stand, is maintained at working temperature ready for instant use.

Through an adjustment on bottom of stand, thermostat may be set for the maintenance of any desired temperature.

Body of stand is of molded plastic. Soldering iron holder is of copper.

For use with electric soldering irons up to 660 watts consumption and for circuits up to 240 volts, a.c. only.

Stand is provided with cord and attachment plug cap for connection to current and with a receptacle for connection of the electric soldering iron.

Packed 1 in a paper box.

Net weight, 27 ounces.

No. 475.....each \$4.95

No. S-76 American Beauty Electric Soldering Irons



For small, light work; consumes 50 watts. Specially treated copper core with aluminum head, on to which tip screws with taper fit. Diam. tip, 1/16 in.; lgth., 1 1/8 in.

No. S-76, Net Weight, 6 Ounces.....each \$4.50

Extra Tips for American Beauty Electric Soldering Irons



No. 3738



No. 3758



No. 3778



No. 3798

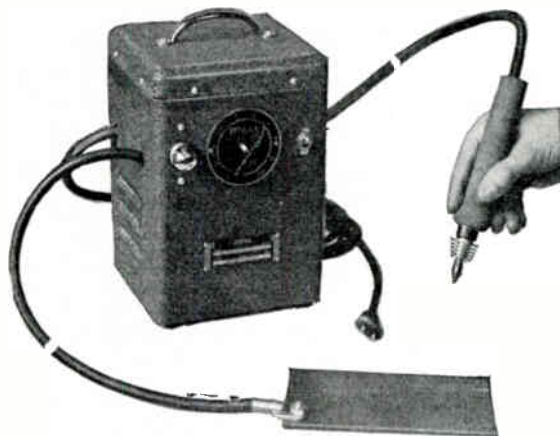
No.....	3738	3758	3778	3798
Each.....	\$1.50	1.10	1.90	2.20
For Iron No.....	3138	3158	3178	3198
Weight.....ounces	2 1/2	7	16	28

Heating Elements for American Beauty Electric Soldering Irons



No.....	9273	9275	9277	9279
Each.....	\$3.60	4.80	6.50	8.55
For Iron No.....	3138	3158	3178	3198
Weight.....ounces	4	8	12	18

Ideal Electric Etchers and Markers



Etcher. Permanently marks, labels and engraves identification data on smooth surfaced iron, steel, case hardened steel, etc. Operates on resistance-burning principle.

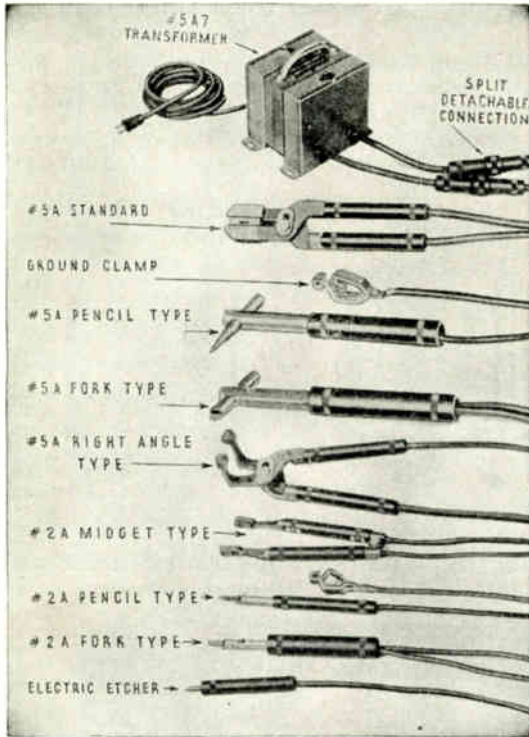
Marker. For marking all materials—metals, glass, plastics, wood, etc.

Operates from a 110-volt, 60 cycle a.c. outlet. Other voltages and frequencies are available at slight additional cost.

No. 10	Light Duty Etcher.....	each	\$11.87
No. 11	Standard Etcher.....	each	24.37
No. 12	Heavy Duty Etcher.....	each	56.25
No. 13	Universal Etcher.....	each	36.87
No. 3	Marker.....	each	16.25

Ideal Electric Soldering Tools

No. 5 Thermo-Grip Set



A general all-purpose soldering unit. Attachments are interchangeable with transformer. Available complete or with attachments as selected. Includes the following:

No. 5 Transformer. Furnished with quick make-and-break connectors so that any one of the Deluxe Thermo-Grip attachments can be used, and easily interchanged. For 110 volts, 50-60 cycles. each **\$17.50**

No. 5 Standard Plier Type Head. Grips work while heating. For applying or removing solder lugs and terminals up to 400-ampere size, and sweating or unsweating threadless copper pipe and fittings up to 1 inch in diameter. . . each **\$14.40**

No. 5 Pencil Type Head. A single pointed, round carbon rod clamped in suitable holder. Furnished with ground clamp for seam and spot soldering. Especially suitable for soldering lids on cans, wires to terminals, etc. each **\$12.50**

No. 5 Fork Type Head. Has two carbons mounted on a single handle. For soldering small lugs, terminals or connections in restricted spaces. Also for sweating and unsweating small pipe joints. each **\$18.10**

No. 5 Right Angle Plier Type Head. Made with long tong-like jaws that reach into places where straight tools cannot be used. For soldering in switchboxes and transformer cases, flush against the back of switchboards, or return bends on refrigerator units. each **\$20.60**

No. 2 Midget Plier Type Head. For small and lighter soldering work such as small terminals and lugs up to 150-ampere size, or sweating threadless copper tubing and fittings up to 3/8 inch in diameter. each **\$11.25**

No. 2 Pencil Type Head. Fitted with special 1/4-inch diameter carbon electrode, fixed either in line with or at 45° to handle. For spot or seam welding in tight places. Overall length, 8 1/2 inches. each **\$7.50**

No. 2 Fork Type Head. This tool is only 8 1/2 inches long. It is especially suited for soldering in close places, such as switchboxes, refrigerators, etc. Both carbons are held in single handle. each **\$10.00**

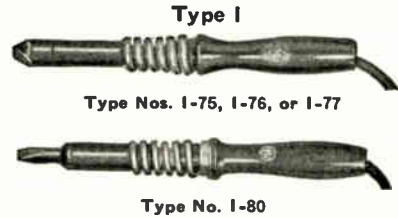
No. 25 Electric Etcher. Used like a pencil for the permanent writing or marking of tools, gages, dies and hard metal parts. each **\$15.00**

No. 5 Set Complete. Consists of the transformer and all the attachments listed above, supplied with a carrying case. per set **\$126.90**

G-E Soldering Irons

Equipped with long-lasting G-E cartridge unit of swaged construction, which is insulated with densely compact magnesium oxide. Renewable, calorized copper tip prevents undue oxidation.

Furnished with 6 feet of rubber cord and molded-on rubber plug.



Built to withstand the rigors of daily industrial service.

For Light Duty						Net Wt. less Stand	Ship. Lb.
No.	Each	Type No.	†Diam. Tip In.	Watts	Volts		
43X700	\$4.95	I-80	3/16	100	115	17	1 1/2
43X701	4.95	I-80	7/16	100	230	17	1 1/2
291880	5.25	I-75	1/2	75	115	17	1 1/2
291882	5.25	I-75	1/2	75	230	17	1 1/2
For Intermittent Duty						Net Wt. less Stand	Ship. Lb.
No.	Each	Type No.	†Diam. Tip In.	Watts	Volts		
291883	\$5.80	I-76	3/4	100	115	18	1 1/2
291885	5.80	I-76	3/4	100	230	18	1 1/2
291886	6.45	I-77	1	150	115	27	2 1/4
291888	6.45	I-77	1	150	230	27	2 1/4
For Heavy Duty						Net Wt. less Stand	Ship. Lb.
No.	Each	Type No.	†Diam. Tip In.	Watts	Volts		
291889	*\$9.70	I-78	1	225	115	27	4 1/2
291891	* 9.70	I-78	1	225	230	27	4 1/2
291892	*11.70	I-79	1 1/4	350	115	38	5 1/4
291894	*11.70	I-79	1 1/4	350	230	38	5 1/4

*Price includes radiating stand.
†Chisel type tips are employed on all sizes. Pyramid type tips may be substituted at 25 cents extra per iron.

Type CI
Primarily designed for light or medium work, such as is handled daily in many industrial plants. Especially suited, because of light weight and speed in heating, for work on telephone equipment, radio sets, light wires, electric instruments, switchboards, etc.

No.		Each	Type No.	†Diam. Tip In.	Watts	Wt., Oz.	
115 Volts	230 Volts					Net	Ship.
6A106	6A106G2	\$4.30	CI-80	3/8	80	17	22
6A107	6A107G2	4.30	CI-75	1/2	90	18	23
6A108	6A108G2	4.30	CI-76	3/4	110	19	24

†All tips and holders have the same thread size, thereby permitting interchangeability of tips on all three sizes of Type CI irons. However, irons are stocked with chisel type tips of sizes indicated in table. Any of the other sizes of chisel type tips or any similar size tips of the pyramid type may be substituted at 25 cents extra per iron.

For Extra Heavy Duty



Designed to meet the difficult requirements of heavy, continuous soldering.

Equipped with G-E Calrod unit which is cast directly into copper heating head. Tip is of calorized copper, chisel type, and is brazed to copper heating head, thereby providing efficient heat transfer. To renew tip, unbrazed it from heating head and braze (silver solder) on a new one.

63X535	3A101	\$25.00	1 1/8	650	\$6	..
6A113	6A113G2	45.00	2	1250	\$8 1/2	..

‡Weight pounds.

Chromalox Electric Melting Pots

For Soft Metals

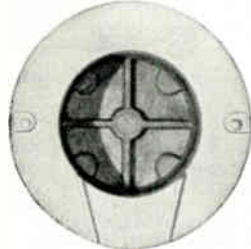
115, 208 and 230 Volts
800°F. Maximum Operating Temperature



Nos. P-100 to P-750 Inclusive, with Lifting Lugs. With No. MR-10 Thermostat for Automatic Control



Nos. P-15, P-25 and P-50 Showing Flexible Conduit and 3-Heat Switch



Top View of No. P-50 Showing Large Capacity with No Interior Obstructions

For melting solder, lead, babbitt, tin, type metal; but not zinc. For heating soldering irons or metal parts.

Heated by Chromalox ring units clamped to the bottom of the pot. The larger pots also have strip heaters clamped to the sides. Interior of pots left free for maximum capacity and low radiation losses.

Nos. P-15 to P-50 inclusive for manual control have the 3-heat switch mounted on conduit box, connected to pot by 3 feet of flexible conduit. The No. P-8 pot is single heat only, and has 3 feet of flexible conduit with armored attachment plug.

Nos. P-25 to P-750 inclusive for automatic temperature control are wired for single-heat operation, and have terminal box for line connections mounted on the side. Thermostat No. MR-10, JKR-10 or JR-10 and correct magnetic contactor should be used. When thermostat is ordered with melting pot, a steel protecting tube for the thermostat bulb is furnished attached to pot.

Nos. P-100 to P-750 pots inclusive, can be furnished for 3 phase 230 volt operation and should always be used with automatic temperature control.

All pots furnished for single-phase operations; when specified Nos. P-350 and P-750 can be furnished for 2-phase or open delta operation.

No.	For Single-Heat Operation Each	With 3-Heat Control Switch Each	CAPACITY, POUNDS				Ship. Wt. Lb.
			50-50 Solder	Lead	15-85 Babbitt	Tin	
*P-8	\$10.00	.....	8	10	9	6	15
P-15	18.50	\$19.50	15	18	17	12	20
P-25	28.00	30.00	29	36	34	23	26
P-50	38.00	40.00	52	64	60	41	54
P-100	85.00	.....	114	139	131	89	118
P-350	125.00	.....	368	450	420	290	280
P-750	190.00	.....	750	920	860	600	390

No.	Wattage	Voltage	DIMENSIONS, INCHES			
			Inside		Outside	
			Diam.	Depth	Diam.	Depth
*P-8	250	115 Only	2½	2½	5	6
P-15	500	115, 230	4	4	7	8½
P-25	750	115, 230	5¼	4¼	8	11
P-50	1380	115, 230	6¼	5¼	11	11
P-100	3000	115, 230	8	7½	15	15
P-350	6000	115, 230	11	11½	19	20
P-750	11000	230 Only	14¼	18	23	29

*Furnished single-heat with flexible conduit and armored plug.

G-E Metal-Melting Pots

For Soft Metals

Maximum Operating Temperature, 950°F.

For melting lead, babbitt, tin, solder, type metal, and similar alloys or metals except spelter or zinc.

Each pot consists of sheet steel cylindrical casing in which is supported a cast iron crucible. Space between casing and crucible is insulated with a heat insulator.

G-E Calrod cast-in immersion type heating units are suspended from rim of pot and extend directly into metal to be melted.



Nos. 2666404G1, 2666404G2, 2666407G1, or 2666407G2

No.	*Each	Volts	Solder		Babbitt	Tin	WATTAGE			Approx. Ship. Wt. Lb.
			50/50	Lead			High	Med.	Low	
2881146G3	\$32.50	230	28	35	†	25	750	.....	.....	50
2881146G2	32.50	115	28	35	†	25	750	.....	.....	50
2881146G5	32.50	230	28	35	33	25	1000	.....	.....	50
2881146G4	32.50	115	28	35	33	25	1000	.....	.....	50
2666404G1	95.00	230	100	135	125	90	2500	1500	1000	130
2666404G2	95.00	115	100	135	125	90	2500	1500	1000	130
2666407G1	136.00	230	330	425	390	270	5000	3000	2000	250
2666407G2	136.00	115	330	425	390	270	5000	3000	2000	250

Larger sizes to 3000 pounds capacity are also standard. *With heating unit installed. Less control equipment. †When this size pot is wanted for melting babbitt, it is necessary to use either No. 2881146G4 or 2881146G5.

No.	DIMENSIONS, IN.				No.	Each	Single Heating Units		Approx. Ship. Wt. Lb.
	INSIDE		OUTSIDE				Rating Watts	Ship. Wt. Lb.	
	Diam.	Dpth.	Diam.	Dpth.					
2881146G3	6	4	9	10	4X994	\$18.25	750	12	12
2881146G2	6	4	9	10	4X993	18.25	750	12	12
2881146G5	6	4	9	10	4X996	19.75	1000	12	12
2881146G4	6	4	9	10	4X995	19.75	1000	12	12
2666404G1	8	6	14	14	297549	19.75	1000	14	14
					297551	22.50	1500	14	14
2666404G2	8	6	14	14	297548	19.75	1000	14	14
					297550	22.50	1500	14	14
2666407G1	12	9	18¾	20½	297553	25.25	2000	30	30
					297555	31.00	3000	30	30
2666407G2	12	9	18¾	20½	297552	25.25	2000	30	30
					297554	31.00	3000	30	30

Small Portable Pots for Solder and Lead

Maximum Operating Temperature, 750°F.

Similar in construction to the pots listed above.

Heating unit is of G-E Calrod construction utilizing heavy wall steel tubing, and provided with a terminal cup.

Equipped with bail and 6-foot cord with suitable attaching plug, affording ready portability.



Approximate capacity: 50/50 solder, 12 pounds; lead, 16 pounds. Watts, 550.

Inside dimensions: diameter, 4¼ inches; depth, 3⅞ inches. Outside dimensions: diameter, 9 inches; depth, 6½ inches.

No.	Each	Volts	Approx. Ship. Wt. Lb.		No.	Each	Approx. Ship. Wt. Lb.	
			Wt. Lb.	Ship. Wt. Lb.			Wt. Lb.	Ship. Wt. Lb.
3887185G2	\$18.50	115	18	18	48X260	\$7.50	3	3
3887185G3	18.50	230	18	18	48X261	7.50	3	3

Vulcan Electric Solder Pots

High Speed and Standard



No. 1600

For tinning parts, leads, and fast dip soldering. Rate of speed of pot soldering depends on correct size of pot, size of parts, and melting point of the solder used.

Replaceable element. Always specify voltage wanted when ordering.

No. 1600 is cast in one piece and attached to a square base of heat resisting material. Flat type element.

No. 1606 is cast in two pieces well insulated from each other against heat loss. Flat type element.

No. 1701 has cast iron pot securely assembled in an outer casing of heavy sheet steel. Flat type element.

No. 1703 comprises a replaceable unit and cast iron pot.

Nos. 1700, 1702, 1704, 1705, 1706, and 1716 have heavy cast iron pots with outer casing of heavy sheet steel. Cartridge type elements.

No.	Each	Watts		DIMENSIONS, INCHES				Approx. Solder Cap. Lb.
		High	Low	INSIDE Diam.	INSIDE Depth	OUTSIDE Diam.	OUTSIDE Ht.	
1600	\$4.75	150	Heat	1 1/8	1 3/8	3 1/4	3 5/8	7/8
1606	5.25	350	Heat	3 1/8	1 1/2	5	3 1/2	3
1701	8.50	250	Single Heat	3	1 1/2	5	4 1/2	4
1700	15.00	200	120	80	2	1 1/2	5	4 1/2
1702	15.00	250	150	100	3	2 1/2	5	4 1/2
1703	8.50	200	Single Heat	1 1/2	1 3/8	4 3/8	4 3/8	7/8
1704	20.00	350	200	150	3 3/4	3	6	5 1/2
1705	20.00	550	275	137	4 3/4	3	7 1/2	5 1/2
1706	20.00	750	375	187	5	3 1/2	7 1/2	6 1/2
1716	55.00	2000	Single Heat	8	4	12	6 1/2	45

Vulcan Electric Glue Pots

Water Jacket Type with Thermostat Control



For 110-120 or 220-230 volts. Holds glue to a maximum temperature of 150°F. Heavy cast iron with attached base. Nos. 1808 to 1811, inside pot vitrified porcelain lined; Nos. 1812 and 1814, galvanized cast iron pot. With 8-foot Underwriters' listed heater cord and plug. Specify voltage and if for a.c. or d.c.

No.	Each	Cap.	Outside		No. Min. Req. to Heat from 70° to 145°F.	Watts	Ship. Wt. Lb.
			Diam. Inches	Height Inches			
1808	\$6.50	1/2 Pt.	5 3/4	5 1/4	45	150	7
1809	8.25	1 Pt.	6 1/4	6 1/2	45	200	10
1810	10.50	1 Qt.	7	7 1/4	45	250	13
1811	16.00	2 Qt.	8 1/2	8 1/2	45	450	17
1812	27.50	4 Qt.	8 3/4	11 1/8	50	700	23
1814	42.50	6 Qt.	12	10	50	1000	30

American Beauty Electric Glue Pots

Automatic Temperature Control



Nos. 1041, 1042, 1044

Pails are equipped with reversible wiping bailes.

Complete with cord, separable connector and attachment plug.

Constructed of aluminum alloy castings with heavy spun seamless copper, nickered, glue containers.

Outer enclosing casings of heavy sheet steel.

Made in all standard voltages.

In ordering, always specify whether for use on a.c. or d.c. current.

Water-Jacketed Type With Water Bath

In this type the glue pail is immersed in a water bath and the contents thus heated.

Cat. No.	Each	Cap. Qts.	OVER ALL DIMEN. INCHES		INSIDE DIMEN. INCHES			Approx. Ship. Wt. Lbs.
			Height	Diam.	Top	Bottom	Depth	
1041	\$27.50	1	6 3/8	8 1/4	4 3/4	4 1/4	4	440
1042	34.00	2	7 3/4	10	5 3/4	5 1/2	5 3/8	660
1044	54.00	4	10 1/2	12 3/8	7	6 1/4	7	880

Dry Type No Water Bath

The glue is put directly into the cast aluminum pot. Separate glue pails to fit into the pot can be furnished if desired.

141	\$21.00	1	6 1/2	7 3/4	4 7/8	4	4 1/8	250	10
142	26.50	2	8 5/8	8 3/4	6	5	5 1/2	350	14
144	37.00	4	10	10	7	6 1/4	7	660	25

G-E Automatic Style Gluepots

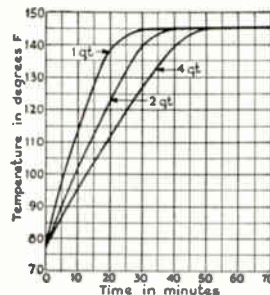
Made up of removable copper container for holding glue, heated copper jacket in contact with glue container, and steel protecting casing.



Heat insulation is placed between heated jacket and outer casing. Heating unit surrounds jacket and is completely mica-insulated.

A sensitive snap-acting thermostat is mounted on jacket.

Each pot is equipped with contact plug, 8 feet of rubber-covered cord, and socket attaching plug.



No.	Voltage		Complete Each	Less Cover Each	Cap. Qt.	Watts	OUTSIDE DIMEN., IN.		Approx. Ship. Wt. Lb.
	115 V. A.C. or D.C.	230 V. A.C. or D.C.					Ht.	Diam. Casing	
6A126	6A126G2	\$18.00	\$16.75	1	150	5 1/4	7 1/4	7	
6A111	6A111G2	20.00	18.75	2	250	7 1/4	7 1/4	8	
6A139	6A139G2	24.00	22.75	4	350	9	8 3/4	10	



G-E General Purpose Squirrel-Cage Induction Motors

¼ to 75 H.P., Constant-Speed, 2 and 3-Phase, 60 Cycles, Continuous Duty, 40° C. Rise

Type K—Normal Torque, Normal Starting Current



Type K, 2 H.P., 1800 R.P.M. Sleeve-Bearing Motor

The Type K Induction Motor is suitable for either full voltage or reduced voltage starting, depending upon the permissible starting current of the particular application. It is of the highest efficiencies and power factors of all the standard lines of induction motors, and is well fitted for driving pumps, fans, blowers, line shafting, and similar equipment requiring continuous operation with fairly constant load.

In general, this motor can be used for any application where continuous operation and constant speed are required together with a fairly constant load.

Type KF—Normal Torque, Low Starting Current

The essential difference between the Type KF and the Type K motors is in the design of the rotor slot. The rotor in the Type KF motor is designed to give a low starting current, permitting full voltage starting in sizes 30 h.p. and smaller. Obviously, this permits the use of a small, light, and compact magnetic starter.

The Type KF motor may be applied to any drive for which the Type K motor is suitable. It should be chosen where it is desirable to keep the first cost of apparatus as low as possible or where limitations as to weight or space make it desirable to use as small and compact control as is possible.

Type KG—High Torque, Low Starting Current

Type KG motor has high starting torque and low starting current and is intended to supply the need for motors having a higher percentage of starting torque than can be obtained from the Type K or the Type KF motors with full voltage applied, yet having a percentage of starting current equal to or lower than the Type KF motor, together with high full-load efficiency and power factor.

Recommended for such drives as compressors without unloading valves, conveyors which must be started loaded, and other applications requiring high starting torque.

Type KG motors starting at full voltage should be applied only where high torque at start is actually required and only when the driven mechanism will not be injured by the sudden application of this torque. This latter caution applies especially to drives or driven machines utilizing belts, either of the flat or V type, chains, or other flexible or flat elements.

G-E General-Purpose Squirrel-Cage Induction Motors

Type K—Normal Torque, Normal Starting Current
¼ to 1 Hp., Constant Speed, 2 and 3-Phase
60 Cycles, Continuous Duty, 40° C. Rise

All open-type, general-purpose, 60-cycle, polyphase motors, rated 40°C., when operated on 50 cycles at maintained voltages; that is, 110, 220, 440, and 550 will operate without injurious heating, not exceeding 50°C. rise. The 60-cycle horsepower ratings and prices apply. Synchronous speeds are ⅔ of those at 60 cycles.

Hp. at 40°C.	Frame No.	Sync. Speed RPM.	*Volts	Type K Motor Only			
				Sleeve Bearings Each	Ball Bearings Each		
¼	43	1800	220	\$15.85	\$19.60		
			110, 440, 550	17.45	21.20		
			220	17.80	21.55		
	45	1200	110, 440, 550	19.60	23.35		
			220, 440	29.25	33.25		
			110, 550	32.20	36.20		
½	47	3600	220	15.85	19.60		
			110, 440, 550	17.45	21.20		
			220	15.85	19.60		
	43	1800	110, 440, 550	17.45	21.20		
			220	23.25	27.00		
			110, 440, 550	25.60	29.35		
	45	1200	220, 440	36.00	40.00		
			110, 550	39.60	43.60		
			220	17.80	21.55		
	¾	47	3600	110, 440, 550	19.60	23.35	
				220	17.45	21.20	
				110, 440, 550	19.20	22.95	
45		1800	220, 440	29.25	33.25		
			110, 550	32.20	36.20		
			220, 440	45.00	49.00		
63		900	110, 550	49.50	53.50		
			208	50.00	54.00		
			110-220	59.00	63.00		
1		204	720	440-550	59.00	63.00	
				224	600	23.25	27.00
				110, 440, 550	25.60	29.35	
	63	1800	220, 440	22.50	26.50		
			110, 550	24.75	28.75		
			220, 440	36.00	40.00		
	73	1200	110, 550	39.60	43.60		
			208	44.00	48.00		
			110-220	59.00	63.00		
	224	720	440-550	66.00	70.00		
			225	600	22.50	27.00	
			110, 440, 550	25.60	29.35		
1½	49	3600	220, 440	23.25	27.00		
			110, 550	24.75	28.75		
			220, 440	36.00	40.00		
	63	1800	110, 550	39.60	43.60		
			208	44.00	48.00		
			110-220	59.00	63.00		
	224	720	440-550	66.00	70.00		
			225	600	22.50	27.00	
			110, 440, 550	25.60	29.35		
	2	67	3600	220, 440	29.25	33.25	
				110, 550	32.20	36.20	
				220, 440	29.50	33.50	
73		1800	110, 550	32.45	36.45		
			203	39.00	43.00		
			224	900	51.00	55.00	
225		720	110-220	66.00	70.00		
			254	600	80.00	84.00	
			284	514	93.00	98.00	
3		67	3600	220, 440	36.00	40.00	
				110, 550	39.60	43.60	
				203	1800	35.00	39.00
	204	1200	208	42.00	46.00		
			225	900	58.00	62.00	
			254	720	80.00	84.00	
	254	600	440-550	89.00	93.00		
			284	514	101.00	106.00	

*All standard 220 and 440-volt, polyphase, squirrel-cage motors, in frames 203 to 284, inclusive, except those 2-phase ratings as noted, have sufficient leads brought out so that they can be connected at the terminal board for either 220 or 440 volts.

†Two-phase motors in these ratings are not reconnectible for 220/440 volts.

Prices are for motor only. Pulley and base, when required, will be furnished at slight additional cost.

G-E General-Purpose Squirrel-Cage Induction Motors

Type K—Normal Torque, Normal Starting Current

Type KF—Normal Torque, Low Starting Current

Type KG—High Torque, Low Starting Current

1½ to 40 Hp., Constant Speed, 2 and 3-Phase, 60 Cycles, Continuous Duty, 40°C. Rise

All open-type, general-purpose, 60-cycle, polyphase motors, rated 40°C., when operated on 50 cycles at maintained voltages; that is, 110, 220, 440, 550, and 2200 will operate without

injurious heating, not exceeding 50°C. rise. The 60-cycle horsepower ratings and prices apply. Synchronous speeds are % of those at 60 cycles.

Hp. at 40°C.	Frame No.	Sync. Speed RPM	Volts	Type K Motor Only		Type KF Motor Only		Type KG Motor Only	
				Sleeve Bearings Each	Ball Bearings Each	Sleeve Bearings Each	Ball Bearings Each	Sleeve Bearings Each	Ball Bearings Each
1½	203	3600	208 110-220 440-550	\$44	\$48	...	...	...	...
	204	1800		42	46	...	...	...	...
	224	1200		49	53	...	...	...	...
	254	900		70	74	...	...	...	...
	254	720		89	93	...	...	...	...
	284	600		97	102	...	...	...	...
324	514	129	135	...	...	...	...
2	204	3600	208 110-220 440-550	51	55	...	...	...	...
	224	1800		49	53	...	...	...	...
	225	1200		55	59	...	...	...	...
	254	900		81	85	...	...	...	...
	284	720		97	102	...	...	...	...
	324	600		123	129	...	...	...	...
326	514	154	162	...	...	...	...
3	224	3600	208 110-220 440-550	58	62	...	...	...	...
	225	1800		55	59	...	...	...	...
	254	1200		67	71	...	...	\$70	\$74
	284	900		92	97	...	...	97	102
	†324	720		123	129	...	...	...	...
	326	600		147	154	...	...	...	...
365	514	202	212	...	...	...	...
5	225	3600	208 110-220 440-550	70	74	...	...	...	...
	254	1800		67	71	...	...	70	74
	284	1200		88	92	...	...	92	97
	†324	900		118	124	...	...	124	130
	†326	720		147	154	...	...	...	...
	†365	600		194	204	...	...	...	...
404	514	248	260	...	...	...	...
7½	254	3600	208 110-220 440-550	...	...	\$92	\$97	...	...
	284	1800		88	92	88	92	92	97
	†324	1200		112	118	112	118	118	124
	†326	900		141	148	141	148	148	155
	†365	720		194	204	194	204	...	...
	404	600		238	250	238	250	...	...
405	514	292	307	...	...	...	...
10	284	3600	208 110-220 440-550	...	...	118	124	...	...
	324	1800		112	118	112	118	118	124
	†326	1200		134	141	134	141	141	148
	†365	900		176	185	176	185	189	198
	404	720		238	250	238	250	...	...
	405	600		279	293	279	293	...	...
444	514	336	353	...	...	...	...
15	324	3600	208 110-220 440-550	...	...	141	148	...	...
	326	1800		134	141	134	141	141	148

Hp. at 40°C.	Frame No.	Sync. Speed RPM	Volts	Type K Motor Only		Type KF Motor Only		Type KG Motor Only		
				Sleeve Bearings Each	Ball Bearings Each	Sleeve Bearings Each	Ball Bearings Each	Sleeve Bearings Each	Ball Bearings Each	
15	†365	1200	220-440 550	\$176	\$185	\$176	\$185	\$189	\$198	
	404	900		216	227	216	227	232	244	
	405	720		279	293	279	293	...	...
	444	600		321	337	321	337	...	...
	445	514		419	440	...	...	...	...
	20	326		3600	110-220 440-550	168	176	...
364	1800	160		168	160	168	172	181
404	1200	208	216	227		216	227	232	244	
405	900	220-440	254	267		254	267	273	287	
444	720	550	321	337		321	337	...	...
445	600	400	420	400		420	...	...
504	514	484	508	...	...	...	...
25	§364S	3600	208 220-440 550	...	...	194	204	...	...
	365	1800		185	194	185	194	199	209	
	405	1200		254	267	254	267	273	287	
	444	900		292	307	292	307	336	353	
	...	900		2200	425	446	425	446	489	513
	445	720		208	400	420	400	420
...	720	2200	533	560	533	560	...	...
30	§365S	3600	208 220-440 550	...	...	267	280	...	...
	405	1800		254	267	254	267	273	287	
	444	1200		292	307	292	307	336	353	
	444	1200		2200	425	446	425	446	489	513
	445	900		208	364	382	364	382	419	440
	445	900		2200	497	522	497	522	572	601
504	720	208	463	486	463	486	...	...
504	720	2200	584	613	584	613	...	...
505	600	208	546	573	546	573	...	...
40	§404S	3600	220-440 550	...	...	322	338	...	...
	444	1800		307	322	307	322	353	371	
	444	1800		2200	440	462	440	462	506	531

*All standard 220 and 440-volt, polyphase, squirrel-cage motors, in frames 203 to 505 inclusive, except those 2-phase ratings as noted, have sufficient leads brought out so that they can be connected at the terminal board for either 220 or 440 volts.

†Two-phase motors in these ratings are not reconnectable for 220-440 volts.

‡If motors with 225 per cent starting torque are required in ratings 3 hp., 1800 rpm., and smaller, use price of normal-torque (Type K) motors and specify 225 per cent starting

torque. This applies only to motors built in frames 225 and below. For motors in frames 203 to 225 inclusive, at 1200 or 1800 rpm., requiring starting torques of more than 225 per cent, refer to our nearest house.

§These motors are recommended only for direct connection. For 75 hp. and higher, 3600 rpm., state direction of rotation.

||These ratings are built with volt-amp. rotor.

Prices are for motor only. Pulley and base, when required, will be furnished at slight additional cost.

G-E General-Purpose Squirrel-Cage Induction Motors

Type K—Normal Torque, Normal Starting Current
Type KF—Normal Torque, Low Starting Current
Type KG—High Torque, Low Starting Current
40 to 100 Hp., Constant Speed, 2 and 3-Phase, 60 Cycles, Continuous Duty, 40°C. Rise

All open-type, general-purpose, 60-cycle, polyphase motors, rated 40°C., when operated on 50 cycles at maintained voltages; that is, 110, 220, 440, 550, and 2200 will operate without injurious heating, not exceeding 50°C. rise. The 60-cycle horsepower ratings and prices apply. Synchronous speeds are 1/2 of those at 60 cycles.

Hp. at 40°C.	Frame No.	Sync. Speed RPM	*Volts	Type K Motor Only		Type KF Motor Only		Type KG Motor Only	
				Sleeve Bearings Each	Ball Bearings Each	Sleeve Bearings Each	Ball Bearings Each	Sleeve Bearings Each	Ball Bearings Each
40	445	1200	208	\$364	\$382	\$364	\$382	\$419	\$440
			220-440						
	445	1200	550	497	522	497	522	572	601
			2200						
	504	900	208	421	442	421	442	484	508
220-440									
504	900	550	542	569	542	569	623	654	
		2200							
505	720	208	546	573	546	573	...	...
		220-440							
50	\$405S	3600	208	...	...	401	421	...	...
			220-440						
	445S	1800	550	382	401	382	401	439	461
			2200						
	445S	1800	208	515	541	515	541	592	622
220-440									
504	1200	550	421	442	421	442	484	508	
		2200							
504	1200	208	542	569	542	569	623	654	
		2200							
505	900	208	496	521	496	521	570	599	
		220-440							
505	900	550	617	648	617	648	710	746	
		2200							
60	\$444Z	3600	208	...	...	464	487	...	...
			220-440						
	\$444Z	3600	550	...	...	597	627	...	...
			2200						
	504S	1800	208	442	464	442	464	508	533
220-440									
504S	1800	550	563	591	563	591	647	679	
		2200							
505	1200	208	496	521	496	521	570	599	
		220-440							
505	1200	550	617	648	617	648	710	746	
		2200							
75	\$445Z	3600	208	...	...	599	629	...	...
			220-440						
	\$445Z	3600	550	...	...	732	769	...	...
			2200						
	\$505S	1800	208	521	547	521	547	599	629
220-440									
\$505S	1800	550	642	674	642	674	738	775	
		2200							
100	\$505Z	3600	208	...	...	833	875	...	...
			220-440						
\$505Z	3600	550	...	...	954	1002	...	...
		2200							

*All standard 220 and 440-volt, polyphase, squirrel-cage motors, in frames 204 to 505 inclusive, except those 2-phase ratings as noted, have sufficient leads brought out so that they can be connected at the terminal board for either 220 or 440 volts.

‡These motors are recommended only for direct connection. For 75 hp. and higher, 3600 rpm., state direction of rotation.

¶These ratings are built with volt-amp. rotor.

§No frames listed.

Prices are for motor only. Pulley and base, when required, will be furnished at slight additional cost.

Type K Squirrel-Cage Splash-Proof Motors

1/4 to 25 Hp., Constant Speed, 2 and 3-Phase 60 Cycles



Typical of Frames Nos. 204-326

These motors are constructed to operate under conditions subject to dripping and splashing liquids, particularly in certain industries, such as dairies, meat packing plants, etc. where, for obvious reasons, it is necessary to "hose-down" the equipment regularly, at least once a day. Since in order to meet these conditions, these motors are constructed to exclude falling water or other materials coming directly at the motor, at an angle not exceeding 100° from the vertical, they can and have been used successfully out of doors without pump-house or other protection, in those localities where the hazards of climate are not greater than those encountered in the conditions for which they are designed.

110, 208, 220, 440, and 550 Volts

Hp. at 50°C.	Frame No.	Sync. Speed RPM.	Motor Only		Hp. at 50°C.	Frame No.	Sync. Speed RPM.	Motor Only															
			Sleeve Bearings Each	Ball Bearings Each				Sleeve Bearings Each	Ball Bearings Each														
1/4	204	600	\$58.00	600	3/4	254	600	\$91.00	600														
										1/2	204	900	52.00	284	514	107.00							
																	1	204	720	68.00	204	1800	43.00
3/4	204	1200	47.00	254	720	91.00	254	600	100.00														
										224	900	60.00	284	514	115.00								
																225	720	75.00					

208, 220, 440, and 550 Volts

1 1/2	204	3600	\$52.00	7 1/2	324	1200	\$130.00																		
								224	1800	900	160.00														
												224	1200	58.00	365	720	222.00								
																		254	900	81.00	404	600	274.00		
																								254	720	100.00	405	514	331.00
284	600	111.00	10	324	1800	130.00																			
							324	514	147.00	326	1200	153.00													
2	224	3600	60.00	15	326	1800	153.00																		
								225	1800	58.00	365	900	203.00												
														225	1200	64.00	404	720	274.00						
																				254	900	92.00	405	600	317.00
324	600	141.00	20	326	1200	203.00																			
							326	514	174.00	404	900	251.00													
3	224	3600	67.00	25	404	900	251.00																		
								225	1800	64.00	405	720	317.00												
														254	1200	78.00	444	600	370.00						
																				284	900	106.00	445	514	473.00
326	600	166.00	20	404	1200	251.00																			
							365	514	230.00	405	900	291.00													
5	225	3600	79.00	25	444	720	370.00																		
								254	1800	78.00	445	600	453.00												
														284	1200	101.00	504	514	554.00						
																				324	900	136.00	365	1800	212.00
365	600	222.00	25	444	900	340.00																			
							404	514	284.00	445	720	453.00													
7 1/2	284	1800	101.00	504	600	532.00																			
							505	514	645.00																

Prices are for motor only. Pulley and base, when required, will be furnished at slight additional cost.

G-E Totally-Enclosed and Totally-Enclosed, Fan-Cooled Squirrel-Cage Induction Motors

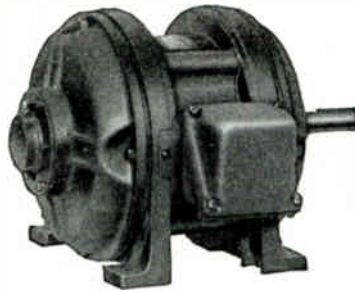
Type K—Normal Torque, Normal Starting Current

Type KF—Normal Torque, Low Starting Current

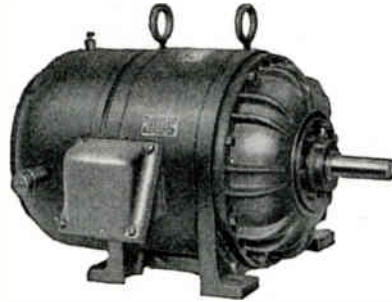
Type KG—High Torque, Low Starting Current

Standard and Explosion-Proof—Enclosed, 1/6 to 5 Hp.; Fan-Cooled, 3/4 to 20 Hp. Constant Speed, 2 and 3-Phase, 60 Cycles, Continuous Duty, 55°C. Rise

G-E has a complete line of totally-enclosed and totally-enclosed, fan-cooled motors, which have been tested and listed by the Underwriters' Laboratories, for Class I, Group D, hazardous gas conditions (this means explosive atmospheres equal to high-test gasoline, or less), and for Class II, Group G, hazardous dust conditions (this means grain dust, or less). Motors may be furnished bearing the Underwriters' label indicating their suitability for either one of these conditions.



Type K—Totally-Enclosed Motor



Types KF and KG—Totally-Enclosed, Fan-Cooled Motor

The fan-cooled type of enclosure essentially involves motors totally enclosed with an additional housing which has an external fan mounted at the end opposite the pulley. This fan draws air and directs it over the motor frame along especially designed ventilating paths, and exhausts it at the pulley end. The

fans on the motor rotor keep the air inside the motor agitated, thus dissipating heat from the motor to the frame.

In the smaller ratings, motors are built in totally-enclosed (not fan-cooled) frames. In the larger ratings, the totally-enclosed, fan-cooled design is standard. The latter type permits total enclosure of a motor, yet allows full open-motor horsepower rating in those sizes which would otherwise require frames larger than those of open ratings.

The explosion-proof motors are furnished with an external fan, made of nonsparking metal, similar to that on the standard totally-enclosed, fan-cooled motors.

G-E Totally-Enclosed Squirrel-Cage Induction Motors

Type K—Normal Torque, Normal Starting Current—Standard and Explosion-Proof 1/6 to 5 Hp., Constant Speed, 2 and 3-Phase, 60 Cycles, Continuous Duty, 55°C. Rise

Hp. at 55°C.	Frame No.	Sync. Speed RPM.	Type K Motor Only		Hp. at 55°C.	Frame No.	Sync. Speed RPM.	*Volts	Type K Motor Only		
			Stand-ard, Each	Explosion-Proof, Each					Stand-ard, Each	Explosion-Proof, Each	
1/6	43	1800	220	†\$17.85	†\$23.85	3/4	67	3600	220, 440	‡\$32.25	‡\$41.25
			110, 440, 550	†19.45	†25.45				110, 550	‡35.20	‡44.20
	45	1200	220	†19.80	†25.80	73	1800	220, 440	‡32.50	‡41.50	
			110, 440, 550	†21.60	†27.60			110, 550	‡35.45	‡44.45	
	63	900	220, 440	‡32.25	‡38.25	204	1200	208	47.00	63.00	
			110, 550	‡35.20	‡41.20			224	60.00	78.00	
1/4	47	3600	220	†17.85	†23.85	254	720	110-220	91.00	113.00	
			110, 440, 550	†19.45	†25.45			440-550	100.00	122.00	
	43	1800	220	†17.85	†23.85	1	77	3600	220, 440	‡39.00	‡48.00
			110, 440, 550	†19.45	†25.45				110, 550	‡42.60	‡51.60
	45	1200	220	†25.25	†31.25	204	1800	208	43.00	59.00	
			110, 440, 550	†27.60	†33.60			204	50.00	66.00	
63	900	220, 440	‡39.00	‡48.00	225	900	110-220	67.00	85.00		
		110, 550	‡42.60	‡51.60			440-550	113.00	144.00		
204	600	208	58.00	74.00	324	600	440-550	144.00	186.00		
		110-220	58.00	74.00			224	68.00	86.00		
440-550		440-550	68.00	86.00	1 1/2	224	3600	208	51.00	69.00	
		220	†19.80	†25.80				225	65.00	83.00	
1/3	47	3600	110, 440, 550	†21.60	†27.60	254	900	110-220	81.00	103.00	
			220	†19.45	†25.45			440-550	144.00	169.00	
	45	1800	110, 440, 550	†21.20	†27.20	326	600	440-550	169.00	210.00	
			220, 440	‡32.25	‡41.25			254	104.00	126.00	
	63	1200	110, 550	‡35.20	‡44.20	254	1800	208	78.00	100.00	
			220, 440	‡48.00	‡57.00			254	78.00	100.00	
73	900	110, 550	‡52.50	‡61.50	284	900	440-550	108.00	139.00		
		208	58.00	74.00			326	720	169.00		
204	720	110-220	58.00	74.00	3	284	3600	208	135.00	166.00	
		440-550	68.00	86.00				284	103.00	133.00	
1/2	49	3600	220	†25.25	†31.25	324	1200	440-550	133.00	169.00	
			110, 440, 550	†27.60	†33.60			324	900	139.00	
	63	1800	220, 440	‡25.50	‡34.50	5	324	3600	208	163.00	204.00
			110, 550	‡27.75	‡36.75				110-220	163.00	204.00
	73	1200	220, 440	‡39.00	‡48.00	326	1800	440-550	156.00	197.00	
			110, 550	‡42.60	‡51.60			208	163.00	204.00	
204	900	208	52.00	68.00	224	720	110-220	68.00	86.00		
224	720	110-220	68.00	86.00	225	600	440-550	75.00	93.00		

‡Two-phase motors in these ratings are not reconnectible for 220/440 volts.

For 50-cycle motors, use price of next larger horsepower at same speed. Frame size may be different. The 50-cycle synchronous speeds are 2/3 of those at 60 cycles.

Explosion-proof motors are for Class I, Group D, hazardous gas conditions, tested and listed by Underwriters' Laboratories. Motors for Class II, Group G, hazardous dust conditions are priced the same as standard enclosed motors. However, motors must be specified for this service in order that they may bear the proper Underwriters' label.

Prices are for motor only. Pulley and base, when required, will be furnished at slight additional cost.

*All standard 220 and 440-volt, polyphase, squirrel-cage motors, in frames 204 to 505 inclusive, except those 2-phase ratings as noted, have sufficient leads brought out so that they can be connected at the terminal board for either 220 or 440 volts.
 †These ratings have sleeve bearings. For motors with ball bearings, add \$3.75.
 ‡These ratings have sleeve bearings. For motors with ball bearings, add \$4.00.

G-E Totally-Enclosed, Fan-Cooled Squirrel-Cage Induction Motors

Type K—Normal Torque, Normal Starting Current

Type KF—Normal Torque, Low Starting Current

Type KG—High Torque, Low Starting Current

Standard and Explosion-Proof

¾ to 100 Hp., Constant Speed, 2 and 3-Phase, 60 Cycles, Continuous Duty, 55°C. Rise

Hp. at 55°C.	Frame No.	Sync. Speed RPM.	*Volts	Standard Motor Only			Explosion-Proof Motor Only			Hp. at 55°C.	Frame No.	Sync. Speed RPM.	*Volts	Standard Motor Only			Explosion-Proof Motor Only			
				Ball Bearings			Ball Bearings							Ball Bearings			Ball Bearings			
				Type K Each	Type KF Each	Type KG Each	Type K Each	Type KF Each	Type KG Each					Type K Each	Type KF Each	Type KG Each	Type K Each	Type KF Each	Type KG Each	Type K Each
¾	11225	720	110	\$93			\$111			25	504	600	220-440-550	\$764	\$764		\$855	\$855		
	254	720		112			134				208									
	254	600		121			143				220-440	358		358	\$377	424	424	\$443		
1½	254	720	208	121			143			30	405	1800	208-550	438	438	482	529	529	573	
	284	600		140			164				444	1200			571	571		662	662	
	224	3600		78			96				445	1200		2200						
2	225	1800	220	76			94			40	445	900	220-440-550	546	546	601	637	637	692	
	225	1200		82			100				504	900		2200	679	679		770	770	
	254	900		113			135				504	720		220-440-550	764	764		855	855	
3	284	720	440	140			164			40	505	600	220-440-550	901	901		992	992		
	324	600		183			214				405	3600		208						
	224	3600		85			103				445	1200		2200	461	461	507	552	552	598
5	225	1800	550	82			100			40	445	1800	220-440-550	594	594		685	685		
	254	1200		99	\$102	121		\$124			505	600		220-440-550	901	901		992	992	
	284	900		135	140	159		164			405	3600		2200	477				543	
7½	324	720	220-440-550	183			214			50	444	1800	220-440-550	623			689			
	326	600		207			238				445	1800		2200	461	461	507	552	552	598
	225	3600		97			115				445	1800		2200	594	594		685	685	
10	254	1800	208	99			102	121	124	50	445	1800	220-440-550	546	546	601	637	637	692	
	284	1200		131			135	155	159		504	1200		2200	679	679		770	770	
	324	900		178			184	209	215		504	900		220-440-550	695	695	758	786	786	849
15	324	900	208	207			238			50	504	900	220-440-550	816	816		907	907		
	326	600		281			326				504	900		2200	695	695	758	786	786	849
	254	3600		131	131	135	155	155	159		505	900		2200	816	816		907	907	
20	284	1800	110-220	172	172	178	203	203	209	50	505	720	220-440-550	901	901		992	992		
	324	1200		201	201	208	232	232	239		505	720		208						
	326	900		281	281		326	326			504	3600		2200	650				741	
25	326	600	208-550	342	342		408	408		50	444	1800	220-440-550	796			887			
	284	3600		161			185				445	1800		2200	630	630	687	721	721	778
	324	1800		172	172	178	203	203	209		504	1800		2200	763	763		854	854	
30	326	1200	440-550	194	194	201	225	225	232	50	504	1800	220-440-550	695	695	758	786	786	849	
	326	900		263	263	276	308	308	321		504	1200		2200	816	816		907	907	
	404	720		342	342		408	408			504	1200		2200	816	816		907	907	
40	405	600	550	383	383		449	449		50	504	1200	220-440-550	818	818		909	909		
	324	3600		201			232				505	900		220-440-550	818	818		909	909	
	326	1800		194	194	201	225	225	232		505	900		2200	818	818		909	909	
50	326	1200	208	263	263	276	308	308	321	50	504	3600	220-440-550	752			843			
	404	900		320	320	336	386	386	402		504	3600		2200	885			976		
	405	720		383	383		449	449			504	1800		2200	729	729	795	820	820	886
75	444	600	110-220	482	482		573	573		50	504	1800	220-440-550	850	850		941	941		
	326	3600		228			259				505	1200		2200	818	818		909	909	
	364	1800		247	247	259	292	292	304		505	1200		2200	939	939		1030	1030	
100	404	1200	208	320	320	336	386	386	402	75	505	3600	220-440-550	1046			1137			
	405	900		358	358	377	424	424	443		505	3600		2200	1179			1270		
	444	720		482	482		573	573			505	3600		2200	1179			1270		
125	445	600	550	600	600		691	691		75	505	1800	220-440-550	964	964	1042	1055	1055	1133	
	365	1800		272	272	286	317	317	331		505	1800		2200	1085	1085		1176	1176	
	405	1200		358	358	377	424	424	443		505	1800		2200	1085	1085		1176	1176	
150	444	900	220-440-550	438	438	482	529	529	573	100	6325Z	3600	220-440-550	1441			1585			
	445	720		600	600		691	691			6325Z	3600		2200	1562			1706		

*All standard 220 and 440-volt, polyphase, squirrel-cage motors, in frames 204 to 505 inclusive, except those 2-phase ratings as noted, have sufficient leads brought out so that they can be connected at the terminal board for either 220 or 440 volts.

†Two-phase motors in these ratings are not reconnectable for 220/440 volts.

‡If motors with 225 per cent starting torque are required in ratings 3 hp., 1800 rpm., and smaller, use price of normal-torque (Type K) motors and specify 225 per cent starting torque. This applies only to motors built in frames 225 and below. For motors in frames 204 to 225 inclusive, at 1200 or 1800 rpm., requiring starting torques of more than 225 per cent, refer to our nearest house.

§These motors recommended only for direct connection. Order should specify direction of rotation.

**Type KG motor is built in larger frame.

††These ratings are built with Valv-amp rotor.

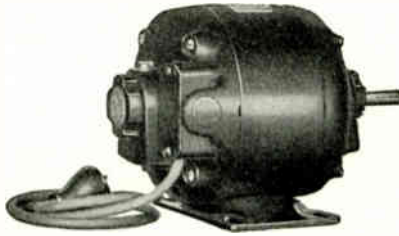
For 50-cycle motors, use price of next larger horsepower at same speed. Frame size may be different. For example, price of Type K, fan-cooled, 3-hp., 4-pole motor for 50-cycle service is \$99. The 50-cycle synchronous speeds are ⅘ of those at 60 cycles.

Explosion-proof motors are for Class I, Group D, hazardous gas conditions, tested and listed by Underwriters' Laboratories. Motors for Class II, Group G, hazardous dust conditions are priced the same as standard fan-cooled motors. However, motors must be specified for this service in order that they may bear the proper Underwriters' label.

Prices are for motor only. Pulley and base, when required, will be furnished at slight additional cost.

G-E Type KH General-Purpose Fractional-Horsepower Motors

1/20 to 1/3 Hp., Constant Speed, Single-Phase
60 Cycles, Continuous Duty, 40° C. Rise
Wound Stator, Split-Phase Starting, Solid Base



Type KH motors have moderate starting and accelerating torque and large reserve power. Suitable for driving any easily started device requiring constant speed, such as oil burners, blowers and ironing machines.

The 1/8 and 1/4-hp. short service motors are for devices requiring high maximum output but which operate only a small part of the time.

Base is equipped with slots for belt tightening. Drip-proof end shields, built-in terminal box, and a device to eliminate end bump are included in the 40 series frames.

All motors are reconnectable for either rotation. All rated for continuous duty.

Hp. at 40° C.	Frame No.	Volts	Full Load Speed RPM.	Motor Only Sleeve Bearings Each
1/20	23	110	1725	\$9.00
	35	110	1140	10.30
	45	110	860	12.30
1/12	25	110	3450	13.50
	35	110	1725	9.00
	43	110	1140	12.00
1/8	47	110	860	14.20
	33	110	3450	13.50
	43	110	1725	8.00
1/6	45	110	1140	12.30
	49	110	860	18.50
	43	110	1725	8.20
1/4	47	110	1140	14.20
	47	110	3450	12.30
	45	110	1725	9.45
1/3	47	110	3450	14.20

Furnished with 8-foot cord and plug at 40 cents extra.

While these motors are considered quiet, a resilient base can be furnished on long hour service motors at a slight additional cost where more quiet operation is desired.

Prices of motors with other voltages and frequencies upon application.

G-E Type KC General-Purpose Fractional-Horsepower Motors

1/8 to 1 Hp., Constant Speed, 2 and 3-Phase
60 Cycles, Continuous Duty, 40° C. Rise
Capacitor Start Induction Run, Solid Base



Designed for high starting and pull-up torque to meet the requirements of such machines as stokers, pumps, compressors, etc.

The starting torque ranges from 400 per cent of full load torque on the 1/8-hp. rating to 275 per cent of full load torque on the 1-hp. rating.

The maximum and pull-up torques are approximately 250 to 300 per cent of the full load torque of the motor.

All 40-frame motors, have a terminal board built in the switch-end shield. All 30, 60, and 70-frame motors have the leads brought out to a conduit box located on the side of the motor stator. Rotation may be easily reversed.

All motors are rated for continuous service and will give long care-free dependable service.

Hp. at 40° C.	Frame No.	Volts	Full Load Speed RPM.	Motor Only Sleeve Bearings Each
1/8	43	110	1725	\$10.05
	45	110/220	1140	15.85
	49	110/220	860	23.25
1/6	45	110	1725	10.05
	47	110/220	1140	17.80
	63	110/220	860	29.25
1/5	45	110	1725	10.45
	47	110/220	3450	15.85
	47	110	1725	11.30
1/4	48	110/220	1140	23.25
	67	110/220	860	36.00
	47	110/220	3450	17.80
1/3	47	110/220	1725	17.45
	65	110/220	1140	29.25
	77	110/220	860	45.00
1/2	49	110/220	3450	23.25
	63	110/220	1725	22.50
	77	110/220	1140	36.00
3/4	67	110/220	3450	29.25
	73	110/220	1725	29.50
	67	110/220	3450	36.00

Prices for motors with resilient bases and other voltages and frequencies upon application.

G-E Type K General-Purpose Fractional-Horsepower Motors

1/6 to 1 Hp., Constant Speed, 2 and 3-Phase, 60/50 Cycles, Continuous Duty, 40° C. Rise
Wound Stator, Squirrel-Cage Rotor, Solid Base



Type K polyphase motor has excellent starting and accelerating torque and large reserve power. It will start and drive any device operated by any of the single-phase motors or corresponding rating. As far as possible, the single-phase and polyphase motors are built from interchangeable mechanical parts and have similar external appearance. Mounting interchangeability between single-phase and polyphase motors is maintained.

Hp. at 40° C.	Frame No.	Volts	Full Load Speed RPM.	Motor Only Sleeve Bearings Each
1/6	43	220	1725	\$15.85
	45	220	1140	17.80
	63	220/440	860	29.25
1/4	47	220	3450	15.85
	43	220	1725	15.85
	45	220	1140	23.25
1/3	63	220/440	860	36.00
	47	220	3450	17.80
	45	220	1725	17.45
1/2	63	220/440	1140	29.25
	73	220/440	860	45.00
	49	220	3450	23.25
3/4	53	220/440	1725	22.50
	73	220/440	1140	36.00
	67	220/440	3450	29.25
1	73	220/440	1725	29.50
	67	220/440	3450	36.00

Prices for motors with resilient bases and other voltages and frequencies upon application.

G-E Single-Phase Motors

Type SCR

1/4 to 10 Hp., 60 Cycles, 220 Volts



The Type SCR motor is a constant-speed repulsion-induction single-phase motor intended for use in general purpose applications. This motor combines the high starting torque of the repulsion motor with the excellent speed characteristics of an induction motor, and is consequently a successful motor for use in a wide range of industrial applications.

The following list of ratings of type SCR single-phase motors covers sizes and designs which meet the majority of application requirements usually found in industry.

Hp. at 40°C.	Frame No.	Sync. Speed RPM	Type SCR Motor Only	
			Sleeve Bearings Each	Ball Bearings Each
1/4	225	600	.....	.....
1/3	224	720	.....	.....
	254	600	.....	.....
1/2	224	900	\$70.00	\$74.00
	224	720	.....	.....
	254	600	.....	.....
3/4	204	1200	49.00	53.00
	225	900	89.00	93.00
	225	720	.....	.....
	255	600	.....	.....
1	204	1800	37.00	41.00
	224	1200	64.00	68.00
	254	900	105.00	110.00
	254	720	.....	.....
1 1/2	204	3600	51.00	55.00
	224	1800	49.00	53.00
	225	1200	82.00	86.00
	254	900	132.00	139.00
2	224	3600	67.00	71.00
	A225	1800	64.00	68.00
	254	1200	120.00	126.00
	255	900	157.00	165.00
3	224	3600	89.00	93.00
	A225	1800	82.00	86.00
	255	1200	145.00	152.00
	324	900	200.00	210.00
5	225	3600	144.00	151.00
	254	1800	120.00	126.00
	324	1200	169.00	177.00
	326	900	279.00	293.00
7 1/2	326	3600	182.00	191.00
	324	1800	169.00	177.00
	326	1200	240.00	252.00
10	326	3600	.....	260.00
	326	1800	224.00	235.00

SCR motors through 5 hp., 110/220 volts; SCR motors 7 1/2 and 10 hp., 220/440 volts.

Frame Nos. 204 to 225 inclusive, all speeds 1800 rpm. and lower, have wool-yarn-packed bearings. Speeds higher than 1800 rpm., also frame Nos. 254 through 326, all speeds, have oil-ring-lubricated sleeve bearings.

Where quiet operation is essential, sleeve-bearing motors should be quoted in preference to ball-bearing motors.

Prices are for motor only. Pulley and base, when required, will be furnished at slight additional cost.

For additional information, and for single-phase motors with mechanical or electrical variations not provided for by the motors listed here, refer to our nearest house.

G-E General Purpose Gear Motors

40° C., Continuous Rated

Types K, KG and M—2 and 3-Phase, 60 Cycles, 208, 220, 440 and 550 Volts

Type B—D.C., Shunt-Wound, 115 or 230 Volts

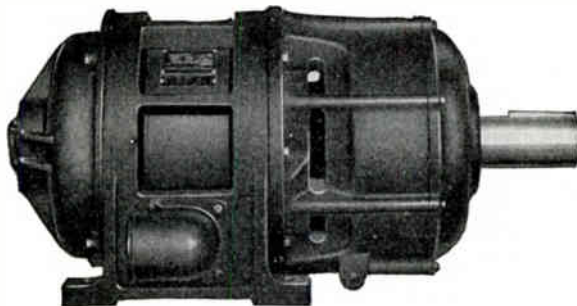
Type SCR—Single-Phase, 60 Cycles, 110-220 Volts



Typical of Riveted-Frame, Squirrel-Cage Induction Designs, Single-Reduction

The G-E Gear Motor consists of a highly efficient straight-line helical gear reduction unit built into the end frame of a standard ball-bearing, normal speed motor. Connection to the driven machine may be either direct, or through a belt, chain or gear. The listed low speed r.p.m. are based on 1800 r.p.m. synchronous speed and full load r.p.m. will be slightly lower depending on the variation of full load motor speed from synchronous speed. Access to entire gear mechanism is obtained by removing front cover plate. Gears run in oil. Oil is kept in and dust kept out by felt seals on shaft apertures. Low working stresses plus the helical gear construction eliminate the noises associated with geared speed reduction.

Gear motors may be furnished for vertical or flange mounting and with all mechanical and electrical modifications available with standard general purpose motors.



Typical of Skeleton-Frame, Squirrel-Cage Induction Designs, Single-Reduction

In applying gear motors the following information should be obtained and sent with order:

Torque—starting (high) (low); accelerating (high) (low); running: constant torque, constant speed, adjustable speed; variable torque, periodic; intermittent, varies with speed, give duty cycle, including time and magnitude.

Speed—constant, variable, adjustable.

Load—continuous (8 to 10 hours daily) (24 hours daily); intermittent, frequent starts and sudden stops, reversing.

Method of drive—directly mounted, coupled, belt or chain (give type of belting and relative position of shafts), pinion.

Space limitations.

Ambient conditions—hazards, temperature, protection, atmosphere (abrasive) (corrosive) (explosive) (excessive moisture).

Attention—regular (skilled), uncertain.

The normal control for the type of motor involved should be selected from the standard G-E control shown on other pages of this catalogue.

G-E General-Purpose Gear Motors
Types K, KF, KG and M—2 and 3-Phase, 60 Cycles, 208, 220, 440, and 550 Volts
Type B—D.C., Shunt-Wound, 115 or 230 Volts
Type SCR—Single Phase, 60 Cycles, 110-220 Volts
Continuous Duty, 40°C. Rise

Hp. at 40°C.	Gear Motor Frame No.	Low Speed RPM.	Motor Only					Hp. at 40°C.	Gear Motor Frame No.	Low Speed RPM.	Motor Only		
			Type K Each	Type KG Each	Type M Each	Type B Each	Type SCR Each				Type K or KF Each	Type KG Each	Type M Each
1	204128	600, 572, 540, 507	\$79	...	...	\$126	\$81	10	324364	27 5, 25 5, 23, 21	\$500	\$506	\$624
	204128	475, 438, 396, 360	81	...	...	128	83		324368	19 5, 17, 15, 13	584	590	708
	204128	323, 300, 273, 243	85	...	...	132	87	15	326152	600, 572, 540, 507	287	294	483
	204132	225, 200, 174, 154	94	...	...	141	96		326152	475, 438, 396, 360	294	301	490
	204228	145, 135, 124, 114	103	...	...	150	105		326156	323, 300, 273, 243	312	319	508
	204232	103, 93, 83, 71	116	...	...	163	118		326160	225, 200, 174, 154	339	346	535
	204336	63 5, 56 5, 49, 43.5	132	...	...	179	134		326256	145, 135, 124, 114	367	374	563
	204336	40 5, 37 5, 34, 31	143	...	...	190	145		326260	103, 93, 83, 71	424	431	620
	204340	27 5, 25 5, 23, 21	159	...	...	206	161		326360	63 5, 56 5, 49, 43.5	497	504	693
	204344	19 5, 17, 15, 13	180	...	...	227	182		326364	40 5, 37 5, 34, 31	553	560	749
1½	224128	600, 572, 540, 507	98	...	\$173	150	105	20	326368	27 5, 25 5, 23, 21	625	632	821
	224128	475, 438, 396, 360	101	...	176	153	108		326372	19 5, 17, 15, 13	728	735	924
	224132	323, 300, 273, 243	107	...	182	159	114		364156	600, 572, 540, 507	330	343	565
	224136	225, 200, 174, 154	118	...	193	170	125		364156	475, 438, 396, 360	342	355	577
	224232	145, 135, 124, 114	126	...	201	178	133		364160	323, 300, 273, 243	366	379	601
	224236	103, 93, 83, 71	143	...	218	195	150		364164	225, 200, 174, 154	403	416	638
	224340	63 5, 56 5, 49, 43.5	163	...	238	215	170		364260	145, 135, 124, 114	439	452	674
	224340	40 5, 37 5, 34, 31	178	...	253	230	185		364264	103, 93, 83, 71	514	527	749
	224344	27 5, 25 5, 23, 21	196	...	271	248	203		364364	63 5, 56 5, 49, 43.5	609	622	844
	224348	19 5, 17, 15, 13	222	...	297	274	229		364368	40 5, 37 5, 34, 31	685	698	920
2	*225132	600, 572, 540, 507	114	...	187	170	129	25	364372	27 5, 25 5, 23, 21	786	799	1021
	*225132	475, 438, 396, 360	116	...	189	172	131		364376	19 5, 17, 15, 13	922	935	1157
	*225136	323, 300, 273, 243	123	...	196	179	138		365156	600, 572, 540, 507	358	373	618
	*225140	225, 200, 174, 154	135	...	208	191	150		365156	475, 438, 396, 360	371	386	631
	*225236	145, 135, 124, 114	145	...	218	201	160		365160	323, 300, 273, 360	399	414	659
	*225240	103, 93, 83, 71	164	...	237	220	179		365164	225, 200, 174, 154	445	460	705
	*225340	63 5, 56 5, 49, 43.5	188	...	261	244	203		365260	145, 135, 124, 114	487	502	747
	*225344	40 5, 37 5, 34, 31	205	...	278	261	220		365264	103, 93, 83, 71	573	588	833
	*225348	27 5, 25 5, 23, 21	228	...	301	284	243		365368	63 5, 56 5, 49, 43.5	683	698	943
	*225352	19 5, 17, 15, 13	260	...	333	316	275		365372	40 5, 37 5, 34, 31	767	782	1027
3	225136	600, 572, 540, 507	126	\$129	210	201	153	30	365376	27 5, 25 5, 23, 21	877	892	1137
	225136	475, 438, 396, 360	129	132	213	204	156		365380	19 5, 17, 15, 13	1029	1044	1289
	225140	323, 300, 273, 243	137	140	221	212	164		405160	600, 572, 540, 507	446	466	681
	225144	225, 200, 174, 154	149	152	233	224	176		405160	475, 438, 396, 360	463	483	698
	225240	145, 135, 124, 114	161	164	245	236	188		405164	323, 300, 273, 243	500	520	735
	225244	103, 93, 83, 71	183	186	267	258	210		405168	225, 200, 174, 154	557	577	792
	225344	63 5, 56 5, 49, 43.5	211	214	295	286	238		405264	145, 135, 124, 114	608	628	843
	225348	40 5, 37 5, 34, 31	232	235	316	307	259		405268	103, 93, 83, 71	713	733	948
	225352	27 5, 25 5, 23, 21	258	261	342	333	285		405368	63 5, 56 5, 49, 43.5	839	859	1074
	225356	19 5, 17, 15, 13	296	299	380	371	323		405372	40 5, 37 5, 34, 31	944	964	1179
5	254140	600, 572, 540, 507	151	154	254	293	206	40	405376	27 5, 25 5, 23, 21	1081	1101	1316
	254140	475, 438, 396, 360	155	158	258	297	210		405380	19 5, 17, 15, 13	1270	1290	1505
	254144	323, 300, 273, 243	163	166	266	305	218		444164	475, 438, 396, 360	521	570	793
	254148	225, 200, 174, 154	178	181	281	320	233		444168	323, 300, 273, 243	561	610	833
	254244	145, 135, 124, 114	190	193	293	332	245		444172	225, 200, 174, 154	624	673	896
	254248	103, 93, 83, 71	219	222	322	361	274		444268	145, 135, 124, 114	679	728	951
	254348	63 5, 56 5, 49, 43.5	253	256	356	395	308		444272	103, 93, 83, 71	799	848	1071
	254352	40 5, 37 5, 34, 31	280	283	383	422	335		444372	63 5, 56 5, 49, 43.5	957	1006	1229
	254356	27 5, 25 5, 23, 21	313	316	416	455	368		444376	40 5, 37 5, 34, 31	1078	1127	1350
	254360	19 5, 17, 15, 13	362	365	465	504	417		444380	27 5, 25 5, 23, 21	1235	1284	1507
7½	284144	600, 572, 540, 507	186	191	301	352	...	50	444384	19 5, 17, 15, 13	1466	1515	1738
	284144	475, 438, 396, 360	191	196	306	357	...		445164	475, 438, 396, 360	614	674	888
	284148	323, 300, 273, 243	203	208	318	369	...		445168	323, 300, 273, 243	656	716	930
	284152	225, 200, 174, 154	222	227	337	388	...		445172	225, 200, 174, 154	735	795	1009
	284248	145, 135, 124, 114	239	244	354	405	...		445268	145, 135, 124, 114	798	858	1072
	284252	103, 93, 83, 71	273	278	388	439	...		445272	103, 93, 83, 71	945	1005	1219
	284352	63 5, 56 5, 49, 43.5	316	321	431	482	...		445376	63 5, 56 5, 49, 43.5	1129	1189	1403
	284356	40 5, 37 5, 34, 31	351	356	466	517	...		445380	40 5, 37 5, 34, 31	1276	1336	1550
	284360	27 5, 25 5, 23, 21	396	401	511	562	...		445384	27 5, 25 5, 23, 21	1465	1525	1739
	284364	19 5, 17, 15, 13	458	463	573	624	...		445488	19 5, 17, 15, 13	1830	1844	2058
10	324148	600, 572, 540, 507	233	239	357	...	...	60	504168	475, 438, 396, 360	747	816	1038
	324148	475, 438, 396, 360	241	247	365	...	...		504172	323, 300, 273, 243	804	873	1095
	324152	323, 300, 273, 243	253	259	377	...	...		504176	225, 200, 174, 154	899	968	1190
	324156	225, 200, 174, 154	275	281	399	...	...		504272	145, 135, 124, 114	983	1052	1274
	324252	145, 135, 124, 114	294	300	418	...	...		†	103, 93, 83, 71	1167	1236	1458
	324256	103, 93, 83, 71	340	346	464	...	...		504376	63 5, 56 5, 49, 43.5	1387	1456	1678
	324356	63 5, 56 5, 49, 43.5	399	405	523	...	...		504380	40 5, 37 5, 34, 31	1555	1624	1846
	324360	40 5, 37 5, 34, 31	443	449	567	...	...		504384	27 5, 25 5, 23, 21	1776	1845	2067
									504488	19 5, 17, 15, 13	2180	2249	2471

*For Type SCR motors, frame is A-225.

†These prices apply to Type KF also.

‡Refer to company for frame size.

All types of gear motors are suitable for operation with standard listed controllers. Where full-voltage starting

is used to obtain maximum starting torque of motor, the number of starts should be limited to 4 to 6 per day.

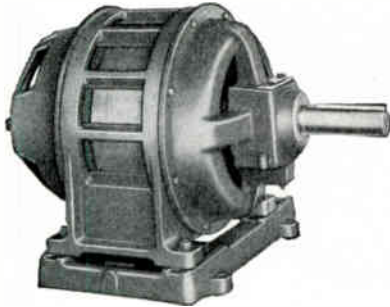
Prices are for motor only. Pulley and base, when required, will be furnished at slight additional cost.

G-E General-Purpose Synchronous Motors

Type TS, 3-Phase—Type QS, 2-Phase
900 Series—Form BL—Skeleton Frame

High Speed, 60 Cycles

1.0 Power-Factor—40°C. Stator and Rotor
0.8 Power-Factor—40°C. Stator, 50°C. Rotor



Typical General-Purpose Motor for Belt Drive

Developed to fill the need for a synchronous motor which could be recommended for most general purpose applications, in the same way that a squirrel-cage induction motor is recommended—that is, without a detailed study of the requirements of this application. For this reason, in the line of general-purpose synchronous motors, there were incorporated high starting torque, overload capacity, mechanical simplicity, and reliability of G-E squirrel-cage motors.

Since the exciter is direct connected and overhung on the motor end shield, the general-purpose synchronous motors form complete and compact units which, like the squirrel-cage induction motors, merely require connection to the a.c. power supply.



Typical General-Purpose Motor with Direct Connected Exciter for Direct Drive

Hp.	Speed RPM.	Volts	Unity Power-Factor Sleeve Bearings			0.8 Power-Factor Sleeve Bearings			Hp.	Speed RPM.	Volts	Unity Power-Factor Sleeve Bearings			0.8 Power-Factor Sleeve Bearings		
			Frame No.	Motor Only Each	Exciter Each	Frame No.	Motor Only Each	Exciter Each				Frame No.	Motor Only Each	Exciter Each	Frame No.	Motor Only Each	Exciter Each
20	1200	220	...	...	...	934	\$570	\$149	50	600	220	954	\$1000	\$363	955	\$1060	\$363
		440-550	934	599	149			600	2200	954	1050	363	955	1113	363
25	1200	220	934	\$570	\$149	934	583	149	60	1800	220	953S	1120	128	953S	1195	128
		440-550	934	599	149	934	612	149			1800	2200	953S	1176	128	953S	1195	128
30	1200	220	...	...	...	944	670	252	900	1200	220	945	690	173	945	760	173
		440-550	944	704	252	944	704	252			1200	2200	945	725	173	945	760	173
40	1800	220	934	583	149	935	610	149	75	1800	220	953	805	289	954	875	289
		440-550	934	612	149	935	641	149			900	2200	953	845	289	954	875	289
50	1200	220	944	670	252	944	712	252	100	1800	220	954	936	323	955	1000	384
		440-550	944	704	252	944	748	252			720	2200	954	983	323	955	1000	384
50	1800	220	...	...	...	953	837	288	1200	600	220	954	1060	363	963	1150	427
		440-550	953	879	288	953	879	288			600	2200	954	1113	363	963	1150	427
50	1200	220	...	...	...	*945S	1065	128	1200	600	220	*945S	1118	128	954S	1317	128
		440-550	*945S	1118	128	944	645	173			1800	2200	945	760	173	953	876	252
50	1800	220	935	610	149	944	645	173	1200	900	220	945	758	252	945	985	289
		440-550	935	641	149	944	677	173			900	2200	954	875	289	954	985	289
50	1200	220	944	712	252	945	758	252	1200	900	220	954	875	289	954	985	289
		440-550	944	748	252	945	796	252			720	2200	955	1000	323	963	1115	384
50	900	220	953	837	288	953	887	323	1200	600	220	953	1000	363	963	1270	427
		440-550	953	879	288	953	931	323			600	2200	963	1150	427	963	1270	427
50	1800	220	...	...	...	954	1050	363	1200	900	220	954	1060	363	963	1150	427
		440-550	954	1065	128	953S	1120	128			1800	2200	*953S	1317	128	*954S	1432	128
50	1200	220	945S	1118	128	953S	1176	128	1200	900	220	953S	876	252	954S	996	252
		440-550	944	645	173	945	690	173			900	2200	954	985	289	955	1095	329
50	900	220	944	677	173	945	725	173	1200	720	220	953	805	289	955	1095	329
		440-550	945	796	252	953	845	289			720	2200	963	1115	323	963	1220	384
50	720	220	953	887	323	954	936	323	1200	720	220	963	1115	323	963	1220	384
		440-550	953	931	323	954	983	323			720	2200	963	1115	323	963	1220	384

Continued

*For direct connection. Not recommended for belt drive.

Prices are for motor only. Pulley and base, when required, will be furnished at slight additional cost.

G-E General-Purpose Synchronous Motors

Type TS, 3-Phase—Type QS, 2-Phase

900 Series—Form BL—Skeleton Frame

High Speed, 60 Cycles

1.0 Power-Factor—40°C. Stator and Rotor

0.8 Power-Factor—40°C. Stator, 50°C. Rotor

Continued

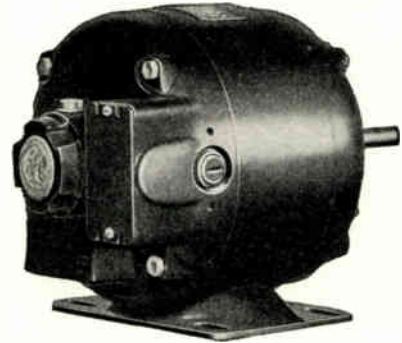
Hp.	Speed RPM.	Volts	Unity Power-Factor Sleeve Bearings			0.8 Power-Factor Sleeve Bearings		
			Frame No.	Motor Only Each	Exciter Each	Frame No.	Motor Only Each	Exciter Each
100	600	220 440-550	963	\$1270	\$427	964	\$1380	\$427
		2200						
	514	220 440-550	964	1430	485	972	1530	613
		2200						
125	1800	220 440-550	*†954	1432	128	*†963	1549	146
		2200						
	1200	220 440-550	†954	996	252	†955	1105	292
		2200						
	900	220 440-550	955	1095	289	963	1210	329
		2200						
	720	220 440-550	963	1220	323	964	1330	384
		2200						
	600	220 440-550	963	1380	427	965	1480	543
		2200						
	514	220 440-550	972	1530	485	973	1620	613
		2200						
150	1800	220 440-550	*†954	1549	128	*†963	1742	146
		2200						
	1200	220 440-550	*†955	1105	252	*†963	1310	292
		2200						
	900	220 440-550	†963	1210	289	†964	1410	329
		2200						
	720	220 440-550	964	1330	323	965	1530	480
		2200						
	600	220 440-550	965	1480	427	972	1670	543
		2200						
	514	220 440-550	973	1620	485	974	1800	613
		2200						
200	1800	220 440-550	*†963	1742	146	†	....	...
		2200						
	1200	220 440-550	*†963	1310	252	†	....	...
		2200						
	900	220 440-550	†964	1410	329	†	....	...
		2200						
	720	220 440-550	965	1530	384	†	....	...
		2200						
	600	220 440-550	972	1670	427	†	....	...
		2200						
	514	220 440-550	†974	1800	485	†	....	...
		2200						

G-E Type BC General-Purpose Fractional-Horsepower Motors

1/20 to 1 Hp., Constant Speed, Direct Current

Continuous Duty, 40°C. Rise

Compound Wound, Solid Base



These motors have excellent starting and accelerating torque and large reserve power. They will start and drive any device operated by any of the single-phase motors of corresponding rating.

As far as possible the design of the d.c. motors follows the general design of the single-phase motors. They have a similar external appearance and in general, the same mechanical features.

Mounting interchangeability between single-phase and d.c. motors is maintained.

Hp. at 40°C.	Frame No.	Volts	Full Load Speed RPM.	Motor Only Sleeve Bearings Each
1/20	*28	115	1725	\$16.15
	*36	115	1140	18.05
	42	115	860	19.55
1/12	*28	115	3450	17.45
	*36	115	1725	16.70
	42	115	1140	18.70
	42	115	860	20.90
1/8	36	115	3450	19.20
	42	115	1725	18.40
	42	115	1140	21.20
	44	115	860	26.60
1/6	42	115	1725	19.25
	44	115	1140	23.00
	†66	115	860	30.00
1/5	42	115	1725	20.80
	42	115	3450	22.20
1/4	44	115	1725	20.80
	46	115	1140	26.50
	†66	115	860	37.00
1/3	42	115	3450	25.20
	46	115	1725	23.90
	†66	115	1140	31.00
1/2	†74	115	860	42.00
	44	115	3450	29.50
	†66	115	1725	28.00
3/4	†74	115	1140	38.00
	†66	115	3450	37.00
	†74	115	1725	36.00
1	†66	115	3450	41.00

*For direct connection. Not recommended for belt drive.
†Prices and other information upon application.
‡Short shaft.

Prices are for motor only. Pulley and base, when required, will be furnished at slight additional cost.

*These motors are shunt wound.

†Direct current motors in these ratings may be supplied with 550-volt windings at an additional price of \$7.00.

Prices for motors with resilient bases and with other voltages upon application.

G-E Type B Direct Current Motors 115 or 230 Volts



These motors are particularly suitable for a wide range of industrial applications, such as driving pumps, fans, blowers, line shafting and similar equipment requiring continuous operation and fairly close speed regulation. The hp. ratings are based on continuous duty at 40°C.

Constant Speed—Shunt or Compound-Wound

On all constant speed motors, speed may be increased at least 25 per cent by field control and reduced 50 per cent by armature control.

Hp. at 40°C.	Frame No.	Full Load Speed RPM.	Max. Speed by Field Control RPM.	Shunt Motor Only *Sleeve Bearings Each	Compound-Wound Motor Each
1/2	204	850	1750	\$91.00	\$93.00
3/4	203	1150	2300	85.00	87.00
	224	850	1700	100.00	102.00
1	203	1750	2190	82.00	84.00
	204	1150	2300	96.00	98.00
	225	850	1700	110.00	114.00
1 1/2	203	3500	3500	102.00	104.00
	204	1750	2190	93.00	95.00
	224	1150	2300	110.00	114.00
	254	850	1700	188.00	194.00
2	204	3500	3500	114.00	118.00
	224	1750	2190	104.00	106.00
	225	1150	2300	129.00	133.00
	254	850	1700	200.00	206.00
3	224	3500	3500	136.00	140.00
	225	1750	2190	128.00	132.00
	254	1150	2300	195.00	201.00
	284	850	1700	236.00	242.00
5	225	3500	3500	169.00	175.00
	254	1750	2190	203.00	209.00
	284	1150	2300	247.00	257.00
7 1/2	254	3500	3500	300.00	310.00
	284	1750	2190	246.00	256.00
10	284	3500	3500	345.00	355.00

Adjustable Speed—Shunt-Wound

Motors are available for these applications requiring speed adjustment in ratios 3:1 or greater.

Frame No.	CONSTANT HP. ALL SPEEDS 1 HOUR		†CONSTANT HP. 40°C. RISE CONTINUOUS		‡TAPERED HP. 40°C. RISE CONTINUOUS		Motor Only *Sleeve Bearings Each
	Hp.	Full Load RPM.	Hp.	Full Load RPM.	Hp.	Full Load RPM.	
204	1/2	690	1/2	850	1/2 to 3/4	850	\$101.00
204	3/4	850	1/2	690	1/2 to 3/4	690	100.00
224	3/4	690	1/2	690	3/4 to 1	850	124.00
224	1	850	3/4	850	3/4 to 1	690	110.00
225	1	690	3/4	690	3/4 to 1	690	135.00
225	1 1/2	850	1	850	1 to 1 1/2	850	121.00
225	1 1/2	690	1	690	1 to 1 1/2	690	147.00
254	2	690	1 1/2	690	1 1/2 to 2	690	225.00
284	2	500	1 1/2	500	1 1/2 to 2	500	263.00
284	3	690	2	690	2 to 3	690	246.00

*For ball bearings, add 5 per cent to sleeve bearing price, minimum addition \$4.00.

†Constant hp.: from basic speed upward to 150 per cent, temperature will not exceed 50°C. rise; above 150 per cent of basic speed the temperature will not exceed 40°C. rise.

‡Tapered hp.: from basic speed upward to 150 per cent, motor delivers minimum rated hp., temperature not to exceed 50°C. rise; 40°C. rise is not exceeded at speeds above 150 per cent of basic speed.

Prices are for motor only. Pulley and base, when required, will be furnished at slight additional cost.

G-E Series Wound Motors

1/100 H.P. at 5000 R.P.M. to 1/3 H.P. at 1000 R.P.M.
110 and 220 Volts, Varying Speed



Type BA with 45A Frame

A complete line of series wound motors are available for portable machines, domestic devices, etc. requiring high outputs with small size and weight. Self-aligning bearings and large oil capacity housings with oil returns provide lubrication. Only occasional oiling is required. Ventilating

system cools motor even when operating under heavy loads.

Series type motors offer high starting and accelerating torque and operate at high speeds. They have varying speed characteristics, that is the speed varies with the load, but with constant load they offer constant speed. A motor must be chosen whose output closely matches the requirements of the device. The requirements of the device to be motorized are usually determined by test.

Motor parts, consisting of rotor, stator and brush mechanism are also available for built-in applications.

G-E Motors for Unusual Requirements

In addition to general purpose motors, G-E Fractional H.P. Motors are designed for special requirements.

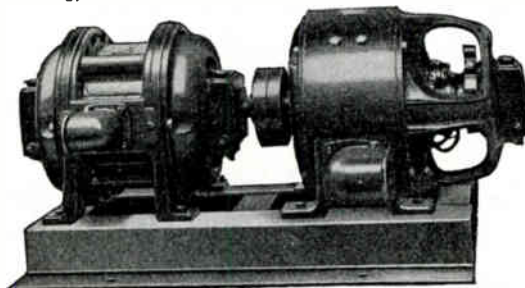
The following is intended to indicate the wide scope of special service motors available: gear motors, for low speeds; explosion-proof motors, for explosive atmospheres; synchronous motors, for close speed regulation; fan duty motors, for fans and blowers; totally enclosed motors, for dusty locations; dynamotors, for converting d.c. to a.c.; motor generators, for converting power; vertical and flange-mounted motors, where special mounting arrangements are required.

Further information will be furnished on application.

G-E Induction Motor-Generator Sets

Types B or CD, D.C. Generator—Shunt or Compound Wound

3-Bearing, 40° C. Continuous Rated, 2 or 3-Phase, 60 Cycles



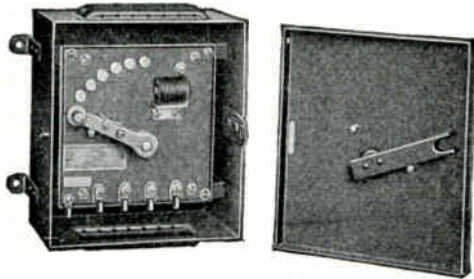
Made up of standard G-E motors and generators connected by solid steel couplings and mounted on welded structural steel bases. Bearings are of the self-aligning, self-feeding, oil-ring sleeve type.

K.W. Rating of Set	Syn. Speed R.P.M.	Generator Volts	Motor Volts	Set with Gen. Field Rheo. Only Each
1	1800	125 or 250	110, 220, 440, 550	\$223.00
1 1/2	1800	125 or 250	110, 220, 440, 550	254.00
2	1800	125 or 250	110, 220, 440, 550	277.00
3	1800	125 or 250	110, 220, 440, 550	370.00
5	1800	125 or 250	220, 440, 550	460.00
7 1/2	1800	125 or 250	220, 440, 550	559.00
10	1800	125 or 250	220, 440, 550	617.00
15	1800	125 or 250	220, 440, 550	782.00
20	1800	125 or 250	220, 440, 550	930.00
25	1800	125 or 250	220, 440, 550	1085.00
			2200	1241.00
30	1800	125	220, 440, 550	1282.00
			2200	1438.00
	1800	250	220, 440, 550	1242.00
			2200	1398.00

G-E Type CR1003 D.C. Enclosed Heavy Duty Starting Rheostats

For Series, Shunt or Compound-Wound Motors

N.E.M.A. Resistor Class. { Up to 25 Hp., No. 135
Above 25 Hp., No. 134



This heavy duty starting rheostat affords a convenient, simple means of providing starting and smooth acceleration for all kinds of d.c. motors.

Provides undervoltage protection.

Order by CR number and number and state rating of motor with which rheostat is to be used.

32 Volts

No.	Each	Motor Hp.	Approx. Ship. Wt. Lb.	No.	Each	Motor Hp.	Approx. Ship. Wt. Lb.
2021100G15	\$14.00	1/4	20	2021000G31	\$20.00	1 1/2-2	40
2021100G17	14.00	1/2	20	2042441G7	42.00	3	120
2021000G29	20.00	3/4-1	40	2042441G8	47.00	5	120

115 Volts

2021100G3	\$14.00	1/8-1/2	20	2042593G2	\$72.00	20	175
2021100G7	14.00	3/4-1	20	2042593G3	88.00	25	175
2021000G3	20.00	1 1/2-2	40	2042593G4	94.00	30	175
2021000G7	20.00	3	40	2091686G2	212.00	40	400
2021000G11	25.00	5	50	2091687G2	274.00	50	550
2042440G2	41.00	7 1/2	80	2091687G4	282.00	60	550
2042441G2	51.00	10	90	2091687G5	282.00	75	550
2042441G3	55.00	15	90				

230 Volts

2021100G5	\$14.00	1/8-1/2	20	2042441G6	\$58.00	25	105
2021100G9	14.00	3/4-1	20	2042593G5	72.00	30	175
2021000G5	20.00	1 1/2-2	40	2042593G8	94.00	40	175
2021000G9	20.00	3	50	2042593G9	99.00	50	175
2021000G13	25.00	5	50	2091686G4	220.00	60	400
2021000G15	26.00	7 1/2	50	2091686G5	220.00	75	400
2042440G3	46.00	10	105	2091687G6	282.00	100	550
2042441G4	53.00	15	105	2091687G7	293.00	125	550
2042441G5	53.00	20	105	2091687G8	293.00	150	550

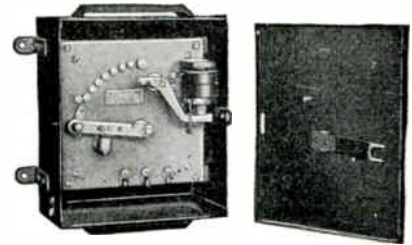
550 Volts

2046402G3	\$25.00	1/8-1/2	45	2091688G6	\$174.00	25	350
2046402G5	25.00	3/4-1	45	2091688G7	174.00	30	350
2046402G7	25.00	1 1/2-2	45	2091688G9	174.00	40	350
2046402G9	25.00	3	50	2091689G4	181.00	50	350
2046402G11	26.00	5	50	2091690G4	220.00	60	400
2046402G13	31.00	7 1/2	50	2091690G5	220.00	75	400
2046828G3	80.00	10	80	2091690G7	220.00	100	400
2046828G5	83.00	15	80	2091691G6	236.00	125	400
2046828G7	88.00	20	80	2091691G7	236.00	150	400

G-E CR1026 A.C. Enclosed Starting Rheostats

For Type SCR Repulsion-Induction Motors

40, 50 and 60 Cycles, Single-Phase



These starters may be used with motors that do not require more than 150 per cent torque to start or longer than 30 seconds to attain full speed.

They comply with N. E. M. A. Standard Resistor Classification No. 135.

They are primarily for use with the single-phase repulsion-induction motors (Type SCR) where the inrush of current resulting from throwing the motor directly upon the line is objectionable. When these motors are started by being thrown directly upon the line, they require from 250 to 300 per cent full-load current. While in many cases this starting current may not be objectionable, it is recommended that a starter be installed in every case with the 7 1/2 and 10-hp. motors and with the smaller motors when it is desired to reduce the starting current.

Starters for use with motors up to and including 5-hp. 110 volts and 7 1/2-hp. 220 volts are provided with button contacts. Larger sizes have renewable segments.

Motor Hp.	110 Volts Each	220 Volts Each	440 Volts Each
Up to 1	\$22.00	\$22.00	.....
1 1/2	24.00	24.00	.....
2	24.00	24.00	.....
3	24.00	24.00	.....
5	26.00	26.00	.....
7 1/2	49.00	36.00	\$38.00
10	50.00	53.00	38.00

When ordering state CR Number of rheostat and hp., voltage and frequency of motor.



G-E Type CR1034 A.C. Manual Reduced Voltage Starters

For Squirrel-Cage Induction Motors



Type CR1034-K1 Starter with Ammeter Attachment



Type CR1034-K1 Starter Cover Removed Showing Type CR2824-TC-121 Relay Mounted

Suitable for starting squirrel-cage induction motors on applications requiring not more than 15 seconds to attain full speed, once every 4 minutes for an hour.

Starters consist of an auto-transformer with suitable taps, a switching device, an instantaneous undervoltage protective device and a hand-reset overload relay, all self-contained within a sheet metal case.

Arranged for wall mounting; has conduit wiring box. The 2200-volt size is floor mounted. Switch is oil immersed. Starters can be furnished with ammeter attachment (including ammeter) at \$64.00 additional.

When ordering, specify a CR1034 starter with temperature overload relay, giving the complete motor rating. Order ammeter attachment if desired.

H.P.	Motor Rating		Form	Size	Starter Incl. Relay Each	Price
	Volts	Volts				
5-10	220, 440, 550		K 1	1		\$101.00
15	220, 440, 550		K 1	1		101.00
20	220, 440, 550		K 1	1		105.00
20	2200		F1A	.		402.00
25	220, 440, 550		K 1	1		105.00
25	2200		F1A	.		417.00
30	220, 440, 550		K 1	1		109.00
30	2200		F1A	.		417.00
40	220		K 1	2		185.00
40	440, 550		K 1	1		115.00
40	2200		F1A	.		422.00
50	220		K 1	2		191.00
50	440, 550		K 1	1		115.00
50	2200		F1A	.		422.00
60	220, 440, 550		K 1	2		198.00
60	2200		F1A	.		437.00
75	220, 440, 550		K 1	2		205.00
75	2200		F1A	.		437.00
100	220		K 1	3		279.00
100	440, 550		K 1	2		205.00
100	2200		F1A	.		445.00
125	220		K22	.		700.00
125	440, 550		K 1	2		223.00
125	2200		F1A	.		451.00
150	220		K22	.		764.00
150	440, 550		K 1	2		223.00
150	2200		F1A	.		458.00
200	440, 550		K 1	3		305.00
200	2200		F1A	.		471.00

G-E Type CR1061 Motor Starting Switches For Fractional-Hp. Motors—Manually Operated

Maximum Ratings { A. C. { Single Pole, 3/4 Hp., 110 to 220 Volts
Double Pole, 3/4 Hp., 110 to 220 Volts
D. C. { Single Pole, 1/2 Hp., 115 to 230 Volts
Double Pole, 1/2 Hp., 115 to 230 Volts

Listed by Underwriters' Laboratories



For Wall Mounting

This small, compact, hand-operated starting switch incorporates positive overload protection. It is designed for use with fractional-horsepower motors, and can be supplied for a.c. or d.c. circuits.

For flush-mounted type, order an open-type switch by nomenclature designation and number. For a single switch, order from a local dealer the following material: one flush plate—No. GE2316 Textolite or No. GE1701 brass; and one conduit box 2 1/2 inches deep—No. SP6971 for rigid conduit and No. SP6972 for BX or flexible conduit. For gang mounting, specify flush plate and/or conduit box "similar to number

and state number of switches to be included in gang. For all other types, order switch by nomenclature designation and number. Order one heater for overload device by number. Select heater, from table at bottom of this column, in accordance with full-load motor current.

Example: 1 CR1061-C1A, motor starting switch
1 No. 81D70 heater

Open Type—Also for Flush Mounting

No.	*Each	Power Supply	No. of Poles	Nomenclature	Approx. Ship. Wt. Lb.
4983952	\$1.85	A.C.	1	CR1061-C1C	1
4983960	2.10	A.C.	2	CR1061-C2C	1
4983956	1.85	D.C.	1	CR1061-C1G	1
4983964	2.10	D.C.	2	CR1061-C2G	1

Enclosed Type for Surface Wall Mounting

4983950	\$2.25	A.C.	1	CR1061-C1A	2
4983958	2.50	A.C.	2	CR1061-C2A	2
4983954	2.25	D.C.	1	CR1061-C1E	2
4983962	2.50	D.C.	2	CR1061-C2E	2

Dust-Tight and Weather-Resisting Type

4988807A	\$8.10	A.C.	1	CR1061-F1A	1
4988807B	8.35	A.C.	2	CR1061-F1B	2
4988807C	8.10	D.C.	1	CR1061-F1C	1
4988807D	8.35	D.C.	2	CR1061-F1D	2

Explosion-Proof Type

For Class I, Group D, Hazardous Locations

4986903G1	\$8.10	A.C.	1	CR1061-B2A	1
4986903G2	8.35	A.C.	2	CR1061-B2B	2
4986903G3	8.10	D.C.	1	CR1061-B2C	1
4986903G4	8.35	D.C.	2	CR1061-B2D	2

*Prices include one overload device heater which must be ordered separately. Heater may be omitted or additional heaters may be ordered at 50 cents each.

†Open type is adaptable to flush mounting when used with standard (2 1/2 inches deep) conduit box and flush plate.

No. 5187946G1 replaceable solder-film-type overload device, 50 cents each

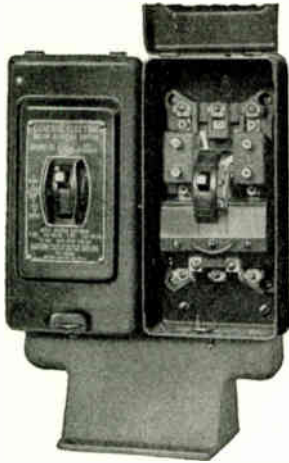
Heaters for Thermal Overload Devices

Interchangeable heaters are available for a variety of motor current ranges as shown in the table below.

Listed values are for motors rated 40°C. continuous. For motors rated 50°C. or 55°C. continuous, use heaters one size smaller than listed.

No.	Full-Load Current of Motor, Amperes	No.	Full-Load Current of Motor, Amperes	No.	Full-Load Current of Motor, Amperes
81D64	0.44-0.49	81D74	1.51-1.61	81D84	4.37-5.04
81D65	0.50-0.56	81D75	1.62-1.78	81D85	5.05-5.56
81D66	0.57-0.63	81D76	1.79-1.93	81D86	5.57-6.47
81D67	0.64-0.72	81D77	1.94-2.18	81D87	6.48-7.0
81D68	0.73-0.82	81D78	2.19-2.56	81D88	7.1-7.8
81D69	0.83-0.93	81D79	2.57-2.77	81D89	7.9-8.8
81D70	0.94-1.04	81D80	2.78-3.01	81D90	8.9-10.1
81D71	1.05-1.20	81D81	3.02-3.45	81D91	10.2-11.5
81D72	1.21-1.32	81D82	3.46-3.83	.....	.....
81D73	1.33-1.50	81D83	3.84-4.36	.....	.....

G-E Type CR1062 Motor Starting Switches
For Small A.C. Motors—Manually Operated
25, 40, 50 and 60 Cycles



Two Type CR1062-C5 Switches Mounted on No. 4923350G1 Pedestal

These switches are single throw with double-break contacts. Overload protection is provided by means of hand-reset thermal overload device, and are used for throwing small a.c. single or 3-phase 60, 50, 40 or 25-cycle motors directly across the line. Operating mechanism trips free from handle. Contacts are of silver.

Cases have conduit knock-outs and sufficient wiring space for No. 8 line wires with soldered terminals. Protects against single-phase operation of polyphase motors.

Order by CR number and switch number and form number. Also give rating of motor with which switch is to be used. Specify if heaters are required for overload

protection. Order pedestals by number.

Type CR1062-B6, Single-Phase, for Wall Mounting

No.	*Each	Max. Hp. Rating	Volts	No. of Poles
4981887	\$6.50	1	110	2
		1½	220, 440, 550, 600	2

Type CR1062-B7, 3-Phase, for Wall Mounting

4981888	\$7.50	1½	110	3
		2	220, 440, 550, 600	3

Type CR1062-B8, 3-Phase, for Pedestal Mounting

4981889	\$7.50	1½	110	3
		2	220, 440, 550, 600	3

Type CR1062-C4, Single-Phase, for Wall or Pedestal Mounting

4981890	\$8.50	1½	110	2
		3	220	2
		5	440, 550, 600	2

Type CR1062-C5, 3-Phase, for Wall or Pedestal Mounting

4981891	\$9.50	3	110	3
		5	220	3
		7½	440, 550, 600	3

Type CR1062, Explosion-Proof or Watertight

Complete information furnished on application.

*Price includes heaters. Heaters may be omitted or additional heaters may be ordered at 60 cents each.

Heaters for Thermal Overload Devices

For use with standard or high-reactance squirrel-cage motors rated 40°C. rise continuous. For totally-enclosed fan-cooled motors or for motors rated 50°C rise continuous, use one size smaller than listed below.

No.	FULL-LOAD CURRENT OF MOTOR, AMPS.				No.	FULL-LOAD CURRENT OF MOTOR, AMPS.			
	For CR1062B Switches		For CR1062C Switches			For CR1062B Switches		For CR1062C Switches	
81D106	.45-	.50	.36-	.40	81D123	3 24-	3 59	2 65-	2 98
81D107	.51-	.57	.41-	.46	81D124	3 60-	3 99	2 99-	3 36
81D108	.58-	.64	.47-	.52	81D125	4 00-	4 49	3 37-	3 64
81D109	.65-	.74	.53-	.60	81D126	4 50-	5 09	3 65-	4 18
81D110	.75-	.84	.61-	.68	81D127	5 10-	5 79	4 19-	4 63
81D111	.85-	.96	.69-	.77	81D128	5 8-	6 59	4 64-	5 27
81D112	.97-	1 09	.78-	.88	81D129	6 6-	7 39	5 28-	6 09
81D113	1 10-	1 24	.89-	1 03	81D130	7 4-	8 39	6 10-	6 73
81D114	1 25-	1 39	1 04-	1 14	81D131	8 4-	9 39	6 74-	7 82
81D115	1 40-	1 56	1 15-	1 27	81D132	9 4-	10 4	7 83-	8 54
81D116	1 57-	1 76	1 28-	1 45	81D133	10 5-	11 7	8 55-	9 55
81D117	1 77-	1 96	1 46-	1 61	81D134	11 8-	13 4	9 56-	10 7
81D118	1 97-	2 16	1 62-	1 82	81D135	13 5-	15 2	10 8-	12 4
81D119	2 17-	2 37	1 83-	1 96	81D136	15 3-	17 2	12 5-	14 0
81D120	2 38-	2 59	1 97-	2 16	81D137	17 3-	19 7	14 1-	15 7
81D121	2 60-	2 89	2 17-	2 42	81D138			15 8-	18 2
81D122	2 90-	3 23	2 43-	2 64					

G-E Type CR2927 Pressure and Vacuum Switches

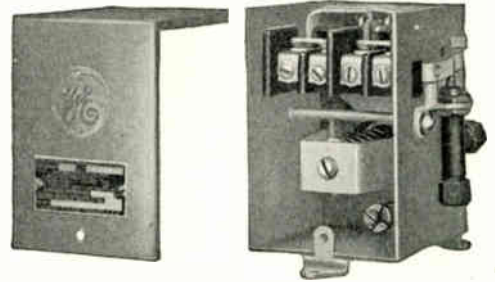
Diaphragm Type—For Starting Small Motors or for Pilot-Circuit Control

Maximum Hp. Ratings:

2 Hp. 110 Volts, 5 Hp. 220 Volts, 5 Hp. 440 and 550 Volts A.C. Polyphase

1½ Hp. 110 Volts and 3 Hp. 210 Volts A.C. Single-Phase

½ Hp. 110 to 550 Volts D.C.



Pressure Switch (Cover Removed) with Unloader Valve and Differential-Adjusting Attachment Mounted in Place

These switches are designed to open or close contacts upon changes of pressure or vacuum of any gas or liquid which will not affect synthetic rubber or brass or steel parts.

Used for starting motors not larger than 2 hp. 110 volts, 5 hp. 220, 440, and 550 volts polyphase; 1½ hp. 110 volts and 3 hp. 220 volts single-phase or ½ hp. 110 to 550 volts d.c. When larger motors are used, these switches can be used in connection with automatic starters which will also provide overload protection.

Order by CR number and specify adjustment if other than factory adjustment is required.

Pressure Switches

No.	Each	* Operation	Max. Pressure, LB. PER Sq. IN.		FACTORY ADJUSTMENT, LB. PER Sq. IN.		MIN. ADJUSTMENT, LB. PER Sq. IN.		MAX. ADJUSTMENT, LB. PER Sq. IN.	
			Sq. In.	Close	Open	Close	Open	Close	Open	
2248268G7	\$15	Std.	500	320	4500	250	1300	3650	5000	
2248268G2	7	Std.	300	200	250	15	35	245	300	
2248268G3	6	Std.	160	130	150	8	23	140	160	
2248268G4	14	Std.	80	70	80	4	12	70	80	
2248268G20	5	Std.	80	52	70	8	23	62	80	
2248268G5	14	Std.	40	36	40	2	5	36	40	
2248268G6	16	Std.	13	9	10	½	1¼	12	13	
2248268G8	7	Rev.	300	250	200	35	15	300	245	
2248268G9	6	Rev.	160	150	130	23	8	160	140	
2248268G10	14	Rev.	80	80	70	12	4	80	70	
2248268G11	14	Rev.	40	40	36	5	2	40	36	
2248268G12	16	Rev.	13	10	9	1¼	½	13	12	

Vacuum Switches

No.	Each	* Operation	Max. Vacuum of Mercury, INCHES		FACTORY ADJUSTMENT OF MERCURY, INCHES		MIN. ADJUSTMENT OF MERCURY, INCHES		MAX. ADJUSTMENT OF MERCURY, INCHES	
			Inches	Close	Open	Close	Open	Close	Open	
2248269G2	\$13	Std.	26½	5½	8	1	3	23½	26½	
2248269G3	13	Rev.	26½	8	5½	3	1	26½	23½	

*Std., standard operation: open at high pressure, close at low pressure. Rev., reverse operation: open at low pressure, close at high pressure.

Attachments

- †No. 2244498G2, Unloader, 2-Way.....each \$2.00
- No. 2246093G1, Differential-Adjusting Attachment for Standard Operation Switch.....each 1.00
- No. 2246900G1, Differential-Adjusting Attachment for Reverse Operation Switch.....each 1.00
- †No. 2246094G1, Hand-Oper. Lock-Out Lever.....each 1.50

†These attachments are used only for Nos. 2248268G2, 3, 4, 5, and 6; and No. 2248269G2.

G-E Type CR2931 Enclosed Float Switches

For A.C. or D.C. Motors



Form D

Form P

Suitable for use in the control circuit of a.c. or d.c. automatic starters, and, except for the Form P, can directly handle the circuits of small motors.

These switches, as furnished, are arranged for tank operation, that is, the switch closes as the lower liquid level is reached, and opens as the top level is reached. This action may be easily changed for sump operation by interchanging the float and counterweight. Standard floats should not be subjected to pressure. Quotation on special floats will be furnished on request.

All switches are drip and splash-proof and suitable for outdoor installation where they are not subjected to snow or sleet. Where the liquid whose level is to be controlled is subject to freezing, a float switch should not be used.

All switches are quick acting when closing and opening, and this insures a minimum of arcing and burning of the contacts.

Form	No. of Poles	Description	Each
A	Dbl.	For Clamping to Inside Top Edge of Tank; Operated by Rod and Float; Range, 10 Inches to 2 Feet.....	\$37
A	4	Same as Form A Double-Pole.....	41
B	Dbl.	For Bolting to Tank Cover; Requires Guide in Cover for Operating Rod; Range, 10 Inches to 3½ Feet.....	39
B	4	Same as Form B Double-Pole.....	43
C	Dbl.	For Bolting to Tank Cover; Range, 10 Inches to 3½ Feet.....	41
C	4	Same as Form C Double-Pole.....	45
D	Dbl.	†For Bolting to Tank Cover; Operated by Chain and Float; Suitable for Any Depth of Tank or Any Variation in Water Level Not Less Than 10 Inches.....	*41
D	4	†Same as Form D Double-Pole.....	*45
L	Dbl.	†Operated by Chain and Float; For Any Variation in Water Level Not Less Than 5".....	*29
M	Dbl.	Rod-Operated; Range, 2½ In. to 4½ Ft..	29
F	Sgl.	§Operated by Chain and Float; For Any Variation in Water Level Not Less Than 2".....	†16
AW	Sgl.	Same as Form P, Except with Mercury-Tube, Heavy Duty Connectors.....	†18

Order by CR and Form numbers. Specify number poles of switch.

*Price includes 15 feet of bronze chain. If more is required add 15 cents for each additional foot.

†Price includes 15 feet of brass chain. If more is required add 5 cents for each additional foot.

To obtain maximum operating range: †Deduct 3½ feet from length of chain; §deduct 1½ feet from length of chain.

G-E Type CR2940 Pushbutton Stations



Typical 3 Button Station for Front-of-Panel or Wall Mounting

Type CR2940 pushbutton stations are primarily intended for use in the control circuits of various magnetic controllers. The large contacts and substantial construction of these heavy-duty stations make them well able to withstand the frequent operation and ordinary rough usage of machine-tool and similar applications.

The stations listed are divided into three general classes: momentary contact, maintaining contact and a combination of momentary and maintaining contacts. With a momentary contact the circuit is completed or interrupted only as long as the operator's finger depresses the button. This feature is required when the station is used with a controller that must provide under-voltage protection. A maintaining contact holds the circuit open or closed as does an ordinary knife switch.

General Purpose Momentary Contact Single Button

Nomenclature	Nameplate Markings	Each
CR2940-1A1	Stop.....	\$4.00
CR2940-1D1	Jog.....	4.00
CR2940-1H1	Start.....	4.00
CR2940-1K1	Forward.....	5.00
CR2940-1L1	Reverse.....	5.00

2 Buttons



No. CR2943-A200A

Nomenclature	Nameplate Markings	Each
CR2940-2A1	Start—Stop.....	\$6.00
CR2940-2E1	Raise—Lower.....	6.00
CR2940-2F1	Up—Down.....	6.00
CR2940-2G1	Fast—Slow.....	6.00
CR2943-A200A	Start—Stop.....	2.00

3 Buttons

CR2940-3A1	Forward—Reverse—Stop....	\$8.00
CR2940-3C1	Start—Slow—Stop.....	8.50
CR2940-3D1	Open—Close—Stop.....	8.00

4 Buttons

CR2940-4A1	Forward—Jog Forward—Reverse—Stop.....	\$13.00
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5 Buttons

CR2940-5A1	Forward—Jog Forward—Reverse—Jog Reverse—Stop..	\$16.00
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Maintaining Contact

One Selector Switch

CR2940-A2	Safe Stop—Run.....	\$5.00
CR2940-B2	Stop—Run.....	5.00
CR2940-C2	Slow—Fast.....	5.00
CR2940-D2	Creep—Normal.....	5.00
CR2940-E2	Open—Close.....	5.00
CR2940-F2	On—Off.....	5.00
CR2940-G2	Stop—Start.....	5.00
CR2940-H2	Raise—Lower.....	5.00

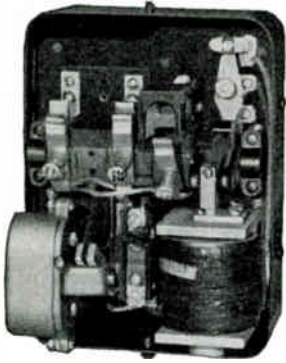
Stations for Special Applications



No. CR2943-E200B

CR2943-E200B	Start—Stop (Water-Tight).....	\$7.00
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G-E Type CR4052 D.C. Definite Mechanical Time Starters
Constant Speed—Non-Reversing—Non-Jogging—Without Dynamic Braking
 Maximum Rating, 5 Hp., 115 Volts; 10 Hp., 230 Volts



Typical CR4052-A1L Starter with Cover Removed

Types CR4052-A1L and -A2L starters are non-reversing, non-jogging, general purpose starters designed for use with constant-speed direct current motors up to 5 hp. 115 volts and 10 hp. 230 volts. They consist of a solenoid-operated multifinger contactor and a temperature overload relay (either hand or automatic reset), all mounted on a molded Textolite base on the back of which is mounted the Class 115 starting resistor. The multifinger contactor has a blow-out and arc chute on the line contact to interrupt the arc quickly.

The starters can be applied, within their rating, to constant-speed motors up to and including 1800 rpm. that do not require more than 150% full-load torque to start nor longer than 10 seconds to attain full speed. Before using these starters on 3600-rpm. motors, or on motors that require longer than 10 seconds to attain full speed, the application should be checked with the nearest district office. These starters provide isothermic overload protection, hand or

automatic reset, and undervoltage protection or release depending on the accessory used.

Supplied in N.E.M.A. Type 1 enclosing case.

Order by number and form, and specify motor with which starter is to be used. Order relay heater from table below.

Non-reversing, non-jogging pushbutton stations: Type CR2940-B579J, \$2.00; Type CR2940-2A1, \$6.00.

Heaters for Thermal Overload Devices

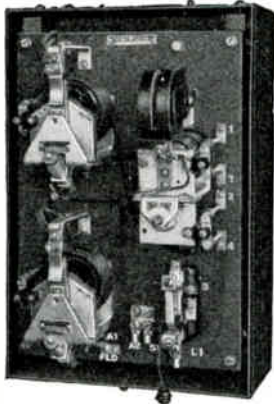
Listed values are for motors rated 40° C. continuous. For motors rated 50° C. continuous, use heaters one size smaller than listed.

No.	Full-Load Current of Motor, Amperes	No.	Full-Load Current of Motor, Amperes	No.	Full Load Current of Motor, Amperes
81D228	315-353	81D241	1.72-1.91	81D253	9.5-11.0
81D229	354-418	81D242	1.92-2.24	81D254	11.1-11.8
81D230	419-465	81D243	2.25-2.5	81D255	11.9-13.2
81D231	466-53	81D244	2.51-3.0	81D265	13.3-15.8
81D232	54-64	81D245	3.1-3.4	81D256	15.9-19.0
81D233	65-73	81D246	3.5-3.9	81D257	19.1-22.1
81D234	74-83	81D247	4.0-4.8	81D258	22.2-26.0
81D235	84-93	81D248	4.9-5.3	81D259	26.1-28.5
81D236	94-1.02	81D249	5.4-5.7	81D260	28.6-33.1
81D237	1.03-1.15	81D264	5.8-6.8	81D262	33.2-38.7
81D238	1.16-1.3	81D250	6.9-7.8	81D266	38.8-43.5
81D239	1.31-1.45	81D251	7.9-8.9		
81D240	1.46-1.71	81D252	9.0-9.4		

115 Volts				No. of Accelerating Points	Approx. Ship. Wt. Lb.
No.	*Each	Form	Hp.		
6932902G10	\$46.00	A1L	1/2-3/4	3	20
6932902G11	46.00	A1L	1-1 1/2	3	20
6932902G12	46.00	A1L	2	3	20
6932902G13	46.00	A1L	3	3	20
6932903G5	71.00	A1L	5	3	31

230 Volts				No. of Accelerating Points	Approx. Ship. Wt. Lb.
No.	*Each	Form	Hp.		
6932902G6	\$46.00	A1L	1/2-3/4	3	20
6932902G7	46.00	A1L	1-1 1/2	3	20
6932902G8	46.00	A1L	2	3	20
6932902G9	46.00	A1L	3	3	20
6932902G14	52.00	A1L	5	3	20
6932903G6	52.00	A2L	7 1/2	3	31
6932903G7	71.00	A2L	10	3	31

G-E Type CR4061 D.C. Definite Magnetic-Time, Heavy Duty Starters
Constant Speed—Non-Reversing—Jogging—Without Dynamic Braking
 Maximum Rating, 10 Hp., 115 Volts; 20 Hp., 230 Volts

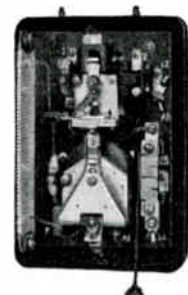


Typical CR4061-A1C Starter with Cover Removed

Order a starter by number and form.
 Order one relay heater from table above.

Pushbutton Station

Non-reversing, jogging. This pushbutton station has pigtail and latch on jog, and is for use with starters listed below.
 Type CR2940-3DP1..... each \$9.50



Typical CR4061-A1A, 1 to 3 Hp. Definite Magnetic Time-Heavy Starter

Modifications

Field-protective relay, \$32.00; field decelerating relay, \$38.00; fused, control-circuit knife switch, \$23.00; control-circuit fuses, \$12.00; auxiliary control relay, \$29.00; jogging relay, for use with pushbutton station that has no jog attachment, non-reversing, \$14.00.

115 Volts				No. of Accelerating Points	Approx. Ship. Wt. Lb.
No.	*Each	Form	Hp.		
4389745G9	\$70.00	A1A	1/2-3/4	2	25
4389745G10	70.00	A1A	1-1 1/2	2	25
4389745G29	70.00	A1A	2	2	25
4389745G30	75.00	A1A	3	2	25
5367125G6	85.00	A1C	5	3	60
5367125G7	140.00	A1C	7 1/2	3	60
5367125G3	145.00	A1C	10	3	60

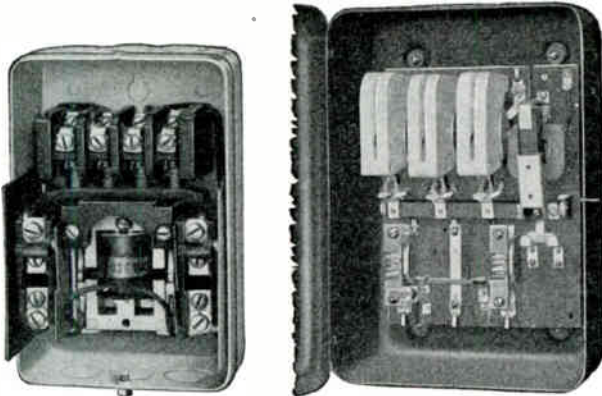
230 Volts				No. of Accelerating Points	Approx. Ship. Wt. Lb.
No.	*Each	Form	Hp.		
4389745G3	\$70.00	A1A	1/2-3/4	2	25
4389745G4	70.00	A1A	1-1 1/2	2	25
4389745G31	70.00	A1A	2	2	25
4389745G32	70.00	A1A	3	2	25
4389745G33	75.00	A1A	5	2	25
5367125G10	80.00	A1C	7 1/2	3	60
5367125G4	85.00	A1C	10	3	60
5367125G8	135.00	A1C	15	3	60
5367125G9	140.00	A1C	20	3	60

*Price includes relay heater, but no pushbutton station. Relay heaters may be omitted or additional ones supplied at 60 cents each.

G-E Type CR7006 A.C. Magnetic Switches

For Throwing Single, 2 or 3-Phase Motors Directly on the Line

25, 50 and 60 Cycles



Type CR7006-D50B, Size 0, with Cover Removed

Type CR7006-D30B, Size 2, with Cover Removed

These switches consist of a 2 or 3-pole magnetically-operated contactor with overload relays mounted on a base and enclosed in a suitable case. Provides undervoltage protection or release. May be operated by means of a push button station, float or pressure switch, etc.

Prices will be quoted on request on these switches designed specially for installation in dusty or corrosive atmospheres or in Class I Group D hazardous gas locations.

Order by CR number and specify rating of motor with which to be used and heater units required for overload protection.

Nomenclature	*Switch Each	Push Button Station Each	OMISSION PRICES			MAX. HP.			No. of Poles
			Case Each	Necessary Relay Heaters Each	Relay Each	3 Ph.	2 Ph.	1 Ph.	
CR7006-D50A	\$12.00	\$2.00	\$1.00	\$.60			1	0	2
CR7006-D50B	14.00	2.00	1.00	1.20			1½	0	3
CR7006-D40G	14.00	2.00	1.00	.60			1½	1	2
CR7006-D40H	16.00	2.00	1.00	1.20			3	1½	3
CR7006-D30B	30.00	2.00	3.00	1.20			7½	3	2 3
CR7006-D 7B	50.00	2.00	7.00	1.20			10	7½	3
CR7006-D31B	112.00	2.00	15.00	1.20			25		4 3
CR7006-D38A	226.00	6.00	25.00		\$38.00		50		5 3

220 Volts									
Nomenclature	*Switch Each	Push Button Station Each	Case Each	Necessary Relay Heaters Each	Relay Each	3 Ph.	2 Ph.	1 Ph.	No. of Poles
CR7006-D50A	\$12.00	\$2.00	\$1.00	\$.60			1½	0	2
CR7006-D50B	14.00	2.00	1.00	1.20			2	0	3
CR7006-D40G	14.00	2.00	1.00	.60			3	1	2
CR7006-D40H	16.00	2.00	1.00	1.20			5	3	1 3
CR7006-D30B	30.00	2.00	3.00	1.20			15	7½	2 3
CR7006-D 7B	50.00	2.00	7.00	1.20			25	15	3
CR7006-D31B	112.00	2.00	15.00	1.20			50		4 3

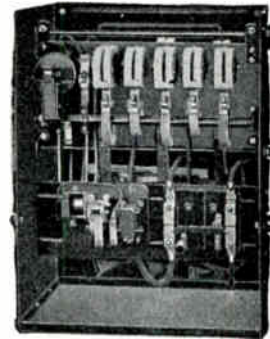
440-600 Volts									
Nomenclature	*Switch Each	Push Button Station Each	Case Each	Necessary Relay Heaters Each	Relay Each	3 Ph.	2 Ph.	1 Ph.	No. of Poles
CR7006-D50A	\$12.00	\$2.00	\$1.00	\$.60			1½	0	2
CR7006-D50B	14.00	2.00	1.00	1.20			2	0	3
CR7006-D40G	14.00	2.00	1.00	.60			5	1	2
CR7006-D40H	16.00	2.00	1.00	1.20			7½	5	1 3
CR7006-D30B	30.00	2.00	3.00	1.20			25	10	2 3
CR7006-D 7B	50.00	2.00	7.00	1.20			50	25	3 3

*Price of switch includes necessary relay heaters or relay, but no push button.

G-E Type CR705 A.C. Magnetic Reduced Voltage Starters

For Squirrel-Cage Induction Motors

60 Cycles



Size 1 Starter

Provides remote control for constant-speed squirrel-cage induction motors on compressors, blowers and any application that does not require longer than 15 seconds to attain full speed, once every 4 minutes for an hour.

Consists chiefly of an autotransformer for supplying reduced voltage to motor during acceleration, accelerating contactor which connects autotransformer to line and motor to low-voltage taps, line contactor, temperature overload relay, a definite time relay which causes accelerating contactor to open and line contactor to close after a predetermined time.

Size No. 1—3-Phase, 3-Wire

MOTOR RATING H.P.	Volts	†Cat. No.	*Each	MOTOR RATING H.P.	Volts	†Cat. No.	*Each
5	220	4386985G3	\$171.00	20	440	4386985G7	\$187.00
	440	4386985G4	171.00		550	4386985G8	187.00
	550	4386985G5	171.00	25	220	4386985G6	200.00
7½	220	4386985G3	171.00		440	4386985G7	187.00
	440	4386985G4	171.00		550	4386985G8	187.00
	550	4386985G5	171.00	30	220	4386985G9	207.00
10	220	4386985G3	171.00		440	4386985G10	207.00
	440	4386985G4	171.00		550	4386985G11	207.00
	550	4386985G5	171.00	40	440	4386985G12	224.00
15	220	4386985G3	171.00		550	4386985G13	224.00
	440	4386985G4	171.00	50	440	4386985G12	224.00
	550	4386985G5	171.00		550	4386985G13	224.00
20	220	4386985G6	200.00				

Size No. 1—2-Phase, 3-Wire

MOTOR RATING H.P.	Volts	†Cat. No.	*Each	MOTOR RATING H.P.	Volts	†Cat. No.	*Each
5	220	4386983G2	\$171.00	20	440	4386983G6	\$187.00
	440	4386983G3	171.00		550	4386983G7	187.00
	550	4386983G4	171.00	25	220	4386983G5	200.00
7½	220	4386983G2	171.00		440	4386983G6	187.00
	440	4386983G3	171.00		550	4386983G7	187.00
	550	4386983G4	171.00	30	220	4386983G8	207.00
10	220	4386983G2	171.00		440	4386983G9	207.00
	440	4386983G3	171.00		550	4386983G10	207.00
	550	4386983G4	171.00	40	440	4386983G11	224.00
15	220	4386983G2	171.00		550	4386983G12	224.00
	440	4386983G3	171.00	50	440	4386983G11	224.00
	550	4386983G4	171.00		550	4386983G12	224.00
20	220	4386983G5	200.00				

Ammeter Attachment (Includes Ammeter).....each \$64.00

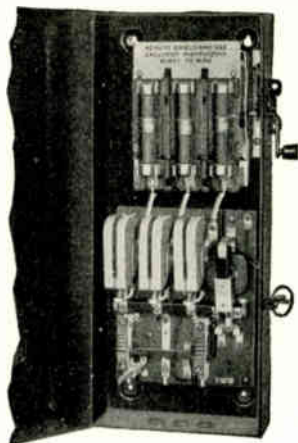
*Price is for compensator, relay heater units and push-button station. Relay heater units may be omitted or additional ones supplied at 60 cents each; push-button station may be omitted or additional ones supplied at \$2.00 each.

†Cat. No. does not include relay heater units.

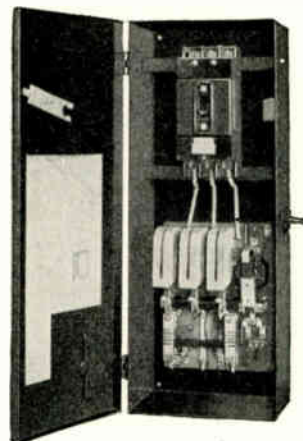
G-E Type CR7008 A.C. Combination Magnetic Switches

Full-Voltage Starters for Induction Motors

Air-Break or Oil-Immersed—Undervoltage Protection or Release—Thermal Overload Protection
—Maximum Voltage, 600—25-60 Cycles—3 or 2-Phase



Size 2, Fusible Switch in Type I, General-Purpose Case



Size 2 Switch with Air Circuit Breaker in Type I, General-Purpose Case

This combination device consists of a standard full-voltage starter enclosed in the same case with a motor-circuit switch or an air circuit breaker, operated from the outside of the case. Fusible motor-circuit switches can be furnished with the air-break switches.

A CR7008 combination magnetic switch and a CR2940 momentary-contact "start"-"stop" push-button station make a simple and reliable equipment for starting a small alternating-current motor. The combination provides complete protection to both the motor and the operator. The switch and push-button station are completely enclosed, which prevents accidental contact with any live parts.

These switches can be used with any pilot control, such as float switches or pressure governors. They also are suitable for use as primary switches in connection with wound-rotor motors.

The fuse clips will accommodate fuses for average values of motor current when the fusing practice is in accordance

with the 1937 National Electrical Code recommendations, which require that:

1. Squirrel-cage motors should be fused at not more than 300% of rated motor current.
2. High-reactance motors rated at not more than 30 amperes should be fused at not more than 250% of rated motor current, or, if rated at more than 30 amperes, should be fused at not more than 200% of rated motor current.
3. Wound-rotor motors should be fused at not more than 150% of rated motor current.

Fuse clips must likewise be of a size which will accommodate the maximum rating of fuse calculated in accordance with the above percentages. It is always desirable to check the fuse-clip recommendations for a particular value of motor current, to insure that a fuse of suitable size can be used. In no case should the size of fuse used exceed 400% of rated motor current.

MAXIMUM HP.				Size No.	Fuse-Clip Capacity, Amp.	208 and 220 Volts			Including Relay Heaters and Oil Each	Approx. Ship. Wt. Lb.	Including Relay Heaters Each	Approx. Ship. Wt. Lb.	Including Relay Heaters and Oil Each	Approx. Ship. Wt. Lb.	Including Relay Heaters and Oil Each	Approx. Ship. Wt. Lb.
Squirrel-Cage	High-Reactance	Wound-Rotor	Single-Phase			In Type I General-Purpose Case with Motor-circuit Switch*	In Type I General-Purpose Case with Air Circuit Breaker	In Type V Dust-Tight Case with Motor-circuit Switch									Oil-immersed Switch for Corrosive Atmospheres (Type V Case)	Oil-Immersed Switch in Type VIII Case for Class I, Group D, Locations
3	3	5	2	1	30	\$32.00	25	25	30	\$45.00	40					
5	5	5	3	1	60	32.00	30	30	\$37.00	30	45.00	45	\$84.00	120	\$95.00	125
5	5	5	3	1	Unfused	25.00	25	25	..	39.00	40					
7 1/2	7 1/2	10	2	2	60	52.00	55	53.00	55	68.00	90					
10	15	15	7 1/2	2	100	52.00	55	53.00	55	68.00	90					
15	15	15	7 1/2	2	200	58.00	55	53.00	55	75.00	90	102.00	150	117.00	155	
15	15	15	7 1/2	2	Unfused	42.00	50	..	..	59.00	80					
20	20	20	3	3	100	86.00	105	..	..	109.00	145					
25	25	25	10	3	200	86.00	105	93.00	105	109.00	145					
25	25	25	3	3	Unfused	70.00	95	..	..	93.00	135	169.00	165	192.00	170	
30	30	30	15	3	Unfused	..	..	..	..	..	..
440 Volts																
7 1/2	7 1/2	7 1/2	5	1	30	\$32.00	30	30	30	\$45.00	45					
7 1/2	7 1/2	7 1/2	5	1	Unfused	25.00	25	..	..	39.00	40	\$84.00	120	\$95.00	125	
10	10	10	2	2	30	52.00	55	..	..	68.00	90					
15	15	25	7 1/2	2	60	52.00	55	56.00	55	68.00	90					
25	25	10	2	2	100	52.00	55	56.00	55	68.00	90	102.00	150	117.00	155	
25	25	25	10	2	Unfused	42.00	50	..	..	59.00	80					
30	30	30	3	3	60	86.00	105	..	..	109.00	145					
40	40	50	3	3	100	86.00	105	..	..	109.00	145					
50	50	50	3	3	200	92.00	105	99.00	105	115.00	145	169.00	165	192.00	170	
50	50	50	3	3	Unfused	70.00	95	..	..	93.00	135					

*For switch with test jack, add \$7.00.

†Prices do not include fuses. Relay heaters may be omitted or additional ones furnished at \$.60 each.

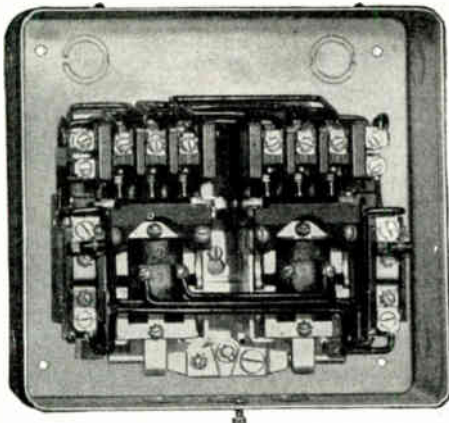
‡Also available in Type V Dust-Tight case.

Heaters for above switches are listed on another page.

G-E Type CR7009 A.C. Magnetic Reversing Switches—Size 0

With Type CR2810, Size 0 Contactors

*Polyphase Rating—1½ Hp., 110 Volts; 2 Hp., 220-250 Volts



Typical Horizontally Mechanically Interlocked, Magnetic Reversing Switch with Overload Relays, in Type 1, General-Purpose Case—Cover Removed

G-E Type CR7009 size 0 magnetic reversing switches are particularly suitable for reversing small polyphase a.c. motors. The switches consist of two mechanically interlocked, magnetically operated, size 0 contactors. All listed forms are furnished with one normally open electrical interlock on each contactor, for use in the holding circuit.

Mechanical Interlocks. The horizontal mechanical interlock arm is pivoted on a cadmium plated steel base, to which the two contactors are also rigidly fastened. This firm assembly minimizes the possibility of improper operation due to misalignment of parts.

Connections. The standard forms of the switches are so arranged that all external power and control connections are made to terminals on the top of the contactor. These terminals are clearly numbered and are readily accessible from the front of the switch. All connections are made with a screwdriver.

Undervoltage Protection or Release. This magnetic switch and a momentary-contact Forward-Reverse-Stop push-button station afford a simple and reliable means of starting and reversing a small a.c. motor. On failure of voltage, the switch opens, and will not reclose until the Forward or Reverse button is depressed. Undervoltage release is provided by the use of a maintaining-contact push-button station, or other maintaining-contact device.

When a snap-action maintained pilot switch is used, the normally open interlocks should be replaced by normally closed interlocks to provide electrical interlocking. This modification should be specified on the order—it does not change the price.

Overload Protection. When overload protection is desired, two temperature overload relays are provided and may be either hand or automatic reset. The relays are furnished hand reset. Various rated relay heaters are available for use with motors of different ratings.

Enclosing Cases. The enclosed forms are furnished in attractive, Type 1 sheet metal cases which are suitable for general-purpose applications indoors and where the atmospheric conditions are normal.

Ordering Directions. Order a magnetic reversing switch by CR number, form, root number and suffix number from supplementary table. Example: a 3-pole, open-type reversing switch, with mechanical interlock, less overload relays, for operation on 220 volts, 60 cycles would be ordered—one CR7009-B40U, No. 5368680U3.

For special voltage or frequency, order a magnetic reversing switch by CR number, form and root number, and specify correct voltage and frequency.

For switches with overload relays, order two heaters from table at the bottom of this page.

Order Type CR2943-A300 push-button station separately.

Open-Type Switch without Overload Relays

Form No.	†Root No.	‡Without Push-Button Station Each	§No. of Main Poles on Each Contactor	No. of Overload Relay Heaters Required	Approx. Ship. Wt. Lb.
B40C	5368680C	\$24.00	2	..	7
B40U	5368680U	26.00	3	..	7
B40AP	5368680AP	32.00	4	..	8

Switch in Type 1 Case without Overload Relays

B40L	5368680L	\$25.00	2	..	15
B40AF	5368680AF	27.00	3	..	15
B40BA	5368680BA	33.00	4	..	16

Open-Type Switch with Overload Relays

B40A	5368680A	\$26.00	2	2	8
B40S	5368680S	29.00	3	2	8
B40AM	5368680AM	35.00	4	2	9

Switch in Type 1 Case with Overload Relays

B40J	5368680J	\$27.00	2	1	16
B40AD	5368680AD	30.00	3	1	16
B40AV	5368680AV	36.00	4	1	17

*Where normal operation requires repeated opening of stalled motor current, such as plug stop or jogging (inching) duty requiring continued operation at a rate in excess of 5 per minute, the following motor hp. ratings apply:

Polyphase—110 volts, ¾ hp.
220 volts, 1 hp.
440-550 volts, 1 hp.

†For complete number, add suffix number from table below.
‡Price includes one heater for 2-pole switches, and two heaters for 3-pole and 4-pole switches. Heaters may be omitted or additional ones furnished at 60 cents each.

§In addition to the main poles, each contactor is equipped with one normally open interlock to provide undervoltage protection when used with momentary-contact push-button station.

Supplementary Table for Completing Root Number

Frequency Cycles	SUFFIX NUMBERS					
	110 Volts	208 Volts	220 Volts	440 Volts	550 Volts	600 Volts
60	2	24	3	4	5	6
50	7	..	8	9	10	11
40	12	..	13	14	15	16
25	17	..	18	19	20	..

Overload Relay Heaters

No.	‡FULL LOAD CURRENT OF MOTOR, AMPERES		No.	‡FULL LOAD CURRENT OF MOTOR, AMPERES	
	Enclosed Switches	Open Switches		Enclosed Switches	Open Switches
81D228	0.28 - 0.313	0.315 - 0.353	81D243	2.01 - 2.26	2.25 - 2.5
81D229	.314 - .365	.354 - .418	81D244	2.27 - 2.61	2.51 - 3.
81D230	.366 - .422	.419 - .465	81D245	2.62 - 3.04	3.1 - 3.4
81D231	.423 - .48	.466 - .53	81D246	3.05 - 3.48	3.5 - 3.9
81D232	.49 - .56	.54 - .64	81D247	3.49 - 4.26	4. - 4.8
81D233	.57 - .65	.65 - .73	81D248	4.27 - 4.87	4.9 - 5.3
81D234	.66 - .74	.74 - .83	81D249	4.88 - 5.21	5.4 - 5.7
81D235	.75 - .82	.84 - .93	81D264	5.22 - 5.91	5.8 - 6.6
81D236	.83 - .91	.94 - 1.02	81D250	5.92 - 6.95	6.7 - 7.8
81D237	.92 - 1.04	1.03 - 1.15	81D251	6.96 - 7.9	7.9 - 8.9
81D238	1.05 - 1.16	1.16 - 1.3	81D252	8. - 8.7	9. - 9.4
81D239	1.17 - 1.31	1.31 - 1.45	81D253	8.8 - 9.8	9.5 - 11
81D240	1.32 - 1.52	1.46 - 1.71	81D254	9.9 - 10.5	11.1 - 11.8
81D241	1.53 - 1.74	1.72 - 1.91	81D255	10.6 - 11.8	11.9 - 13.2
81D242	1.75 - 2	1.92 - 2.24	81D265	11.9 - 13.5	13.3 - 14.3

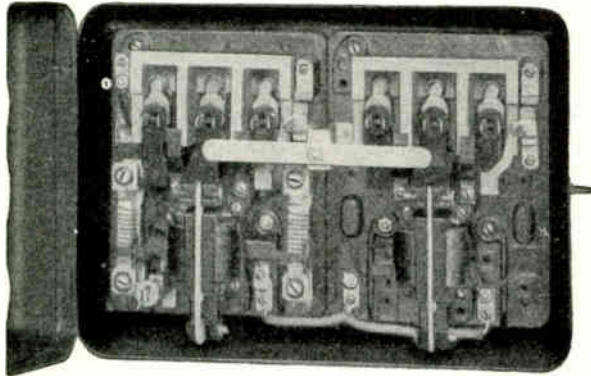
¶For continuous-rated 40°C. rise motors, select heaters from table above. For continuous 50°C. and 55°C. motors, multiply full-load current of motor by .9 and use this value to select heaters from table above.

To protect the heater and starter during short circuit, provide motor branch-circuit fuses in accordance with N.E. code. In no case should fuse ratings exceed four times the motor full-load current.

G-E Type CR7009 A. C. Magnetic Reversing Switches—Sizes 1, 2, 3 and 4

110 to 600 Volts—Up to 100 Hp.

G-E Type CR7009 Magnetic Switches are suitable for use with reversing motors which are thrown directly across the line or which are controlled by automatic starters. Each switch consists of two mechanically interlocked, magnetically operated, three-pole contactors with overload relay. The entire assembly is mounted in a suitable enclosure. The switches can be controlled remotely through push-button stations, limit switches, or other pilot devices.



Size 1 Magnetic Reversing Switch with Cover Open

Undervoltage Protection or Release. These switches are ordinarily operated by a momentary-contact Forward-Reverse-Stop push-button station. A normally open interlock is furnished on both the forward and the reverse contactors of all sizes of switches, and completes the holding circuit.

Overload Protection. Each switch is provided with a two-element hand-reset thermal overload relay. Provision is made for external resetting of the overload relays on Sizes 1 to 3 inclusive. On Size 4, it is necessary to open the door to reset the relay.

Type 1, General-Purpose Enclosures. Sizes 1 to 3 switches are enclosed in wall-mounted cases which have covers hinged on the side and which are held closed by clasps. Size 4 is provided with a floor-mounted case.

Ordering Directions. Order a magnetic reversing switch by CR number and complete number (root number plus suffix number).

Order a relay or two heaters from table at the bottom of this page.

Order Type CR2943-A300A push-button station separately.

Nomenclature	Root No.	Suffix No.			Without Push-Button Station Each	MAXIMUM HP.		Size No.	Relay or Heater No.	Approx. Ship. Wt. Lb.	OMISSION PRICES	
		60 Cycles	50 Cycles	25 Cycles		3 or 2-Phase	1-Phase				Enclosing Case	Heater
CR7009-B20A	3885956	G102	G107	G117	\$35.00	3	1½	1	1	25	\$2.00	\$1.20
CR7009-B18C	4383048	G2	G7	G17	67.00	7½	3	2	2	80	6.00	1.20
CR7009-B24A	4383441	G102	G107	G117	105.00	10	....	3	2A	90	11.00	1.20
CR7009-B24AJ	5367692	G2	G7	G17	105.00	15	....	3	3	300	19.00	1.20
CR7009-B26B	4389486	G2	G7	G17	263.00	25	....	4	3	300	19.00	1.20
220 Volts												
CR7009-B20A	3885956	G103	G108	G118	\$35.00	5	3	1	1	25	\$2.00	\$1.20
CR7009-B18C	4383048	G3	G8	G18	67.00	15	7½	2	2	80	6.00	1.20
CR7009-B24A	4383441	G103	G108	G118	105.00	25	....	3	2A	90	11.00	1.20
CR7009-B24AJ	5367692	G3	G8	G18	105.00	30	....	3	3	300	19.00	1.20
CR7009-B26B	4389486	G3	G8	G18	263.00	50	....	4	3	300	19.00	1.20
440 Volts												
CR7009-B20A	3885956	G104	G109	G119	\$35.00	7½	5	1	1	25	\$2.00	\$1.20
CR7009-B18C	4383048	G4	G9	G19	67.00	25	10	2	2	80	6.00	1.20
CR7009-B24A	4383441	G104	G109	G119	105.00	50	....	3	2A	90	11.00	1.20
CR7009-B26B	4389486	G4	G9	G19	263.00	100	....	4	3	300	19.00	1.20
550 Volts												
CR7009-B20A	3885956	G105	G110	G120	\$35.00	7½	5	1	1	25	\$2.00	\$1.20
CR7009-B18C	4383048	G5	G10	G20	67.00	25	10	2	2	80	6.00	1.20
CR7009-B24A	4383441	G105	G110	G120	105.00	50	....	3	2A	90	11.00	1.20
CR7009-B26B	4389486	G5	G10	G20	263.00	100	....	4	3	300	19.00	1.20
600 Volts												
CR7009-B20A	3885956	G106	G111	G121	\$35.00	7½	5	1	1	25	\$2.00	\$1.20
CR7009-B18C	4383048	G6	G11	G21	67.00	25	10	2	2	80	6.00	1.20
CR7009-B24A	4383441	G106	G111	G121	105.00	50	....	3	2A	90	11.00	1.20
CR7009-B26B	4389486	G6	G11	G21	263.00	100	....	4	3	300	19.00	1.20

†Price includes overload relays or heaters.

Accessories



Two-Button Station for General-Purpose Applications



Master Switch Control Station

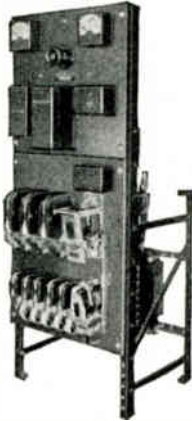
These magnetic reversing switches are generally controlled by push-button stations. They can also be controlled by a small master switch. Many applications, such as motor-operated doors and windows, valves and machine tools, require either a geared-type or track-type limit switch in addition to the reversing switch and push-button station.

Complete information and prices will be furnished on application.



G-E Synchronous Motor Controllers

2 or 3-Phase, 3-Wire 50 or 60 Cycles
 Undervoltage Protection (Time Delay above 600 Volts)
 Thermal Overload Protection of Stator and Squirrel-Cage Windings
 Automatic Speed-Responsive Field Control



Typical CR7061 Reduced-Voltage Magnetic Controller for Low-Voltage Application (below 600 Volts)

Available in four types: full-voltage, magnetic; full-voltage, semi-magnetic; reduced-voltage, magnetic; and reduced voltage, semi-magnetic. Magnetic controllers are controlled by push buttons, whereas semi-magnetic controllers are equipped with manual starting devices. Both types have automatic field application and removal equipment.

The following equipment is common to all types: a.c. line ammeter, d.c. field ammeter, field applying contactor and field discharge contactor with discharge resistor; slip cycle impedance relay and auxiliary devices to apply field at critical speed and favorable angle and to remove field on pull-out within first slip-cycle, stator temperature overload relay and temperature squirrel-cage protective relay, and drilling for exciter field rheostat.

The full-voltage magnetic controllers employ a magnetically operated contactor for connecting the motor to the line, and the semi-magnetic type is equipped with a manually-operated circuit breaker.

Reduced-voltage magnetic controllers are furnished with starting and running contactors and an auto-transformer for supplying reduced voltage to the motor in starting. The accelerating time is automatically determined by a telechron-motor-operated transfer relay, which is adjustable.

The reduced-voltage semi-magnetic controllers are similar to the magnetic type except that the starting and running devices are manually-operated.

Rating of Controller Hp.	Power-Factor	Voltage Range	Reduced-Voltage Controller				Full-Voltage Controller			
			Magnetic CR7061		Semi-Magnetic CR7062		Magnetic CR7065		Semi-Magnetic CR7066	
			Each	Panel No.	Each	Panel No.	Each	Panel No.	Each	Panel No.
25	20	220	\$620	111	\$520	121	\$445	131	...	...
		440	572	111	520	121	425	131	...	...
		550	572	111	520	121	425	131	...	...
		2200	1361	211	817	221	784	231	\$805	533
30	25	220	620	111	520	121	445	131	...	...
		440	572	111	520	121	425	131	...	...
		550	572	111	520	121	425	131	...	...
		2200	1361	211	832	221	784	231	805	533
40	30	220	633	112	524	121	445	132	...	...
		440	633	111	524	121	445	131	...	...
		550	633	111	524	121	445	131	...	...
		2200	1379	211	832	221	784	231	805	533
50	40	220	775	112	600	123	495	132	...	...
		440	642	111	530	121	445	131	...	...
		550	642	111	530	121	445	131	...	...
		2200	1389	211	837	221	784	231	805	533
60	50	220	775	112	606	123	495	132	...	...
		440	662	111	530	121	445	131	...	...
		550	662	111	530	121	445	131	...	...
		2200	1389	211	837	221	784	231	805	533
75	60	220	911	114	613	123	605	134	...	...
		440	784	112	613	123	495	132	...	...
		550	784	112	613	123	495	132	...	...
		2200	1409	211	852	221	784	231	805	533

G-E Type CR7505 Photoelectric Relays



Types CR7505-2

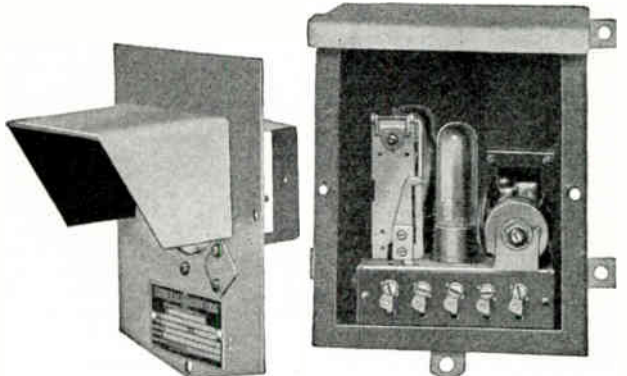
For certain control problems, G-E photoelectric relays offer many definite advantages over more conventional control devices.

All units have an adjustable sensitivity to meet various conditions of phototube illumination, and may be adjusted either to close or to open a circuit upon suitable light change.

A separate phototube holder can be mounted in any position by means of a mounting bracket, which is included.

Type CR7505-A100. This general purpose relay is for indoor application. It has an extended phototube holder, and is often applied where mounting space for the phototube is limited, or where the phototube will be subject to considerable vibration. The use of tubes, which are designed for long life, makes this unit especially desirable for installations which have infrequent inspection. The unit also includes a 15-ampere a.c. contactor for operation of the controlled electric circuit.

Type CR7505-G100. The thyatron relay is designed for indoor applications where high-speed response is necessary. The load may be handled by a 15-ampere a.c. contactor or may be handled directly by the thyatron tube, thus eliminating all moving parts. This device also uses the industrial type tubes which are designed for long life. Type CR7505-G100 is furnished with an extended phototube holder.



Type CR7505-M2, with Cover Removed

Types CR7505-K2, -K1, -L2, and -M2. These general purpose, self-contained relays are applied where the complete photoelectric relay can be mounted to receive the beam of light, and where the per cent change in light is adequate. Types CR7505-K2 and -K1 are for a.c. indoor application. Type CR7505-L2 is for d.c. indoor application; and Type CR7505-M2 is for a.c. outdoor application.

These relays may either open or close the controlled circuit when the light beam is interrupted. The relay tips are rated one ampere at 110 volts and will operate small magnetic devices directly. It is recommended that a small capacitor be connected across such inductive loads to insure maximum life of the relay tips.

For certain applications, an extended phototube holder can be added to Type CR7505-K2 and -L2 relays. A combination plug, cable and phototube holder is available.

A special cover, No. CR7500-F1, can be added to Types CR7505-K2 or -L2 to increase the sensitivity and to make the units directional.

Order by CR number and specify voltage and frequency.

Type	With Tubes Each	Volts	Cycles	DIMEN. OF PANEL ENCL. IN. APPROX.			Ship. Wt. Lb.
				Height	Width	Depth	
CR7505-A100	\$70.00	115	60/50	9 1/16	7 1/16	4 7/8	35
		230	60/50				
	72.00	115	25				
		230	25				
CR7505-G100	90.00	115	60	10 1/8	7 1/8	8 3/8	35
		230	60				
CR7505-K2	35.00	115	60/50	7 1/16	5	4 1/2	5
CR7505-K1	38.00	115	25	7 1/16	5	4 1/2	5
CR7505-L2	40.00	115	D.C.	7 1/16	4 15/16	4 1/2	5
CR7505-M2	62.00	115	60/50	7 1/16	7 3/8	9 7/8	15

Numerous special photoelectric devices are also available. For information refer to the nearest G-E sales office.

**G-E Type CR7500 Photoelectric Accessories
For Type CR7505 Photoelectric Relays
Light Sources**

In some cases, the operating light source for use with a photoelectric relay may be an ordinary domestic Mazda lamp. For many applications, and for those in which the light source must be at some considerable distance from the phototube, a light source of greater intensity is required.

G-E Type CR7500 light sources employ a low voltage, concentrated-filament lamp of the type commonly used in automobile headlights. A double contact lamp socket permits the use of a single or double-filament Mazda lamp, to which voltage is supplied by a separately mounted transformer.

Type CR7500-A4. This general-purpose light source is designed for indoor service to be used with the Type CR7505 photoelectric relays. The unit consists of a metal conduit box. A lens with an arrangement for focusing is mounted on the cover of the box.

Type CR7500-G1A. For general-purpose, indoor application. Of cast-aluminum construction with a snap-on steel cover. The unit is provided with an adjustable optical system, adjustment being made by removing the back cover and loosening one screw. By means of an adjustable bracket, the unit may be mounted in any position, but it is preferable that the mounting be such that the lamp is upright.

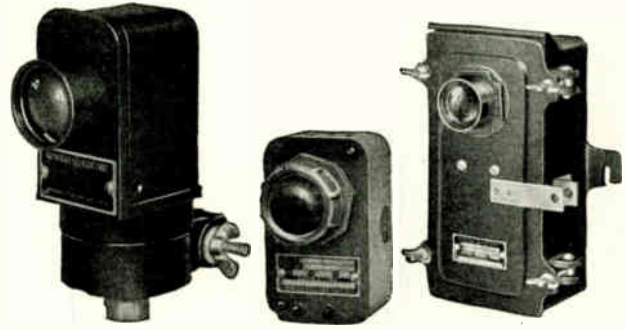
A Type CR7500-K2 infra-red filter cap may be fitted to the end of the lens barrel so that an invisible beam can be produced where a visible beam would be objectionable.

Type CR7500-G3A. This light source for indoor service is similar to Type CR7500-G1A except that an additional lens is added to provide a short-focus concentrated beam of light. This unit will concentrate an intense spot of light approximately 1/4 inch in diameter at a distance of 2 inches from the lens. The appearance and dimensions are the same as Type CR7500-G1A.

Type CR7500-B2. Light source consists of a cast iron enclosing case with rubber gaskets, in which is mounted a No. 9TM321A1 transformer. For outdoor service—weather-

Indoor Light-Source Transformers

This transformer may be used to supply low voltage a.c. to one Mazda 21 or 32-candlepower lamp in any one of the indoor light sources. It is rated 110/220 volts primary with a secondary voltage to provide approximately 1000 hours' life from either a 21 or 32-candlepower, 6-8-volt Mazda automobile lamp. A tap is also provided on the secondary to give approximately 3000 hours' life from either a 21 or



Type CR7500-G1A Type CR7500-A4 Type CR7500-B2

proof. The cover mounts a lens and arrangement for focusing and a double-contact lamp socket.

Order light sources by CR number. Specify voltage and frequency for transformer to be used with indoor light source; specify voltage and frequency for Type CR7500-B2.

Type	Without Lamp or Transformer, Each	DIMENSIONS, INCHES			Approx. Ship. Wt. Lb.
		Height	Width	Depth	
CR7500-A4	\$6.00	4 1/4	2 1/2	3 5/8	6
CR7500-G1A	15.00	5 3/8	2 1/4	4 1/2	6
CR7500-G3A	17.00	5 3/8	2 1/4	4 1/2	6
*CR7500-B2	*27.00	8 3/8	6 3/8	4 7/8	12

*Price and number include a 60-cycle transformer. A 25-cycle transformer cannot be mounted in the outdoor type of light source because the physical dimensions of the transformer are too great. Separate outdoor 25-cycle transformer can be furnished at \$20.00, and the 60-cycle transformer can be omitted at \$5.00.

Indoor Light-Source Transformers

	115/230	†115/230	115/230	†115/230
Volts.....				
Cycles.....	50/60	50/60	25	25
Each.....	\$5.00	6.00	8.00	20.00
Ship. Wt....lb.	2	2	5	..

†Enclosed. ‡Weatherproof.

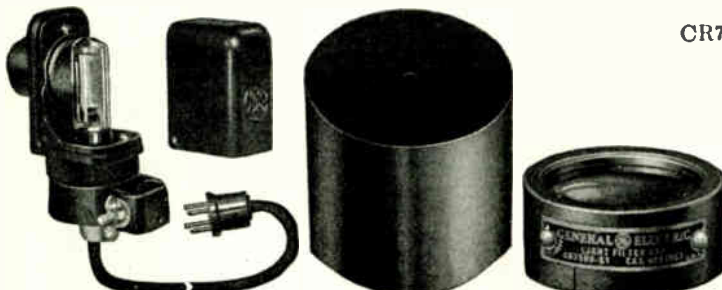
Accessories

Type CR7500-F1 Special Cover. This cover is provided with a light-collecting lens 3 inches in diameter, and a small aperture between the lens and the phototube. The light tunnel projects 3 inches from the front of the cover. The addition of this cover makes either Type CR7505-K2 or CR7505-L2 sensitive to an illumination of 1 foot-candle at the lens, and minimizes the effect of extraneous light.

Type CR7500-H1 Phototube Holder, Cable and Plug. If it is necessary to locate the phototube at some distance from Types CR7505-K2 or -L2 relays, this holder may be used. The dimensions of this unit are the same as those of the Type CR7500-G1A light source.

Type CR7500-K2 Infra-Red Filter Cap. This unit is a small cap which fits over the end of the lens barrel of the Type CR7500-G1A or -B2 light source to provide a practically invisible beam. The cap contains a filter glass which absorbs practically all of the visible energy radiated by the lamp, but permits the infra-red energy to pass. The photoelectric relays are sensitive to this infra-red energy.

Special Lens and Mask. This lens and mask is an accessory for use with the Type CR7500-H1 phototube holder (the type of phototube holder used with the Type CR7505-A100 and -G100) to minimize the effect of extraneous light and to make the unit directional. It consists of a lens barrel, a lens, and a mask or diaphragm located at the focal point of the lens. A small hole in the center of the mask permits light which enters approximately perpendicular to the plane of the lens to reach the phototube. For some special applications, the shape of the hole in the mask may be changed to permit the phototube to "see" only a definite area. The lens barrel fits into the phototube holder in place of the light tunnel normally employed.



Type CR7500-H1 Phototube Holder Special Lens and Mask Type CR7500-K2 Infra-Red Filter Cap

No.	Description	For Use with	Each
CR7500-F1	Special Cover	CR7505-K2, -L2	\$12.00
CR7500-H1	Phototube Holder, Cable and Plug. . .	CR7505-K, -K2, -L2.	12.00
CR7500-K2	Infra-Red Filter Cap	CR7500-G1A, -G3A, -B2.	4.00
.....	Lens and Mask 1 1/2-In. Diam.	CR7505-A100, -G100, CR7500-H1.	4.00
.....	3-In. Diam.	CR7505-A100, G100, CR7500-H1.	8.00
.....	Capacitor, 0.25 Mfd.	CR7505-K2, -L2, -M2	1.65
.....	0.50 Mfd.	CR7505-K2, -L2, -M2	2.20

‡The 3-inch lens and mask use the same optical system as Type CR7500-F1.

G-E Enameled Resistors

Type CR9006, Individual Unmounted Units
 Type CR9150, Units Mounted on a Base and with Perforated Cover
 Type CR9158, Units in Perforated Cage-Type Enclosure



Form QD

- FORM QL. Has stranded copper leads for making external connections.
- FORM QD. Has stranded copper leads and porcelain bushings to facilitate mounting.
- FORM QC. Designed for fuse clip mounting. Leads are connected to metal ferrules.
- FORM QS. Provided with screw base for mounting in lamp sockets.
- FORM QF. Provided with metal feet to which leads are connected and through which external connections are made.

*22-Watt Units

Form	Size	Ohms	Each	Form	Size	Ohms	Each
QL	K2673259	1-2000	\$.38	QC	K2673261	1-2000	\$.83
QD	K2673260	1-2000	.68	QF	K2673263	1-2000	.73

*57-Watt Units

QL	K2673264	1-1000	\$.51	QF	K2673268	1-1000	\$.86
QD	K2673265	1-1000	.81	QS	K2673280	1-1000	.86
QC	K2673266	1-1000	.96				

*85-Watt Units

QL	K2673244	1-1500	\$.69	QF	K2673269	1-1500	\$ 1.04
QD	K2673245	1-1500	.99	QS	K2673281	1-1500	1.04
QC	K2673246	1-1500	1.14				

*122-Watt Units

QL	K2673248	1.2-2000	\$.80	QF	K2673252	1.2-2000	\$ 1.15
QD	K2673249	1.2-2000	1.10	QS	K2673282	1.2-2000	1.15
QC	K2673250	1.2-2000	1.25				

*180-Watt Units

QL	K2673270	1.5-1500	\$ 1.08	QF	K2673274	1.5-1500	\$ 1.43
QD	K2673271	1.5-1500	1.38	QS	K2673283	1.5-1500	1.43
QC	K2673272	1.5-1500	1.53				

*This rating is based on a single unit mounted with free ventilation. The rating is reduced if ventilation is hindered by adjacent units or by enclosure.

- No. 2X930 Fuse Clip for 57-Watt Form QC Unit. each \$.15
- No. 2X931 Fuse Clip for 85, 122 and 180-Watt Form QC Units. each .30
- Two fuse clips are required for each unit.

Ratings

Std. Resistance Values in Ohms	MAXIMUM AMPERES					Std. Resistance Values in Ohms	MAXIMUM AMPERES				
	22-Watt Unit	57-Watt Unit	85-Watt Unit	122-Watt Unit	180-Watt Unit		22-Watt Unit	57-Watt Unit	85-Watt Unit	122-Watt Unit	180-Watt Unit
1	4.5					400	.22	.37	.45	.55	.67
3	2.6	4.3	5.1			500	.20	.33	.40	.49	.60
5	2.0	3.3	4.0	4.9	6.0	600	.18	.30	.36	.45	.55
10	1.4	2.3	2.7	3.5	4.3	700	.17	.28	.34	.41	.50
15	1.1	1.9	2.3	2.8	3.4	800	.16	.26	.32	.39	.47
20	1.0	1.6	2.0	2.4	3.0	900	.15	.25	.30	.37	.45
25	0.9	1.5	1.8	2.2	2.7	1000	.14	.23	.28	.35	.43
30	0.8	1.3	1.6	2.0	2.4	1200	.13	.21	.26	.32	.39
40	0.71	1.1	1.4	1.8	2.0	1400	.12	.20	.24	.29	.35
50	0.63	1.05	1.2	1.5	1.9	1600	.11	.185	.22	.27	.33
60	0.58	0.96	1.1	1.4	1.7	1800	.10	.175	.21	.26	.32
75	0.52	0.86	1.0	1.3	1.6	2000	.10	.16	.20	.24	.30
100	0.45	0.74	0.90	1.1	1.3	2500	.09	.15	.18	.22	.25
125	0.40	0.66	0.80	1.0	1.2	3000	.08	.13	.16	.20	.24
150	0.36	0.60	0.73	0.90	1.1	4000	.07	.12	.14	.17	.20
175	0.34	0.56	0.67	0.83	1.0	5000	.06	.11	.13	.15	.19
200	0.31	0.52	0.63	0.77	0.95	6000	.05	.10	.12	.14	.17
250	0.28	0.47	0.56	0.69	0.84	8000	.04	.09	.11	.13	.16
300	0.26	0.43	0.51	0.63	0.72	10000	.03	.08	.10	.12	.15

†Resistance of standard units varies from 90 to 110 per cent of these values. Prices for units of less resistance variation will be quoted on request.

Basic Net Prices Each

	22	57	85	122	180
†Continuous Watt Rating (Open)	.17	.5	.85	1.2	1.5
Minimum Special Ohms	1.	1.	1.	1.2	1.5
Minimum Standard Ohms	12000	40000	70000	100000	1000000
Maximum Standard Ohms					
Between Minimum Special Ohms and Minimum Standard Ohms	\$.52	\$.68	\$.93		
1.0 to 1000 Inclusive	.38	.51	.69		
1.2 to 1000 Inclusive				\$.80	
1.5 to 1000 Inclusive					\$ 1.08
\$1500	.38	.54	.69	.80	1.08
\$2000	.38	.54	.70	.80	1.09
\$2500	.40	.55	.72	.83	1.12
\$3000	.41	.57	.72	.83	1.12
\$3500	.41	.58	.73	.83	1.13
\$4000	.41	.58	.74	.86	1.14
\$4500	.41	.59	.75	.86	1.15
\$5000	.43	.60	.76	.86	1.17
\$6000	.44	.62	.77	.90	1.21
\$7000	.45	.63	.78	.91	1.24
\$8000	.47	.65	.80	.95	1.25
\$10000	.47	.68	.83	.99	1.26
\$12000	.50	.70	.85	1.01	1.28
\$15000		.72	.87	1.01	1.29
\$17000		.74	.89	1.01	1.29
\$20000		.77	.91	1.02	1.30
\$22500		.78	.94	1.06	1.30
\$25000		.80	.96	1.08	1.30
\$30000		.83	.98	1.08	1.30
\$40000		.85	1.00	1.13	1.31
\$50000			1.02	1.13	1.32
\$60000			1.05	1.19	1.38
\$70000			1.07	1.24	1.44
\$80000				1.33	1.50
\$90000				1.40	1.55
\$100000				1.47	1.61

†For intermediate watt ratings, use next larger listed rating.

§If intermediate ohm ratings are desired, use price of next higher listed rating.

NOTE.—The terms Maximum Standard Ohms and Mini-

mum Standard Ohms used in the table above, establish a definite range for selecting resistors that does not require extra care or supervision during manufacture. Resistors rated within this range should be selected where possible.

G-E Type CR9440 Lever-Type Limit Switches

No. CR9440-A2A

A small, compact, track type, spring-return limit switch for applications where it is desired to make or break control or indicating circuits at a fixed point in the travel of a part of the machine or mechanism. The switch has one normally closed and one normally open circuit. Double-break, self-alignment; silver contacts are used in both directions and open or close with a sliding motion. The movable tips and the stationary tip assemblies are easily replaceable.

The operating arm moves in a plane parallel

to base of switch. The plane of rotation of the operating arm can be moved nearer the base by reversing the arm about the shaft.

A precision mechanism on the operating arm permits accurate adjustment of the arm around the shaft. Moving the arm 24° from the normal position operates the switch mechanism; in addition, an overtravel of 48° is possible without damaging the switch.

The switch is enclosed in a die-cast box arranged for conduit connection. An aluminum cover is provided for the box. The removal of this cover gives easy access to the contacts and wiring studs. The operating shaft is grease-packed during assembly.

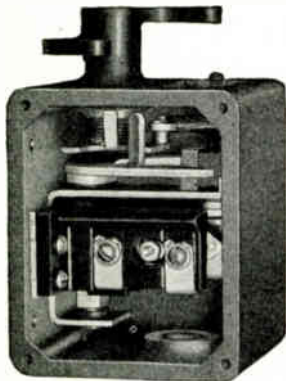
No. CR9440-A2B

This limit switch is similar to the No. CR9440-A2A, except that it is arranged for operation in clockwise direction.

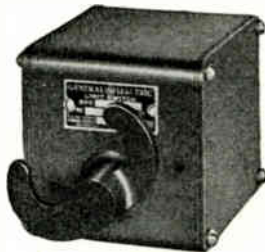
Mounting Bracket

A right-angle mounting bracket is available for use with either Nos. CR9440-A2A or CR9440-A2B limit switches.

No. CR9440-B1B



With Side Plate Removed



Closed

A heavy-duty, snap-action, single-pole, double throw switch with two independent circuits. This limit switch should be used whenever a small, compact, heavy-duty reversing limit switch is required to open or close a control circuit and where maintained accuracy of operation is of primary importance. Its field of application includes tapping machines, threading machines, grinder tables, welding machines, and other reciprocating machines where a reversing limit switch is applicable.

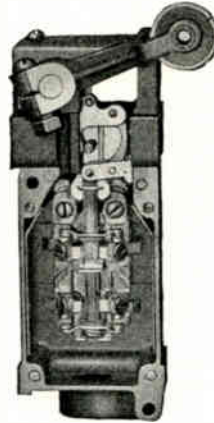
The contacts are double-break, and both stationary and movable tips are of fine silver to insure long life and dependable operation.

The movable contacts are held in either position by a small Alnico magnet acting on an iron yoke. When the yoke is broken away from the magnet face, by direct mechanical action of the operating lever, a sturdy spring snaps the contact assembly to the opposite position, where it is held in by the same Alnico magnet until the yoke is broken away in the opposite direction. For this reason, the operating point is determined entirely by the position of the operating

lever and is independent of tension in the spring. This construction insures maintained accuracy of operation in spite of changes in spring tension caused by aging under repeated operation.

Switch is enclosed in an oiltight steel enclosing case with two gasketed side plates and an opening in the rear for 1/2-inch conduit connection. With the side plates removed, the terminals are easily accessible and large working clearances make the switch easy to wire and install.

No. CR9440-D2



Roller-Lever Operated, Clockwise



Push-Rod Operated, Spring-Return Ratchet Operated, Spring-Return Operating Rod

A lever-operated, push-rod-operated or plunger-operated limit switch. All except the plunger-operated form have snap-action contacts. A variety of contact arrangements is available, which can be changed in the field from normally open to normally closed operation, or vice versa. The operating heads can be interchanged, or turned 180°. Holes are provided for mounting the switch on either its back or its side. These features allow maximum flexibility in application.

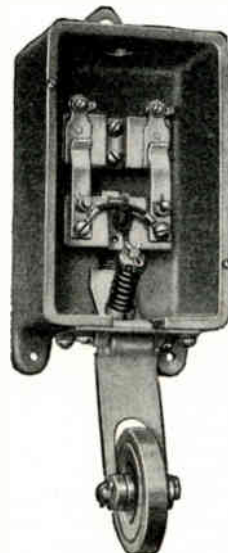
The switches are available in both open and enclosed forms. The open switches are particularly adapted to built-in applications where space is limited. Frames and plungers are constructed of molded Textolite. The contacts are solid silver and are designed to close with a rolling action. All switches are equipped with flag terminals to accommodate two wires on each terminal. The construction is extremely compact and flexible. The enclosed form has a die-cast case, and is provided with velumoid gaskets and grease seals at shaft journals to make the switch oilproof for machine-tool use.

Application extends to virtually any automatic equipment where a traverse motion must be converted into control of an electric circuit, particularly where the motion is slow and snap-action contacts are necessary to prevent burning of the contact tips.

No. CR9440-LS416

This hatchway-type limit switch is of lever construction, and is particularly for mounting in the hatch of an elevator. Although the switch is light and compact to facilitate mounting where space is limited, it is substantially built and is suitable for severe service. Only a small amount of pressure is needed to operate the roller lever. The Forms A, B and C have a rubber-tired roller to eliminate noise.

The switch is obtainable with either one open, one closed, one open and one closed (with overlapping or non-overlapping contacts), or two closed circuits. The various forms cannot be conveniently interchanged in the field.



With Cover Removed

G-E Type CR9440 Lever-Type Limit Switches

For Miscellaneous and Machine Tool Service—Track Type

Roller Lever, Spring Return Operation

CONTACT RATINGS, INDUCTIVE LOAD—

CARRYING AND BRAKING, MAXIMUM AMPERES

Description	Form and Type of Switch	*Each	No. of Circuits			D.C. Circuits				A.C. Circuits				Approx. Ship. Wt. Lb.
			Norm. Open	Devel. Closed	Opponent Fig.	115 Volts	230 Volts	550 Volts	110 Volts	220 Volts	440 Volts	550 Volts		
Counterclockwise Rotation	CR9440-A2A	\$6.00	†1	1	1	2.5	.8	.25	30	15	7	5	3	
Clockwise Rotation	CR9440-A2B	6.00	†1	1	1	2.5	.8	.25	30	15	7	5	3	
Snap-Action Silver Contacts; Oilproof Case	C. W. Rotation	CR9440-D2AA	8.00	2	2	1.5	.5	.15	30	15	7	5	3	
		CR9440-D2BA	8.00	2	3	1.5	.5	.15	30	15	7	5	3	
		CR9440-D2CA	8.00	†1	1	1	1.5	.5	.15	30	15	7	5	3
		CR9440-D2DA	8.00	†1	1	1	1.5	.5	.15	30	15	7	5	3
	C. C. W. Rotation	CR9440-D2AB	8.00	2	2	1.5	.5	.15	30	15	7	5	3	
		CR9440-D2BB	8.00	2	3	1.5	.5	.15	30	15	7	5	3	
		CR9440-D2CB	8.00	†1	1	1	1.5	.5	.15	30	15	7	5	3
		CR9440-D2DB	8.00	†1	1	1	1.5	.5	.15	30	15	7	5	3
Reversing Motion, Maintained Contact														
Alnico Snap-Action; Oilproof Case; Forked Lever (Offset)	CR9440-B1B	\$13.00	†1	1	1	4	1.2	.4	30	15	7	5	5	
	Plunger Operated													
Silver Contacts; Oilproof Spring Return	CR9440-D2AF	\$5.00	2	2	2	1.5	.5	.15	30	15	7	5	3	
	CR9440-D2BF	5.00	2	2	3	1.5	.5	.15	30	15	7	5	3	
	CR9440-D2CF	5.00	†1	1	1	1.5	.5	.15	30	15	7	5	3	
	CR9440-D2DF	5.00	†1	1	1	1.5	.5	.15	30	15	7	5	3	
Push-Rod Operated														
Snap-Action Silver Contacts; Oilproof Case	Maintained Contact	CR9440-D2AC	\$8.00	2	2	2	1.5	.5	.15	30	15	7	5	3
		CR9440-D2BC	8.00	2	3	1.5	.5	.15	30	15	7	5	3	
		CR9440-D2CC	8.00	†1	1	1	1.5	.5	.15	30	15	7	5	3
		CR9440-D2DC	8.00	†1	1	1	1.5	.5	.15	30	15	7	5	3
	Spring Return	CR9440-D2AD	8.00	2	2	1.5	.5	.15	30	15	7	5	3	
		CR9440-D2BD	8.00	2	3	1.5	.5	.15	30	15	7	5	3	
		CR9440-D2CD	8.00	†1	1	1	1.5	.5	.15	30	15	7	5	3
		CR9440-D2DD	8.00	†1	1	1	1.5	.5	.15	30	15	7	5	3

Hatchway, Elevator Service

Roller Lever, Spring Return

3-Inch Rubber-Tired Roller (End)	CR9440-LS416A	\$11.00	1	5	5	1.5	.5	50	20	8	6	25
	CR9440-LS416B	12.00	2	3	5	1.5	.5	50	20	8	6	25
	CR9440-LS416C	11.00	1	6	5	1.5	.5	50	20	8	6	25
3-Inch Textolite Roller(End)	CR9440-LS416E	12.00	2	3	5	1.5	.5	50	20	8	6	25
	CR9440-LS416AA	16.00	†1	1	5	1.5	.5	50	20	8	6	25
	CR9440-LS416AB	16.00	†1	1	5	1.5	.5	50	20	8	6	25

*Price of switch includes one of the following operating levers:

No. 2879404G5 roller lever with 3-inch Textolite roller.

No. 2804448G5 roller lever with 1-inch steel roller.

No. 894946G1 straight lever.

†Non-overlapping contacts; one circuit is broken before the other is closed.

‡Overlapping contacts; one circuit is broken after the other is closed.



Fig. 1



Fig. 2



Fig. 3



Fig. 5



Fig. 6

G-E Type CR9441 Direct-Connected, Rotating-Type Limit Switches

No. CR9441-LS424. This geared-type, general-purpose limit switch has two cam-operated switch elements which make it suitable for limiting travel in two directions.

No. CR9441-LS80. This is a direct-connected, traveling-nut type limit switch built in a cast-iron, water-tight case with non-corrodible fittings. The nut traveling along the threaded shaft is provided with adjustable studs which operate the contacts at each end of travel. This switch is for valve or similar service.



Fig. 1



Fig. 2



Fig. 5



Fig. 6



Fig. 7

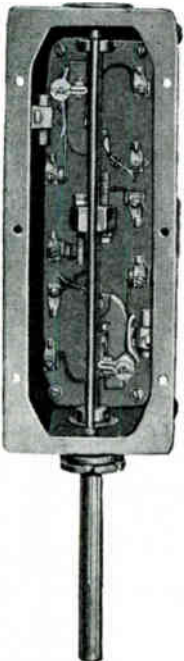


Fig. 8

For Miscellaneous and Machine Tool Service—Cam-Operated, Reversing

Description	Form and Type of Switch	Each	TURNS OF DRIVING SHAFT			No. of Circuits	CONTACT RATINGS, INDUCTIVE LOAD—				Approx. Ship. Wt. Lb.					
			Min.	Max.	Over-travel		CARRYING AND BRAKING, MAX. AMP.									
							D.C. Circuits				A.C. Circuits					
							115 Volts	230 Volts	110 Volts	220 Volts	440 Volts	550 Volts				
General Purpose	CR9441-C2B	\$14.00	30	5	1	2	N.C.	1	\$1.5	\$.5	30	15	7	5	10	
	CR9441-C2A	14.00	30	5	1	2	N.O.	2	\$1.5	\$.5	30	15	7	5	10	
	Weatherproof	CR9441-LS424AN	32.00	30	5	1	2	N.C.	1	\$.2	\$.1	20	10	4	3	15
For Valve Control, Etc.—Traveling Nut, Reversing																
Weatherproof in Cast Iron Case	CR9441-LS80K	\$54.00	35	5	2	2	8	1	.4	.20	10	4	3	40		
	CR9441-LS80J	54.00	60	30	2	2	8	1	.4	.20	10	4	40			
	CR9441-LS80H	54.00	75	54	2	2	7	1	.4	.20	10	4	40			
	CR9441-LS80F	62.00	60	30	2	4	6	1	.4	.20	10	4	40			
CR9441-LS80E	57.00	75	54	2	4	5	1	.4	.20	10	4	40				

§When using on d.c., a .5-microfarad capacitor is required across the coil of the controlled device.



With Cover Removed

G-E Type CR9504 Thrustors

Provides Smooth Straight-Line Thrust From Electric Motor Drive



This is a self-contained hydraulic device which exerts a smooth, straight-line thrust (50 to 3200 pounds maximum thrust) in one direction throughout a definite distance (2 and 16-inch maximum stroke). The return stroke is effected by gravity or a spring.

The device can repeat this cycle of operation indefinitely at a rate of 10 to 30 times per minute depending on the size of unit. It is driven by a built-in fractional h.p. motor and therefore the power consumption is small.

Type CR9504 Thrustor performs services similar to those accomplished by air cylinders and large a.c. and d.c. magnets and solenoids.

Order by CR number and form giving voltage, frequency and phase.

Type CR9504-L—50 Pounds Maximum—2-Inch Stroke

Volts	Phase	Cycle	*Running Current Amperes	Each
110	3	60 & 50	.92	\$79.00
220	3	60 & 50	.43	79.00
440	3	60 & 50	.23	79.00
†110	1	60, 50 & 25	1.8	65.00
‡220	1	60, 50 & 25	.9	65.00

‡Type CR9504-V—100 Pounds Maximum—2-Inch Stroke

110	3	60 & 50	.74	\$135.00
220/440	3	60 & 50	.37/.18	135.00
550	3	60 & 50	.15	135.00

‡Type CR9504-N—200 Pounds Maximum—4-Inch Stroke

110	3	60 & 50	1.76	\$150.00
220/440	3	60 & 50	.88/.44	150.00
550	3	60 & 50	.35	150.00

110 1 60 3.0 150.00

220 1 60 1.5 150.00

‡Type CR9504-T—400 Pounds Maximum—4-Inch Stroke

110	3	60 & 50	1.88	\$170.00
220/440	3	60 & 50	.94/.47	170.00
550	3	60 & 50	.38	170.00

110 1 60 3.8 170.00

220 1 60 1.9 170.00

‡Type CR9504-M—600 Pounds Maximum—6-Inch Stroke

110	3	60 & 50	2.8	\$200.00
220/440	3	60 & 50	1.4/.7	200.00
550	3	60 & 50	.56	200.00

110 1 60 5.0 200.00

220 1 60 2.5 200.00

*Inrush current for a.c. motors is approximately 5 times running current.

†Have Universal motors with limited brush life of 400 hours. These thrustors may be used for 50-pound d.c. application also.

‡Information on single phase d.c. and 25-cycle forms on application.

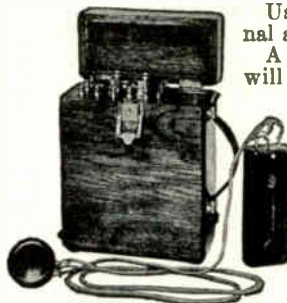
Type L Matthews Woodpecker Telefaults

Used on telephone, telegraph, signal and certain other cables.

A self-contained instrument that will locate water, shorts of all kinds, crosses, grounds, split pairs—every kind of cable trouble except opens.

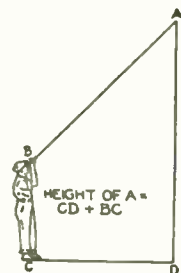
Uses one dry cell battery. Maximum voltage, under 5. No batteries furnished.

Cannot be confused with other inductive noises—has a tone like a woodpecker on a pole.



Type L, Complete with Coil, Cord, and Receiver, Weight 9 Pounds.....each \$60.00
Extra Exploring Coils.....each 15.00
Extra Receivers.....each 6.00

Type CW Matthews Teleheights

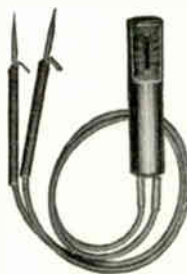


Used by central stations, telephone and telegraph companies to secure height of poles, trees, etc. Used for figuring cubical contents of buildings, clearance of bridges, highlines, etc.

To find height A, stand away from A until bubble and line cross each other. Then measure off distance CD and add distance CB. The sum will equal DA.

Furnished with leather carrying case. Length, 5 inches. Type CW.....each \$11.00

No. 5000 Square D Voltage Testers



This voltage tester operates on a.c. or d.c., indicating the voltage of either.

It is used for 110 to 600 volts.

Tester does not require lamps; easily carried in pocket.

Sharp points on end of long rubber covered leads permits piercing insulation without damaging it.

Insulation is armored at entrance to case to prevent breakage.

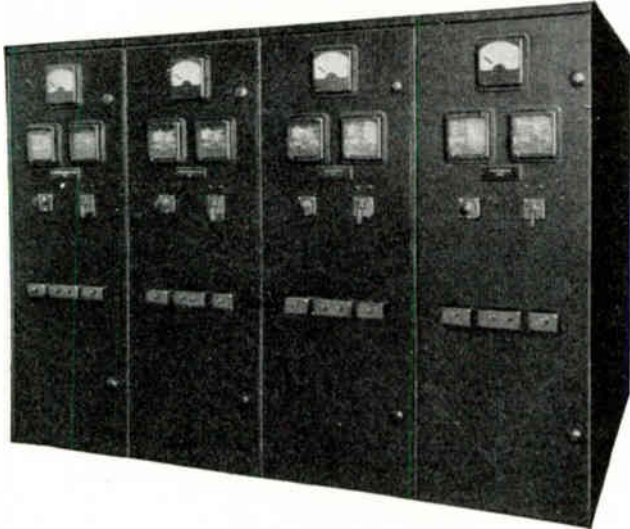
No. 5000 Voltage Tester.....each \$12.80
No. 5002 Voltage Tester Case.....each 1.30



G-E Switchgear

G-E manufactures complete lines of Switchgear for all systems involving the generation and distribution of electric power.

These lines comprise: switchgear for primary circuits (above 600 volts) including metal-clad switchgear, power circuit breakers, disconnecting switches, and relays; switchgear for secondary circuits (600 volts and below) including drawout air-circuit breaker switchboards, small plant switchboards, air circuit breakers, miscellaneous switches, switchboard fittings, and accessories.

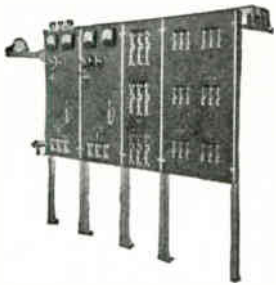


G-E Type MC-9 Midget Metal-Clad Switchgear, 5000 Volts

Metal-Clad Switchgear

This comprises a line of moderate and heavy duty switching equipment in ratings of 5 and 15 kilovolts, 600 to 2000 amperes, with breakers of interrupting ratings from 25,000 to 500,000 kilovolt-amperes, for power plants, industrial plants and public buildings.

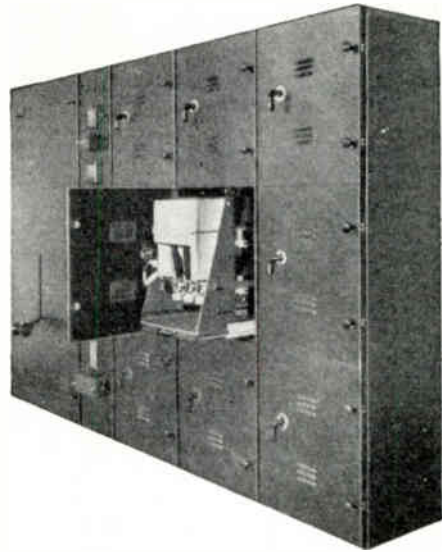
The equipment is compactly designed, with all component parts of G-E manufacture, of the type best suited to their function and properly coordinated, with liberal factors of safety to withstand severe service. The neat appearance and harmonious finish make a most attractive installation.



Generating Station Switchboard, 240 Volts A.C., with Front of Board Knife Switches and Fuses

Drawout Air Circuit Breaker Switchboards

This type of switchgear comprises a line of low-voltage equipment in ratings of 250 to 600 volts a.c., 250 volts d.c., to 5000 amperes (and higher), with breakers of interrupting ratings to 80,000 amperes. Each circuit breaker is mounted on a carriage that is easily drawn out to permit removal of the breaker. Mechanical interlocks prevent withdrawal unless the breaker is open, and self-coupling disconnecting devices remove all sources of potential from the withdrawn breaker. Buses and connections are enclosed, and this type of equipment offers all the advantages of safety to personnel, ease of maintenance, reliability of service, and compactness of design provided by high-voltage metal-clad equipment.



G-E Drawout Air Circuit Breaker Switchboard, 600 Volts A.C. (One Unit Withdrawn)

Packing and Shipment

An outstanding feature of G-E metal-clad and metal-enclosed switchgear is the shipped assembled construction. The structures are factory built and delivered completely assembled. This means not only a reduction in installation, maintenance, and engineering costs, but also a saving in floor space. The number of units that can be shipped assembled together is limited only by transportation and handling facilities.

Small Plant Switchboards

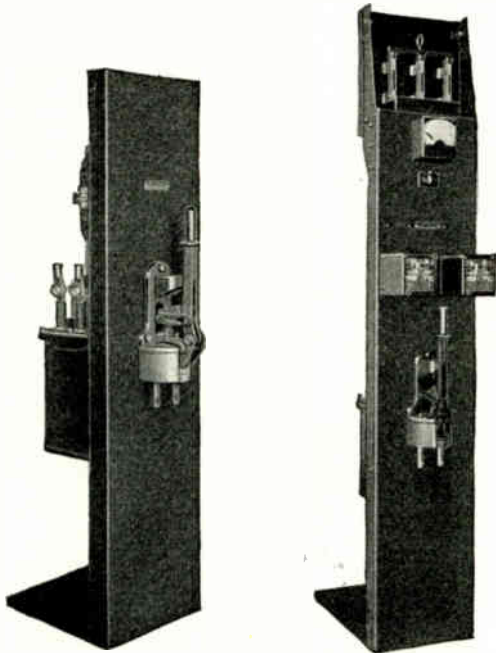
Where the importance of the installation does not justify the expense of metal-enclosed drawout air circuit breaker switchgear a line of inexpensive switchboard panels is available.

These are equipped with knife switches and fuses, with air circuit breakers, or with oil circuit breakers. Panels of live-front (as illustrated) or of dead-front construction are available.

All equipment has the same careful design as the most expensive equipment for adequate capacity and protective ability, with instruments, meters, relays, instrument transformers, breakers, etc., of high quality and accuracy.

Consult the Nearest Graybar Sales Office for Complete Information, Prices and Specifications

**G-E Standard Switchgear Equipment
With Manually Operated Oil Circuit Breakers**
3-Phase—3-Wire—25 or 60-Cycle—5000 Volts



Standard 64-Inch Self-Supporting Oil Circuit Breaker Panel with Instantaneous Trip Coils on Breaker

Standard 76-Inch Self-Supporting Oil Circuit Breaker Panel with Ammeter Switch, *Overcurrent Relays, and *600-Volt Disconnecting Switch

This standard equipment is for use in isolated industrial installations, or where voltages and currents are within the limits specified and no bus is required.

The panel is made of steel, with a web on each vertical edge, with self-supporting steel plates welded to the sides with provision for bolting to the floor. Panel has a dull black marine finish.

Each 64-inch equipment includes:

One steel panel with floor braces.

One oil circuit breaker, three-pole single throw, automatic trip, mounted directly back of panel. With two-coil, time-delay, secondary-trip, manual operating mechanism.

Two tripping current transformers.

Bare copper connections.

Small wire and terminal block.

One cardholder.

Each 76-inch equipment includes the same, plus one Type AD-6 Ammeter, with suitable scale.

Equipment is shipped completely assembled and wired to the terminal blocks, and is ready for installation when received.

When ordering, describe equipment, specify circuit voltage and frequency, and specify current-transformer rating, or circuit rating, in amperes.

THREE-POLE BREAKER		Interrupting Rating Kva	WITH 64-INCH PANEL		WITH 76-INCH PANEL		Panel Width In.	Max. Depth In.
Type	Amp.		Each	Wt. Lb.	Each	Wt. Lb.		
FK- 33	200	15,000	\$157.00	290	\$195.00	355	16	24
FK- 33	400	15,000	177.00	300	215.00	365	16	24
FK- 42	400	25,000	229.00	360	267.00	425	16	30
FK- 42	600	25,000	260.00	380	298.00	445	16	30
FK- 42	800	25,000	287.00	430	325.00	495	16	30
FK-143	600	50,000	482.00	760	522.00	800	24	40
FK-143	1200	50,000	832.00	900	872.00	940	24	40

*Not standard equipment. For optional additions and omissions, write for complete information.

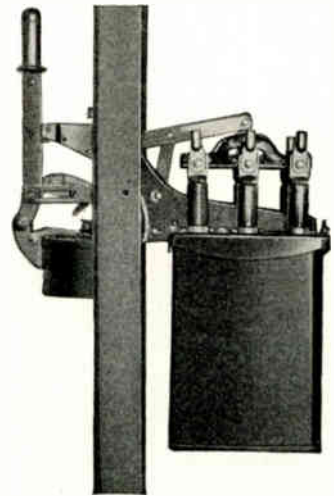
†For equipment with double or four-pole breakers, refer to nearest Graybar office for data.

Type FK-33 G-E Oil Circuit Breakers

Manually or Electrically Operated

Non-Automatic Trip

5000 Volts—200 and 400 Amperes—15,000 Kva.



Type FK-33 Oil Circuit Breaker Mounted Directly on Back of Panel

Type FK-33 Oil Circuit Breaker is recommended for use on a.c. circuits in small and isolated plants, and for other duties when a breaker of moderate rating is desired.

This breaker is of the single-tank type—all poles are in one tank. It is available in double, triple, or four-pole units, single or double throw.

Breaker may be mounted directly on back of panel, on a framework, wall, or any flat surface remote from panel. Suitable for manual, or solenoid operation.

Material included: Type FK-33 breaker, Type HA-2 operating lever, mounting details for breaker element, bell cranks with remote control, terminals and nuts, necessary oil.

For solenoid-operated breaker, price also includes solenoid control relay, a potential trip coil, a terminal board, and a four-stage rotary auxiliary switch.

Double, Triple or Four-Pole Breakers

Manually Operated, for Mounting Directly on Back of Panel

Throw	Amp.	Double-Pole		Triple-Pole		Four-Pole	
		Each	Oil Lb. per Incl.	Each	Oil Lb. per Incl.	Each	Oil Lb. per Incl.
Single	200	\$68.00	4 90	\$80.00	4 100	\$120.00	5 120
	400	85.00	4 100	100.00	4 110	150.00	5 130
Double	200	136.00	7 180	160.00	7 200	240.00	9 250
	400	170.00	7 190	200.00	7 210	300.00	9 260

Manually Operated, for Mounting on Panel Frame, 5 Inches Back of Panel

Single	200	\$78.00	4 100	\$90.00	4 120	\$130.00	5 140
	400	95.00	4 110	110.00	4 130	160.00	5 150
Double	200	156.00	7 200	180.00	7 220	260.00	9 270
	400	190.00	7 210	220.00	7 230	320.00	9 280

Manually Operated, for Mounting Remote from Panel on Framework, on Flat Surface, or in Masonry Cell

Single	200	\$98.00	4 170	\$110.00	4 180	\$150.00	5 200
	400	115.00	4 180	130.00	4 190	180.00	5 260
Double	200	196.00	7 330	220.00	7 350	300.00	9 400
	400	230.00	7 350	260.00	7 360	360.00	9 410

†D.C. Solenoid-Operated, Breaker and Solenoid for Mounting Back-to-Back on Framework or with Breakers in Cell

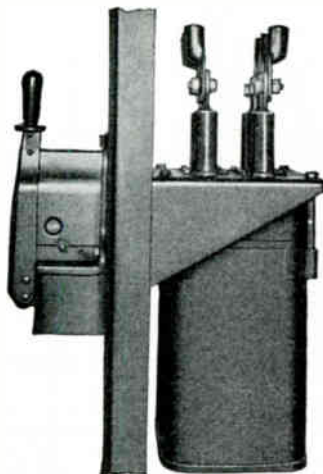
Single	200	\$173.00	4 333	\$185.00	4 352	\$225.00	5 380
	400	190.00	4 352	205.00	4 368	255.00	5 418

†For a.c. rectifier solenoid operated mechanism, add \$65.

Type FK-142 G-E Oil Circuit Breakers Manually or Electrically Operated

Non-Automatic Trip

7500 Volts, 400 and 600 Amperes; 5000 Volts, 800 Amperes
25,000 Kva.



Type FK-142 Manually Operated Oil-Blast Circuit Breaker Mounted on Panel

Type FK-142 Oil-Blast Circuit Breaker is recommended for use on a.c. circuits where a sturdy, compact breaker with interrupting rating up to 25,000 kva. is required. It is especially applicable in industrial plants, and in stations where only minimum space is available.

This breaker is available in double, triple, and four-pole, single-throw units with all poles in a single rectangular steel tank. All units are provided with oil-blast contacts, including silver-to-silver main contacts and heavy butt-type arcing contacts; Herkolite bushings; and internal mechanisms.

These features assure this breaker's ability to give thoroughly reliable and dependable service with long life and low maintenance.

Breaker may be mounted directly on back of panel, 5 inches back, on a framework, wall, or any flat surface remote from panel; or in cubicles, switchhouses, or metal-clad switchgear.

Price includes: oil, operating mechanisms, terminal connectors, and fittings for mounting breaker.

For solenoid-operated breaker, price also includes solenoid control relay, a potential trip coil, terminal board, and a four-stage auxiliary switch.

***Manually Operated, for Mounting Directly on Back of Panel**

Amp.	Volts	INTERRUPTING RATING			Approx. Ship. Wt. Lb. Gal. Incl. of Oil	Rms. Rtg. Kva.	TOTAL RATING		SHORT TIME RATING		
		Double-Pole Each	Triple-Pole Each	Four-Pole Each			At Rated	Maxi. mum	One Second	Five Seconds	
400	7500	\$129.00	\$152.00	\$228.00	190	6	25000	2000	20000	20000	20000
600	7500	147.00	173.00	260.00	210	6	25000	2000	20000	20000	20000
800	5000	170.00	200.00	300.00	260	6	25000	3000	20000	20000	20000

Manually Operated, for Mounting on Panel Frame, 5 Inches Back of Panel

400	7500	\$139.00	\$162.00	\$238.00	200	6	25000	2000	20000	20000	20000
600	7500	157.00	183.00	270.00	220	6	25000	2000	20000	20000	20000
800	5000	180.00	210.00	310.00	270	6	25000	3000	20000	20000	20000

Manually Operated, for Remote Pipe Framework or Wall Mounting

400	7500	\$159.00	\$182.00	\$258.00	325	6	25000	2000	20000	20000	20000
600	7500	177.00	203.00	290.00	345	6	25000	2000	20000	20000	20000
800	5000	200.00	230.00	330.00	395	6	25000	3000	20000	20000	20000

†D. C. Solenoid-Operated, Breaker and Solenoid for Mounting Back-to-Back on Pipe Framework

400	7500	\$244.00	\$267.00	\$343.00	395	6	25000	2000	20000	20000	20000
600	7500	262.00	288.00	375.00	415	6	25000	2000	20000	20000	20000
800	5000	285.00	315.00	415.00	465	6	25000	3000	20000	20000	20000

*G-E does not recommend the installation of apparatus on the panel or switchboard for voltages higher than 5000 volts. For such voltages, remote control or metal-enclosed switchgear is recommended.

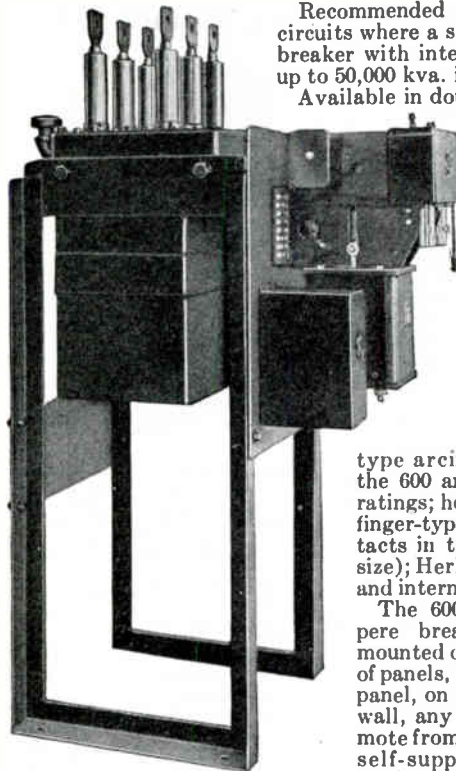
†For a.c. rectifier solenoid operated mechanism, add \$65.

To obtain the price of double-throw breakers, double the prices of the single-throw breakers.

Type FK-143 G-E Oil Circuit Breakers Manually or Electrically Operated

Non-Automatic Trip

15,000 Volts, 600 Amperes; 7500 Volts, 1200 Amperes;
5000 Volts, 2000 Amperes—50,000 Kva.



Type FK-143, 15,000-Volt, 600-Ampere Oil Circuit Breaker Mounted on Self-Supporting Steel Framework

Recommended for use on a.c. circuits where a sturdy, compact breaker with interrupting rating up to 50,000 kva. is required.

Available in double and triple-pole, single-throw units with all poles in a single rectangular, welded steel-plate tank. All units have oil-blast contacts, including silver-to-silver main contacts and heavy butt-

type arcing contacts (in the 600 and 1200-ampere ratings; heavy wedge and finger-type arcing contacts in the 2000-ampere size); Herkolite bushings; and internal mechanisms.

The 600 and 1200-ampere breakers may be mounted directly on back of panels, 5 inches back of panel, on a framework or wall, any flat surface remote from the panel, on a self-supporting framework, or in cubicles, switchhouses, or metal-clad switchgear. The

2000-ampere breaker may be mounted on a self-supporting framework immediately back of the panel or remote from the panel, or in cubicles, switchhouses or metal-clad switchgear.

Price includes: oil, operating lever, mounting details, bell cranks with remote control, and terminals.

For remote manually operated breaker, horizontal and vertical hangers and bell cranks are also included.

For solenoid-operated breaker, solenoids with connecting links, solenoid control relay, potential trip coil, terminal board, and a four-stage auxiliary switch are also included.

Manually Operated, for Mounting Directly on Back of Panel

Amp.	Volts	INTERRUPTING RATING			Approx. Ship. Wt. Lb. Gal. Incl. of Oil	Rms. Rtg. Kva.	TOTAL RATING		SHORT TIME RATING		
		Double-Pole Each	Triple-Pole Each	Four-Pole Each			At Rated	Maxi. mum	One Second	Five Seconds	
600	15000	\$332.00	515	\$390.00	550	8	50000	2000	20000	25000	25000
1200	7500	560.00	565	660.00	630	8	50000	4000	20000	35000	35000

Manually Operated, for Mounting on Panel Frame, 5 Inches Back of Panel

600	15000	\$342.00	525	\$400.00	560	8	50000	2000	20000	25000	25000
1200	7500	570.00	575	670.00	640	8	50000	4000	20000	35000	35000

Manually Operated, Mounted on Self-Supporting Steel Framework

*2000	5000	\$1215.00	920	\$1430.00	985	16	50000	6000	20000	40000	40000
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Manually Operated, for Remote Pipe Framework or Wall Mounting

600	15000	\$362.00	625	\$420.00	660	8	50000	2000	20000	25000	25000
1200	7500	590.00	675	690.00	740	8	50000	4000	20000	35000	35000

***2000 D.C. Solenoid-Operated, Breaker and Solenoid for Mounting Back-to-Back on Steel Framework**

† 600	15000	\$452.00	660	\$510.00	695	8	50000	2000	20000	25000	25000
1200	7500	680.00	710	780.00	775	8	50000	4000	20000	35000	35000
2000	5000	1285.00	1080	1500.00	1150	16	50000	6000	20000	40000	40000

*The price of manually operated 2000-ampere breakers includes a self-supporting steel framework. For the 600 and 1200-ampere, manually operated and all solenoid-operated breakers, this framework must be ordered separately.

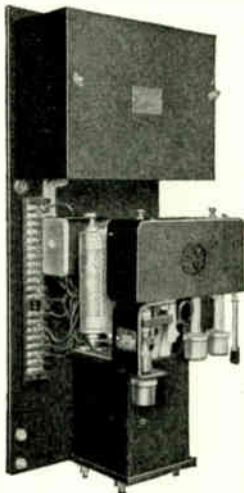
†For A.C. rectifier solenoid operated mechanism, add \$75.00 net.

To obtain the price of double-throw breakers, double the prices of the single-throw breakers.

Accessories for G-E Oil Circuit Breakers
Coils for Automatic Tripping



Manual Operating Lever with Two Time-Delay Current Trip Coils



Solenoid Operating Mechanism with Two Time-Delay Current Coils, One Potential Trip Coil, Time-Delay, Type PG-5 Undervoltage Device and Copper-Oxide Rectifier

Prices of oil circuit breakers, as listed, do not include trip coils, but provision is included for current transformer coils for use directly in the secondaries of current transformers, or in connection with relays. One, two, or three coils are required, depending on the number of poles of the breaker and the type of protection desired.

Instantaneous and inverse-time current coils, and instantaneous potential coils are available.

In ordering, full requirements should be specified.

No. of Coils	Manual Operating Mechanism		Solenoid Operating Mechanism	
	Instantaneous Each	Inverse-Time Each	Instantaneous Each	Inverse-Time Each
1	\$6.00	\$11.00	\$31.00	\$36.00
2	12.00	22.00	37.00	47.00
3	18.00	33.00	43.00	58.00

Undervoltage Devices

Operates to trip the breaker when the voltage falls to approximately one-half of normal (or lower). One is required per breaker.

Instantaneous devices are available for 115 to 575 volts; inverse-time for 115 volts only. For higher voltages potential transformers must be used.

Instantaneous, for Manual Operating Mechanism. ea. \$32.00

*Instantaneous, for Solenoid Operating Mechanism. ea. 32.00

Inverse-Time, for Manual Operating Mechanism. ea. 63.00

*Inverse-Time, for Solenoid Operating Mechanism. ea. 63.00

Orders must state type of solenoid for which device is required and also state whether the circuit voltage is 125 or 250 volts d.c.

In ordering a supply give nameplate data of mechanism and specify if current trip coils (give number) are now on mechanism.

*If current trip coils are not on mechanism, add \$25.

Steel Panels for Mounting Small Oil Circuit Breakers

Use of these steel panels makes it possible to order an oil circuit breaker and operating mechanism completely assembled on a self-supporting steel panel.

Type of Breaker	Each	Throw	Height Inches	Width Inches	Approx. Ship. Weight Pounds
FK-33	\$27.00	Single	64	16	160
FK-33	38.00	Double	64	24	200
FK-142	32.00	Single	64	16	160
†FK-143	38.00	Single	64	24	200

†Not available for 2000-ampere breaker.

Prices include self-supporting steel panel and mounting of operating lever and breaker for direct operation.

Oil circuit breakers and undervoltage devices must be ordered and priced separately. Add \$2.00, for drilling and mounting undervoltage device.

Type AF-1 G-E Air Circuit Breakers
Manually Operated—Quick Make—Quick Break
Trip Free



Type AF-1 600-Volt, 225-Ampere, Triple-Pole Air Circuit Breaker

Type AF-1 Air Circuit Breaker is recommended for use in panelboards and other load centers as a modern substitute for fuses and fused switches, in service entrances instead of fused switches, in dead-front switchboards, and also for individual circuits and appliances. The operation is automatic on either overload or short circuit. Power is restored by a slight movement of the handle.

Available in single, double and triple-pole in the 50-ampere frame size; and double and triple-pole in all other sizes.

Breakers of the 50-ampere frame size are equipped with thermal over-current trip, while the larger sizes also have the thermal trip for moderate overcurrents, plus an instantaneous magnetic trip for short circuits.

The silver-alloy, self-aligning contacts are of the non-welding pressure type. These produce a firm, positive contact, operating at a very low temperature. The contacts are contained in a small, closed, cylindrical metal chamber. As the contacts part, an arc is drawn and gases are formed which set up a comparatively high pressure. This so increases the resistance of the arc path that the arc is interrupted very quickly.

Breakers are furnished front-connected. Breakers may be made back-connected by the addition of studs.

50-Ampere Frame—5000 Amperes Interrupting Rating

Amp.	*125 Volts, A.C. or D.C.		230 Volts, A.C.		*250 Volts, D.C.		600 Volts, A.C.		†Studs for Back Connection
	Ship. Wt.	Each	Ship. Wt.	Each	Ship. Wt.	Each	Ship. Wt.	Each	
15-25	\$4.75	1.5	\$10.00	3	\$15.00	4			\$5.00
35-50	5.75	1.5	12.00	3	18.00	4			.50

100-Ampere Frame—5000 Amperes Interrupting Rating

50-100	\$33.00	12	\$43.00	15	\$1.00
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225-Ampere Frame—10,000 Amperes Interrupting Rating

70-225	\$91.00	35	\$111.00	40	\$108.00	35	\$135.00	40	\$1.25
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600-Ampere Frame—10,000 Amperes Interrupting Rating

225	\$233.00	50	\$296.00	60	\$250.00	50	\$320.00	60	\$3.35
250-400	233.00	50	296.00	60	250.00	50	320.00	60	†4.15
450-600	269.00	50	343.00	60	286.00	50	367.00	60	†4.75

Standard ratings: 15, 20, 25, 35, 50, 70, 90, 100, 125, 150, 175, 200, 225, 250, 275, 300, 325, 350, 400, 450, 500, 550, and 600 amperes.

*Type AF-1 d.c. ratings are for non-inductive circuits only.

†Price for stud covers one stud only and must be multiplied by the number required for each breaker: two for single-pole, six for triple-pole, etc.

‡Studs are 5½, 8 and 10½ inches long. Available at slight extra charge.

Type JY-285 G-E Tripping Current Transformers

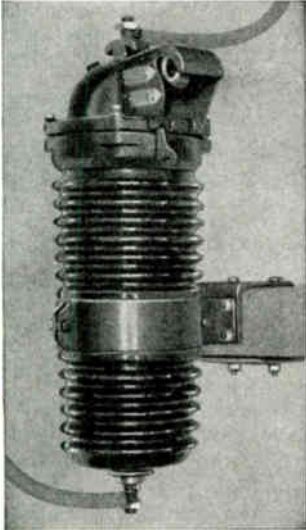
This tripping transformer is for use in connection with secondary current automatic trip coils of oil circuit breakers. It is insulated for 5000 volts and may be used with any of the 4 and 5-ampere standard current trip coils for manually and solenoid-operated breakers, or with relays.

Primary Rating Amperes	Each	Ratio	THERMAL LIMITS AMPERES		Approx. Ship. Wt. Lb.
			One Second	Five Seconds	
5	\$13.00	1:1	180	80	16
10	13.00	2:1	350	160	16
15	13.00	3:1	570	255	16
20	13.00	4:1	900	400	16
25	13.00	5:1	925	425	16
30	13.00	6:1	1140	510	16
40	13.00	8:1	1600	720	16
50	13.00	10:1	1800	800	16
60	13.00	15:1	2760	1260	16
75	13.00	...	2625	1125	16
100	13.00	20:1	3600	1600	16
120	13.00	24:1	4800	2400	18
150	13.50	30:1	6900	3000	18
200	14.00	40:1	7600	3600	18
250	14.50	50:1	9500	4250	19
300	15.00	60:1	16200	7200	19
400	16.50	80:1	18800	8400	20
500	17.60	100:1	55000	24000	20
600	19.00	120:1	54000	24000	20
800	19.00	160:1	53600	24000	20

*Mechanical limits: 100 times primary rating, except that the 500, 600 and 800-ampere ratings are bar-type and have no mechanical limits.

Type FP-119 G-E Outdoor Oil Circuit Reclosers

Single-Pole—Automatic—Self-Resetting
For Pole Mounting



Type FP-119 Crossarm-Mounted Oil-Circuit Recloser

Type FP-119 Recloser is normally closed and connected in the line. When a fault occurs, the operating coil opens the contacts. After three seconds have elapsed, the device recloses the circuit. In the case of long-duration faults, this device recloses the circuit three times and, if the fault is still on the line after the last reclosure, it will lock open. If after one, two, or three reclosures, the fault has cleared, the mechanism of the recloser returns to its normal position.

The Type FP-119 Recloser can be used on any single-phase circuit, the normal voltage of which does not exceed 15 kv. It can also be used on three-phase lines where the maximum potential, which may occur between lines and be

applied across the contacts of any one recloser, does not exceed 15,000 volts.

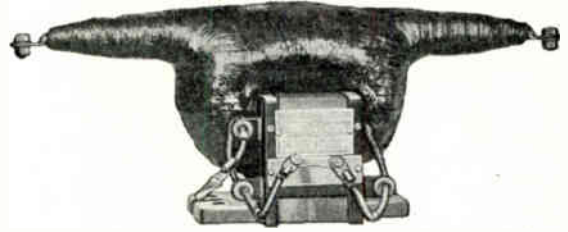
Price includes: recloser, operation counter, oil gage, position indicator, fill plug, drain plug, provision for connecting leads in sizes up to A.W.G. No. 1 wire, and necessary straps and bolts for mounting on crossarm or directly on pole. When ordering, give ampere rating and mounting desired (for crossarm or mounting directly on pole).

RATING 25 to 60 Cycles Volts	Each	OPERATING DATA				Gal. Oil Incl.	Approx. Ship. Wt. Lb.
		Inter- rupting Rating Amp.	Minimum Tripping Current Amp.	Approx. No. of Reclo- sures	Approx. Interval Seconds		
	3	\$109.00	75	10	3	2	180
2200	6	109.00	150	17	3	2	180
to	12	109.00	300	30	3	2	180
15,000	25	109.00	600	65	3	2	180
	50	109.00	1200	130	3	2	180

G-E Type Y-298A Tripping Current Transformers

For Oil Circuit Breakers

25-125 Cycles, 15000 Volts or Less



400 Amperes and Below

These transformers are for tripping oil circuit breakers. They may be used with any of the standard 4- and 5-ampere trip coils. They are listed in capacities from 5 to 800 amperes at 15000 volts or less.

In general their use is limited to tripping duty only, either directly or in connection with relays, but where high accuracy is not essential a secondary ammeter may be used.

As these transformers are small and inexpensive they may be used very conveniently in installations where series trip has heretofore been recommended.



500 to 800 Amperes

The smaller capacities from 5 to 400 amperes inclusive are equipped with cast metal bases with two-bolt holes, allowing them to be bolted to flat surfaces or pipe supports.

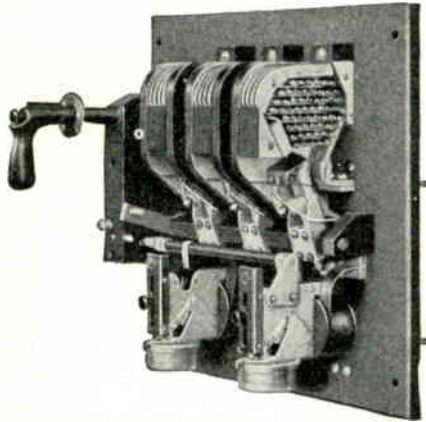
The larger capacities from 500 to 800 amperes inclusive are of the bus type and are supported by the buses or the stud of the oil circuit breaker, no bases being required due to the light weight of these transformers.

Cat. No.	Primary Capacity in Amperes	Ratio	Shipping Weight Pounds	Price Each
216838	5	1-1	44	\$53.00
216839	10	2-1	44	53.00
216841	15	3-1	44	53.00
216842	20	4-1	44	53.00
216843	25	5-1	44	53.00
216844	30	6-1	44	53.00
216845	40	8-1	44	53.00
216846	50	10-1	44	53.00
216847	60	12-1	44	53.00
216848	75	16-1	44	53.00
216849	100	20-1	44	53.00
216850	125	25-1	44	54.00
216851	150	30-1	44	54.00
216852	200	40-1	44	55.00
216853	250	50-1	44	55.00
216854	300	60-1	44	55.00
216855	350	70-1	44	56.00
246264	400	80-1	44	56.00
246265	500	100-1	44	56.00
246266	600	120-1	44	56.00
246267	800	160-1	44	56.00

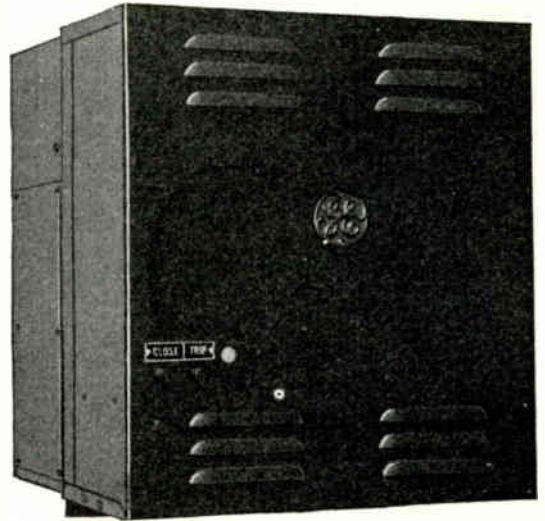
All transformers are provided with an additional turn on secondary for ammeters only.

These transformers are tested at 5000 volts between primary and all other parts, and at 2500 volts between secondary and ground.

Types AE-1A and AE-1B G-E Air Circuit Breakers
Manually or Electrically Operated
Trip Free



Type AE-1A Air Circuit Breaker, Manually Operated, Triple-Pole, for Dead-Front Switchboard Mounting (Barriers Partially Cut Away to Show Arc Quenchers)



Type AE-1B Air Circuit Breaker, Electrically Operated, Enclosed Type, with Pull Box

Types AE-1A and AE-1B Air Circuit Breakers are particularly adapted to general industrial and switchgear service where numerous opening and closing operations are required. They provide economical and reliable protection for power and lighting feeder circuits.

These breakers are capable of operating thousands of times without requiring maintenance and their simple, compact, and sturdy construction makes them especially suitable for mounting in steel enclosures.

The Type AE-1A with 10,000-ampere interrupting rating and the Type AE-1B with 20,000-ampere interrupting rating are similar, except that the Type AE-1B is generally heavier and sturdier than the Type AE-1A in order to handle the 20,000-ampere current.

Breakers are available in single, double, triple and four-pole units, with overcurrent trip element for each pole, or for fewer poles as desired.

Calibration range: all ratings, 100-200 per cent of rating.

Voltage ratings: 600 volts a.c., 250 volts d.c.

The multipole breakers consist of single-pole elements grouped compactly together and operated simultaneously by a sturdy insulated steel shaft. Manually operated breakers have a pistol-grip handle—turn to close, pull to trip. Electrical operation is by means of a solenoid mounted at the side of the breaker within the same space occupied by the manual mechanism.

Solid metallic contacts of silver alloy assure long life and

reliable operation. In the Type AE-1B Breakers there are, in addition, solid silver-to-silver main current contacts. The arc-resisting silver alloy, and the solid-silver contacts provide low contact resistance and obviate oxidation troubles and consequent heating.

The arc quencher, one on each pole, is a most important factor in the dependable operation of these breakers. It minimizes disturbances and quickly extinguishes the arc. Metal pins above the contacts split up and cool the arc. The arc energy is rapidly absorbed by parts having high thermal capacity and large radiating surfaces.

These breakers are equipped with dual magnetic overcurrent tripping devices which differentiate between overloads and short circuits by providing a time delay inversely proportional to the overcurrent for values up to approximately ten times normal and instantaneous tripping for higher, or short-circuit, currents.

Prices include: time-delay, dual-magnetic, overcurrent tripping device per pole; arc quenchers; and ebony-asbestos base. Breakers in steel enclosures include, in addition, position indicator to show open or closed position of breaker, and a pull box. Manually operated breakers have pistol-grip handle on the enclosing case cover. Electrically operated breakers in enclosures include push-button closing switch and push-button mechanical trip.

When ordering, specify type, number of poles, number of current trips, voltage rating, a.c. or d.c. circuit, current rating, and whether for front-of-board or dead-front mounting or enclosed for individual mounting.

***Type AE-1A—10,000 Amperes Interrupting Rating**

	In Steel Enclosures for Individual Mounting, with Pull Box				For Live-Front Switchboard Mounting—No Enclosure Included											
	MANUALLY OPERATED				ELECTRICALLY OPERATED				MANUALLY OPERATED				ELECTRICALLY OPERATED			
	One-Pole	Two-Pole	Three-Pole	Four-Pole	One-Pole	Two-Pole	Three-Pole	Four-Pole	One-Pole	Two-Pole	Three-Pole	Four-Pole	One-Pole	Two-Pole	Three-Pole	Four-Pole
15-125 Amp.	On	\$76.54	\$94.77	\$133.40	On	\$139.23	\$157.45	\$196.09	\$47.39	\$72.90	\$91.12	\$128.30	\$109.08	\$135.59	\$153.81	\$190.99
150-225 Amp.	App.	80.18	101.33	140.69	App.	142.87	164.02	203.38	50.30	76.54	97.69	135.59	112.99	160.38	160.38	198.28
Ship. Wt...lb.	..	126	153	185	..	126	153	185	56	73	96	116	56	73	96	116

†Type AE-1B—20,000 Amperes Interrupting Rating

15-225 Amp.	\$112.27	\$176.42	\$228.91	\$305.45	\$198.29	\$262.44	\$314.93	\$391.47	\$83.11	\$147.26	\$199.75	\$269.00	\$169.13	\$233.28	\$285.77	\$355.02
250-400 Amp.	134.14	198.29	258.07	335.34	220.16	284.31	344.09	421.36	104.98	169.13	228.91	298.89	191.00	255.15	314.98	384.91
450-600 Amp.	161.84	225.99	290.87	368.15	247.86	312.01	376.89	454.17	132.68	196.83	261.71	331.70	218.70	282.85	347.78	417.72
Ship. Wt...lb.	170	240	265	310	170	240	265	310	105	130	155	190	105	130	155	190

*Ampere ratings available: 15, 20, 25, 35, 50, 70, 90, 100, 125, 150, 175, 200 and 225.

†Ampere ratings available: 15, 20, 25, 35, 50, 70, 90, 100, 125, 150, 175, 200, 225, 250, 275, 300, 325, 350, 400, 450, 500, 550, and 600.

Type AL-2 G-E Air Circuit Breakers Manually or Electrically Operated

Trip Free

The unit frame construction of this breaker makes each pole a self-contained unit. These single-pole units are mechanically connected for simultaneous operation in multipole breakers. Individual toggle mechanisms put the contacts under strong pressure—yet the breaker is easily closed.

When manually operated, this breaker is preferably mounted back of a dead-front panel, or within a metal enclosure. The handle then extends through a slot in the cover and is completely insulated from all live parts. A positive indicator shows open or closed position of the breaker.

tion that provides positive action. Universal motors for a.c. or d.c. are employed.

Calibration range: all ratings, 100-200 per cent of rating.

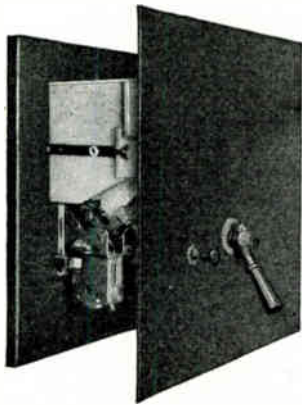
Voltage ratings: one-pole breakers, 600 volts a.c., 250 volts d.c.; multipole breakers, 250 volts, a.c. and d.c.

The overcurrent tripping is direct-acting and, in no case, are current transformers or overcurrent relays required.

Price includes: time-delay, direct-acting overcurrent tripping device per pole; arc quenchers; and ebony-asbestos base. Electrically operated breaker price includes, in addition, shunt trip; closing; control relay; and four-stage, rotary-type, auxiliary switch, all mounted on breaker permanent base and wired to a terminal block.

When ordering, specify type, number of poles, number of current trips, time or instantaneous, voltage rating (order barriers for multipole breakers above 250 volts a.c. or d.c.), a.c. or d.c. circuit, current rating, manually or electrically operated (if electrically operated, give voltage, a.c. or d.c. for control source), front-of-board or dead-front mounting (Price includes a permanent base of standard size. If a different size base is ordered, give full information), and laminated stud slots for 2000 amperes and above:

Upper { Horizontal
 { Vertical
Lower { Vertical
 { Horizontal



Type AL-2, 600-Ampere, 250 Volt, Triple-Pole Air Circuit Breaker, Manually Operated, Dead-Front Mounting

Electrical operation is by means of a motor-operated cam mechanism, operating through an enclosed worm-gear reduc-

		Manually Operated													
		In Steel Enclosure for Individual Mounting—Without Pull Box						Front-of-Board Mounting without Enclosure							
		TWO-POLE		THREE-POLE		FOUR-POLE		ONE-POLE		TWO-POLE		THREE-POLE		FOUR-POLE	
Amperes		Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.
*100-	600 A.C. and D.C.	\$393.66	275	\$544.56	325	\$732.65	435	\$159.65	130	\$277.75	225	\$407.51	275	\$548.21	375
	800 A.C. and D.C.	430.11	285	596.32	340	802.63	455	182.98	130	314.20	225	359.27	275	618.19	378
1000-	1200 A.C. and D.C.	488.43	265	679.43	315	914.90	415	220.16	130	273.50	130	542.38	275	730.46	375
	1600 A.C. and D.C.	638.60	275	899.59	325	1207.95	430	280.67	130	522.69	225	762.53	275	1023.52	375
	2000 A.C.							408.95	250	809.19	500	1170.05	705	1576.83	1000
	2500 A.C.							426.47	260	860.22	510	1246.59	720	1680.35	1015
	3000 A.C.							510.30	270	1027.89	520	1487.16	735	2004.75	1025
	4000 A.C.							739.94	300	1490.81	550	2146.91	815	2004.75	1120
	5000 A.C.							929.48	520	1866.24	1090	2686.37	1600	3624.59	...
	6000 A.C.							1136.00	540	2298.13	1110	3269.53	1620	On Application	
	2000 D.C.							371.79	230	754.32	480	1093.50	690	...	...
	2500 D.C.							400.95	240	809.19	490	1170.05	705	...	...
	3000 D.C.							426.47	450	860.22	500	1246.59	720	...	...
	4000 D.C.							510.30	270	1027.89	520	1487.16	720	...	...
	5000 D.C.							623.30	300	1246.59	550	1822.50	735	...	...
	6000 D.C.							623.30	300	1246.59	550	1822.50	815	...	...
	8000 D.C.							929.48	520	1866.24	1090	2686.37	1600	...	...
	10,000 D.C.							1133.60	...	2278.13	...	3269.57	1800	...	...

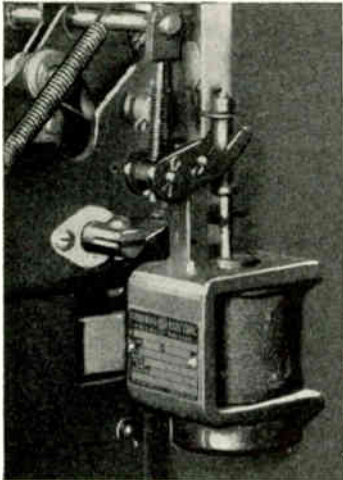
		Electrically Operated													
		TWO-POLE		THREE-POLE		FOUR-POLE		ONE-POLE		TWO-POLE		THREE-POLE		FOUR-POLE	
Amperes		Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.
*100-	600 A.C. and D.C.	\$569.35	525	\$753.79	575	\$952.80	745	\$341.90	365	\$460.00	475	\$644.44	525	\$817.94	685
	800 A.C. and D.C.	605.80	525	815.55	575	1022.79	745	365.23	365	496.45	475	696.20	525	887.92	685
1000-	1200 A.C. and D.C.	664.12	525	888.65	575	1135.05	745	402.41	365	554.77	475	779.30	525	1000.19	685
	1600 A.C. and D.C.	814.29	525	1108.81	575	1428.11	745	462.92	365	704.94	475	999.46	525	1293.25	685
	2000 A.C.							583.20	450	1064.34	720	1534.55	1065	2014.23	1340
	2500 A.C.							608.72	465	1153.70	730	1611.09	1080	2117.75	1350
	3000 A.C.							692.55	475	1283.04	740	1851.66	1095	2442.15	1370
	4000 A.C.							995.09	505	1818.86	770	2675.51	1125	3515.24	1505
	5000 A.C.							1184.63	735	2194.29	1410	3196.67	2850	4244.24	3425
	6000 A.C.							1388.75	765	2606.18	1460	3779.87	2865	On Application	
	2000 D.C.							554.04	430	1009.67	700	1458.00	1050	...	...
	2500 D.C.							583.20	440	1064.34	710	1534.55	1060	...	...
	3000 D.C.							608.72	450	1153.70	720	1611.09	1065	...	...
	4000 D.C.							765.45	475	1355.94	740	1997.46	1080	...	...
	5000 D.C.							878.45	505	1574.64	780	2332.80	1125	...	...
	6000 D.C.							995.09	535	1818.86	810	2657.21	1145	...	...
	8000 D.C.							1221.08	750	2267.19	1460	3268.57	2865	...	...
	10,000 D.C.							1452.00	...	2679.08	...	3852.77	3000	...	...

*Ampere ratings available: 100, 125, 150, 175, 225, 300, 400, 450, 550, 600, and above as listed.
Calibration range: all ratings; 100-200 per cent of rating.

Voltage ratings: 600 volts, a.c.; 250 volts, d.c.

For 750-volt, d.c. breakers, write for information.

Accessories for G-E Air Circuit Breakers



Undervoltage Device Mounted on Type AL-2 Air Circuit Breaker

Undervoltage Devices. The undervoltage device is designed to open the circuit breaker when the line voltage drops to approximately 50 per cent or less of normal voltage. These devices are especially adapted to motor service.

Shunt Trips. The shunt trip resembles the undervoltage device in construction, but differs in that it trips the circuit breaker when energized. It should be allowed to remain in the circuit only during time of tripping.

Reverse-Current Devices. Available for use with the Types AE-1B and AL-2 Breakers only. Recommended wherever

it is desired to trip d.c. breakers on reversal of current flow.

Auxiliary and Bell-Alarm Switches. The standard auxiliary switch for use with manually operated air circuit breakers is both circuit-opening and circuit-closing, and is supplied in every case where an auxiliary switch is required for use with the Type AL-2 Breaker. It is of the push-button type. The circuit-closing contacts are arranged to make contact when the breaker opens, and may be used for interlocking systems or to indicate the opening of the breaker by means of an indicating lamp or bell alarm. These contacts can be opened by hand after the breaker opens, and are automatically reset when the breaker closes.

The auxiliary switches for electrically operated air circuit breakers are of the rotary type, built in single-pole units (stages) up to a total of eight. Each stage can be adjusted independently to be either circuit-opening or circuit-closing.

Undervoltage Device (Instantaneous) or Shunt Trip

TYPE AE-1A BREAKER OF AMP. RATING GIVEN		TYPE AE-1B BREAKER OF AMP. RATING GIVEN		TYPE AL-2 BREAKER OF AMP. RATING GIVEN	
Breaker Amperes	Each	Breaker Amperes	Each	Breaker Amperes	Each
All	\$12.39	All	\$20.41	100-1600	\$25.52
				2000 & Above	47.39
All	\$24.78	All	\$32.08	100-1600	\$36.45
				2000 & Above	61.97
				100-1600	\$91.13
				2000-4000	123.93
				5000 & Above	182.25
All	\$8.76	All	\$8.76	All	\$8.76
All	\$2.92	All	\$2.92	All	\$2.92
All	\$32.08	All	\$32.08	All	\$21.87
All	No Addition	1-Pole	\$23.33	100-1600, 1,	\$28.81
		2, 3-Pole	24.79	2, 3-Pole	43.74
		4-Pole		100-1600, 4-	47.39
				Pole	81.00
				2000 & Above	
				1, 2, 3-Pole	47.39
				2000 & Above,	
				4-Pole	81.00
All	No Addition	1, 2, 3-	\$18.95	100-1600, 1,	\$25.52
		Pole	24.79	2, 3-Pole	36.45
		4-Pole		100-2000, 4-	32.81
				Pole	64.80
				2000 & Above,	
				1, 2, 3-Pole	32.81
				2000 & Above,	
				4-Pole	64.80

G-E Relays

Relay protection is applied to an electric system for minimizing interruptions of service and damage to apparatus which result from abnormal conditions in the system. The primary considerations are:

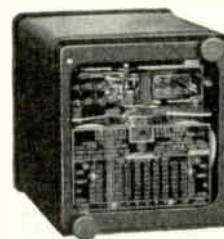
To maintain service over the greatest possible portion of the system, under all conditions.

To disconnect only the circuit in which a fault has developed.

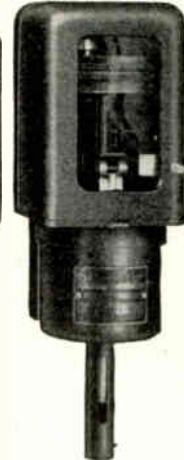
To disconnect the faulty portion as quickly as possible.

To prevent injurious heating due to short circuits or heavy overcurrents.

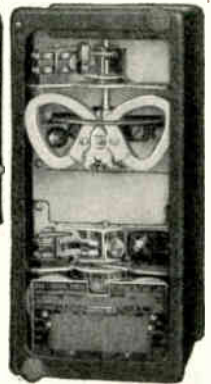
The General Electric Company makes more than 400 varieties of protective relays, including current, voltage, directional power, overpower, underpower, frequency, phase-failure, differential, temperature, control, and auxiliary relays. Space does not permit the listing of all types, but there is a G-E Relay for every purpose. Upon receipt of information concerning application requirements, recommendations will be given by the nearest Graybar office.



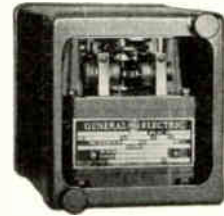
Type IAC Time Induction Overcurrent Relay, 5 1/2 Inches Wide and 6 Inches High



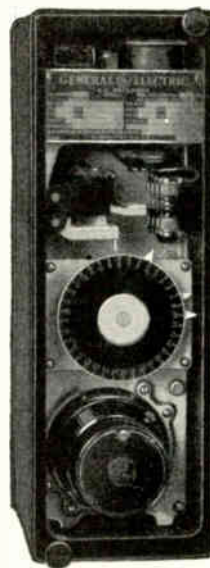
Type PAC Plunger Overcurrent Relay (Time or Instantaneous), 4 Inches Wide and 11 1/2 Inches High



Type IBC Time Induction Power-Directional Overcurrent Relay with Directional Control, 5 1/2 Inches Wide and 12 Inches High



Type CAP15A Polyphase Power-Directional Relay, 5 1/2 Inches Wide and 6 Inches High

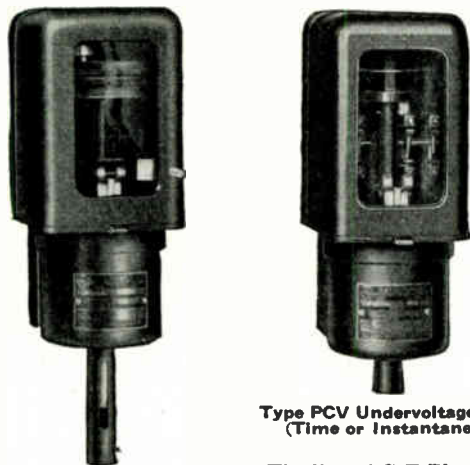


Type AC-1 Reclosing Relay for Immediate or Time-Delay Initial Reclosure (Three Reclosures before Lockout) 5 1/2 Inches Wide and 16 Inches High



Type MF Synchronous Timer, Calibrated in Cycles, or in Hundredths of Seconds for Setting Relays, 6 1/2 Inches Square

G-E Plunger Relays



Type PAC Plunger Overcurrent Relay (Time or Instantaneous)

Type PCV Undervoltage Relay (Time or Instantaneous)

The line of G-E Plunger Relays for switchboard mounting is complete, including relays to protect against overcurrent and undervoltage, and for use as auxiliary relays for a.c. and d.c. circuits. The same principle of operation is common to all of them, and depends upon the action of a magnet coil in attracting or releasing the plunger when predetermined values of current or voltage exist in the coil circuit. The a.c. relays are for use in connection with current or potential transformers. Voltage relays are available up to 575 volts without potential transformers.

All these relays are single-pole, have interchangeable parts, and the contacts can be arranged for circuit opening, circuit closing, or for circuit opening and closing. This design, with its varieties of adjustments, coils, and the arrangement of its contacts, makes possible the adaptation of these relays to an unusually large number of applications.

Some of the principal features of these relays are:

Die-cast supporting frame. This results in a very light-weight relay.

Cover of insulating material, eliminating inadvertent contact with live parts.

Bellows for time operation are made of a special compound which needs no oiling or treating, and is not affected in either action or durability by high or low temperature.

Removable studs provide back connection.

Only one valve is provided for time relays. This valve serves a triple-duty purpose, and can readily be adjusted to make the time interval effective on either the up or the down stroke of the plunger, or both.

Contacts are of universal design, silver-to-silver, and can be readily changed from circuit-opening to circuit-closing, or vice versa.

In the Types PAC and PAA "hand or self-resetting" types, the toggle can be changed from self-resetting to hand-resetting, or vice versa, by a simple means provided for this purpose.

All relays except the undervoltage types are provided with an orange-colored mechanical target indicator, hand-reset by means of a push button in the cover.

In ordering, specify by type and description.

Relays are 11½ inches high, 3¾ inches wide, and 3¼ inches deep. Shipping weight, 6 pounds.

G-E Induction Time Relays for A.C. Circuits



Type IAC Time Induction Overcurrent Relay

Type IAC Induction Time Relays are for the overcurrent protection of single-phase and polyphase circuits where permanence of operating characteristics and high accuracy in timing are essential. The time of operation is inverse at low current values, and approaches a definite time at higher current values. These relays are for use in connection with current transformers, for mounting on switchboard panels. Single-unit or three-unit relays are available.

Some of the principal features of these relays are:

Time-lever adjustment by calibrated scale.

Current tap-plate for varying current-operating adjustment.

Index table for determining time of operation-lever adjustment.

Jewel bearings with shock-resisting seat.

Indicating target, visible from all angles, is hand-reset.

Low volt-ampere burden on current transformers.

Type IAC Overcurrent Relays can be had also with an internal instantaneous attachment, as well as with a current indicator which indicates at all times the amount of current flowing through the operating coil. The IAC Relay is also available with an internal tripping relay to provide the equivalent of circuit-opening contacts for use in connection with an a.c. oil-circuit breaker, current transformer trip coil.

The Type IAV Undervoltage Relays are made in single-pole units only and are used for the undervoltage protection of circuits. They are similar in appearance to the Type IAC, and have the same construction features.

The standard undervoltage adjustment of the Type IAV Relays is 70 per cent of rated voltage to close the contacts. This may be adjusted to any value between 50 per cent and 95 per cent of rated voltage.

All Type IAC Relays listed below have target coils to operate the indicating targets. These are connected in series with the trip coil of the apparatus operated by the relay. Two ratings of coils are available: 1 ampere, 0.25 ohm (for use up to 18 amperes); and 0.2 ampere, 7.0 ohms (for use where tripping current is less than 1 ampere).

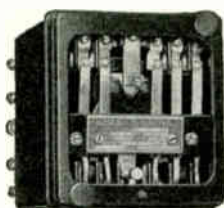
When ordering, specify which target coil, or the device with which the relay is to be used.

Single units are 6 inches high, 5½ inches wide, and 7 inches deep. Triple units (Type IAC only) are 16 inches high, 5½ inches wide, and 7 inches deep.

Type	Instantaneous Each	Time Each	Application	CONTACTS		Reset
				No. of Circuits	Function	
PAC	\$30.00	\$34.00	Overcurrent	2	1 Opening 1 Closing	Self or Hand
PBC	35.00	.....	Sensitive Overcurrent	4	2 Opening 2 Closing	Hand Only
PAA	31.00	35.00	Auxiliary (125 V. D.C.)	2	1 Opening 1 Closing	Self or Hand
PBA	31.00	.....	Auxiliary (125 V. D.C.)	2	Closing (Separately)	Hand
PCV	31.00	35.00	Undervoltage	2	1 Opening 1 Closing	Self Only

Time Overcurrent—60-Cycle						
Type	Each	No. of Poles per Unit	Contacts	Ship. Wt. Lb.		
IAC	\$41.00	Single	1-Circuit Closing	19		
IAC	179.00	Triple	3-Circuit Closing	55		
Time Overcurrent with Instantaneous Attachment—60-Cycle						
IAC	\$52.00	Single	1-Circuit Closing	19		
Time Overcurrent with Current Indicator—60-Cycle						
IAC	\$66.00	Single	1-Circuit Closing	19		
IAC	248.00	Triple	3-Circuit Closing	55		
Time Undervoltage—115-Volt, 60-Cycle						
IAV	\$53.00	Single	1-Circuit Closing	19		
IAV	57.00	Single	2-Circuit Closing	19		

G-E Auxiliary Relays



Type HFA Instantaneous Auxiliary Relay, 6-Circuit



Type HGA Instantaneous Auxiliary Relay

Auxiliary Relays are ordinarily controlled by the contacts of other relays or other devices. They are generally used, in combination with other relays, for obtaining certain performances not available in the main controlling or relay combination, and for circuit-controlling devices such as auxiliary or control switches.

Standard overcurrent or undercurrent relays may be used as auxiliary relays—see Type PAA listed on the preceding page. The following table lists a few typical auxiliary relays with a brief description of their features.

Order by type reference, giving voltage and frequency of relay circuit, or stating the use for which relay is desired.

Type	List Each	Principal Features	Current Application	DIMENSIONS, INCHES			CONTACT RATING		Ship. Wt. Lb.	
				Height	Width	Depth	Minute	Break at 125 V. D.C.		
HEA11A	\$50.00	Multicontact Hand Reset, Mounted on Back of Panel with Reset Handle on Front, 6 Circuit Contacts.....	D.C.	4 ⁵ / ₁₆	2 ¹³ / ₁₆	11 ¹ / ₁₆	20	20	1.5	6
HEA11B	60.00	Same as Type HEA11A, except 10-Circuit.....	D.C.	4 ⁵ / ₁₆	2 ¹³ / ₁₆	12 ³ / ₁₆	20	20	1.5	8
HEA11G	75.00	Same as Type HEA11A, except 16-Circuit.....	D.C.	4 ⁵ / ₁₆	2 ¹³ / ₁₆	14 ³ / ₁₆	20	20	1.5	11
HFA12A	25.00	Hinged-Armature Type, Single-Unit, 4 Circuit Contacts, Self-Reset (2 Circuits, Double-Throw).....	*A.C. or D.C.	6 ¹ / ₂	5 ¹ / ₂	5 ⁵ / ₈	30	12	3	7
HFA11A	30.00	Same as Type HFA12A, except 6-Circuit.....	*A.C. or D.C.	6 ¹ / ₂	5 ¹ / ₂	5 ⁵ / ₈	30	12	3	7
HGA11	7.50	Hinged-Armature Type, Single-Unit, 4 Circuit Contacts, Self-Reset.....	*A.C. or D.C.	4 ¹ / ₂	2 ¹ / ₂	4 ¹ / ₁₆	30	12	3	3
HG-7	31.00	Hinged-Armature Type, Single-Unit, 1 Circuit Contact, Self-Reset, Metal Case.....	A.C.	6 ³ / ₈	3 ¹ / ₁₆	4 ⁷ / ₈	50	15	15	7
HGA-13	22.00	"One-Shot" Immediate-Reclosing Relay, Hand Reset, Hinged Armature, Single-Pole.....	*A.C. or D.C.	4 ¹ / ₂	2 ¹ / ₂	4 ¹ / ₁₆	30	12	3	3
HGA-18	50.00	"One-Shot" Immediate-Reclosing Relay, Automatic Reset, Hinged Armature, Single-Pole.....	D.C.	6 ¹ / ₂	5 ¹ / ₂	7	30	12	8	12
REA	76.00	Triple-Pole Unit, Auxiliary Tripping Relay for Use in Connection with Circuit-Closing Relays and Current Trip Coils, Universal Case.....	A.C.	6	5 ¹ / ₂	7	5	5	50	20
RAV	90.00	Voltage, Directional and Undervoltage Relays for D.C. Circuits, Polarized Relays.....	D.C.	6	5	7 ¹ / ₂	20	5	0.2	23
ICR	60 Cy. 115 V. 90.00 25 Cy. 25.00 95.00	Undervoltage and Phase-Rotation Relay for Protecting Motors against Undervoltage, Open-Phase, and Reverse-Phase Rotation. Single-Pole Units in Universal Cases, Instantaneous.....	A.C.	6	5 ¹ / ₂	7 ¹ / ₂	†	†	†	19
PI-3	60 Cy. 230 V. 33.00 25 Cy. 230 V. 36.00	Undervoltage and Phase-Rotation Relay for Protecting Motors against Undervoltage and Reverse-Phase Rotation (Three-Phase Listed).....	A.C.	6 ⁵ / ₈	4 ³ / ₄	4 ³ / ₄	20	1	5	28

*Specify whether for a.c. or d.c. service, and in all cases give voltage of circuits in which relays are to be used.

†Contacts are provided with 4 or 18-ampere holding coils in series with contacts.

G-E Solenoid Closing (Control) Relays

Single-pole relays are for use in solenoid circuits where the current is higher than can be broken by the contacts of the control switch. They have an instantaneous pickup and a hesitating drop-out. The hesitating feature prevents failure of solenoid operation due to premature opening of

relay coil circuit. The relays are provided with dustproof cover. They may be mounted on any flat surface or on vertical or horizontal pipe. They are for use on d.c. circuits only.

Specify voltage of control circuit in ordering. *



Type TB-2

Type	List Each (125-Volt)	Application	Contact Current Rating, 5-Second Ship. and Interrupting Lb.
PB-54	\$36.00	Moderate Duty, for Use with Non-Trip-Free Solenoids Where Electrically Trip-Free Feature Is Not Desired.....	150 23
PB-60	55.00	Moderate Duty, for Use with Non-Trip-Free Solenoids Where Electrically Trip-Free Feature Is Desired.....	150 25
PB-60	65.00	Heavy Duty, for Use with Non-Trip-Free Solenoids Where Electrically Trip-Free Feature Is Desired.....	350 25
PB-63	50.00	Moderate Duty, for Use with Trip-Free Solenoids, Pump-Free with Internal Auxiliary Device and Auxiliary Contacts.....	150 25
PB-64	60.00	Heavy Duty, for Use with Trip-Free Solenoids, Pump-Free with Internal Auxiliary Device and Auxiliary Contacts.....	350 23
HG-15	13.00	Light Duty, for Use with Copper-Oxide-Rectifier Solenoids. Contacts in A.C. Side of Rectifier. Coil in D.C. Side of Auxiliary Rectifier.....	30 4

Type TB-2 G-E Temperature Relays

The Type TB-2 Relay is recommended for protecting machine bearings against overheating. The contacts are silver-to-silver, and are operated on the quick-make and quick-break principle. Relay will carry 5 amperes continuously or 20 amperes for 1 minute. It will interrupt 1 ampere at 125 volts, d.c., or 7 amperes at 220 volts, a.c.

Each relay has a syphon bulb containing a volatile liquid which vaporizes when heated to a predetermined temperature. This causes a bellows to expand and operate the

contacts. Relay is adjusted to operate at approximately 105°C. After the syphon cools, the contacts will remain in the operated position and must be reset by hand.

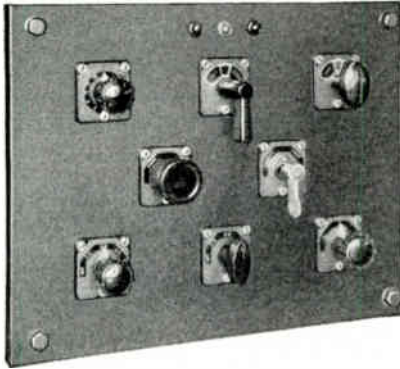
Relay, exclusive of bulb, is 3³/₄ inches wide and 6 inches high.

No.	List Each	Length of Syphon Tube	Ship. Wt. Lb.
2132592G 6	\$40.00	2' 8"	12
2132592G 3	40.00	6'	15
2132592G12	40.00	10'	20

A Portable Load-Testing Box and a Portable Synchronous Timer for Testing Relays Are Also Available; Information on Application

Miscellaneous G-E Switchgear Devices

Type SB-1 Control and Instrument Transfer Switches



Panel Mounting Typical Type SB-1 Control Switches

These multicontact switches are for the control of circuit breakers, electrically operated governors, rheostats, and other devices, for the transfer of current and potential coils of instruments and for many other similar applications.

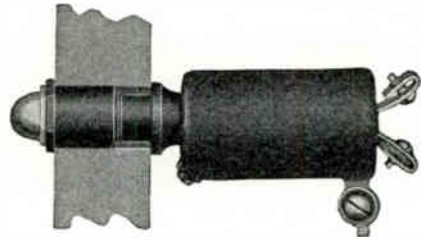
They are rotary type with cam-operated silver-to-silver contacts. The contacts will carry 20 amperes continuously and are insulated for 600 volts. They will interrupt 10 amperes at 125 volts d.c., noninductive circuits.

Switches are compact, totally enclosed, dead front, and require small panel space. Circuit-breaker control switches have a red-green mechanical target that shows last previous operation. Instrument transfer switches have fixed or removable handles according to application. The design is extremely flexible and can be applied to meet special requirements.

Service	Each	Poles and Throws	No. of Stages	Type of Handle	Escutcheon Marking	Approx. Ship. Wt. Lb.
Circuit-Breaker Control	\$12.00	Single-Pole Double-Throw	2	Fixed, Pistol Grip	Red and Green Indicator	3
Circuit-Breaker Control	14.00	Single-Pole Double-Throw with Auxiliary Contact	4	Fixed, Pistol Grip	Red and Green Indicator	4
Governor-Motor Control	14.00	Double-Pole Double-Throw	4	Fixed, Radial	Raise-Lower	4
Rheostat Control	14.00	Double-Pole Double-Throw	4	Fixed, Round, Smooth	Raise-Lower	4
Voltmeter Transfer	12.75	Single-Pole Four-Throw	3	Fixed, Round, Knurled	Off, 1-2, 2-3, 3-1	4
Voltmeter Transfer	*14.00	Single-Pole Four-Throw	3	Removable	Off, 1-2, 2-3, 3-1	4
Ammeter Transfer	20.00	Three-Phase Transfer	6	Fixed, Round, Knurled	1, 2, 3	5
Wattmeter Rva. Meter Transfer	15.50	Four-Pole Double-Throw	4	Fixed, Round, Knurled	Watt, Off, Rva.	5
Synchroscope	*12.00	3-Position, 1-Pole Run, 2-Pole Start	2	Removable	R, I	3

*Handle not included; order as required at \$1.50 each.

Indicating Lamps



These indicating lamps are used separately wherever a clearly visible indication is desired, or in combination with control switches. They have a high visibility with low wattage consumption and long life. They occupy little space, and may be mounted on 1½-inch centers.

Lamps consist of a receptacle body and escutcheon of insulating compound which permits using the device on metal panels. Resilient metal contact clips hold the lamps and provide the rear connections. Lamp is a No. 59X243 G-E Mazda lamp similar to a telephone type of lamp. This is a T2 lamp, No. 902 slide base, rated 24 volts. Its current consumption at normal volts is 0.035 ampere. For potentials higher than 24 volts, a resistor is used. This resistor element forms a component part of the device as commonly used; it slides over the receptacle body from the rear.

Compound color caps, easily removed and replaced, are used over the lamp and give positive indication. Five colors are available: clear, red, green, white, and amber; color desired should be specified.

The device is for mounting on ½, 1, 1½ or 2-inch steel panel. Panels more than 1 inch thick must be counter-bored on the back, 1¼-inch diameter to a depth of 1 inch from the front of the panel.



Prices include lamp, resistor and color cap. Standard package quantity, 40.

Operated at One Brilliance

†For ½ or ¾-in. Panel	†For 1, 1½ or 2-in. Panel	Each	Standard Package Each	Rated Circuit Voltage	Approx. Ship. Wt. Oz. Each
6193401G1	6005443G1	\$2.25	\$81.00	24	2
6193401G2	6005443G2	2.75	99.00	48	4
6193401G4	6005443G4	2.75	99.00	110	..
6193401G10	6005443G10	2.75	99.00	125	4
6193401G7	6005443G7	2.75	99.00	220	..
6193401G12	6005443G12	2.75	99.00	250	4

Resistor with Tap for Dim-Bright Operation

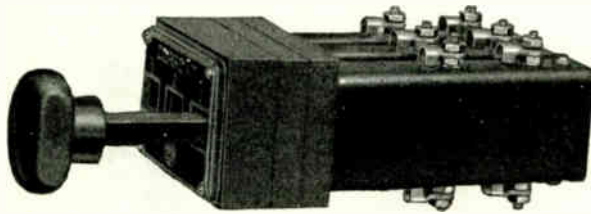
6193401G3	6005443G3	\$3.00	\$108.00	48	4
6193401G11	6005443G11	3.00	108.00	125	4
6193401G9	6005443G9	3.00	108.00	250	4

†No. includes Lamp No. 59X243, Color Cap and Resistor when required.

Extra color caps, 25 cents each; standard package of 40, \$9.00. When ordering, specify color.

Miscellaneous G-E Switchgear Devices

Type PJ-4 Current and Potential Transfer Jacks and Plugs



Type PJ-4 Jacks and Plugs are of strong and compact construction, require a small amount of panel space, and are especially adapted to switchboard mounting. They are dead-front, and are equipped with an insulating and dust-proof cover in the rear. They may be used to connect an ammeter or a voltmeter, or both, to any phase of one or more polyphase circuits, or to transfer a temperature meter to any one of various temperature detectors.

The jacks are available as single units or, in some cases, in triple-unit assemblies as illustrated.

No.	Each	Description	Approx. Ship. Wt. Lb.
6052309G 1	\$3.50	Pole Jack for Current Transfer....	2
6052309G 2	10.00	Pole Jack for Current Transfer....	5
2874991G 1	1.75	Current Plug.....	1
6052309G13	10.50	Pole Jack for Potential Transfer..	5
6011756G 1	4.00	Potential Plug.....	1

Type PK-2 Test Blocks and Plugs



Type PK-2 Test Block, 4-Pole, with Cover in Place

Type PK-2 Test Blocks and Plugs are for testing instruments, meters, and relays. The blocks are essentially 4-pole and 6-pole jacks, provided with molded Textolite covers having internal plug contacts, which make a through connection when the cover is in place. The blocks are furnished with various combinations of auxiliary contacts which automatically short-circuit the current transformer when the cover is removed. A block and its cover are the equivalent of a double-throw test switch.

The 4-pole and 6-pole test plugs are provided with studs and links, and may be permanently connected to the testing equipment for any of the various test methods in use. Testing setup is obtained simply by removing the cover and substituting the properly connected test plug. Normal connections are restored by replacing the cover.

The device is rated 250 volts, 10 amperes.

4-Pole Test Blocks with Covers, Current or Potential

Approximate shipping weight, 2 pounds.

For 1, 1½ or 2-Inch Panels.....	each	\$6.00
For 5/32 to 1/2-Inch Steel Panels.....	each	6.50
4-Pole Test Plug.....	each	3.00

6-Pole Test Blocks with Covers, Current or Potential

Approximate shipping weight, 3 pounds.

For 1, 1½ or 2-Inch Panels.....	each	\$8.00
For 5/32 to 1/2-Inch Steel Panels.....	each	8.50
6-Pole Test Plug.....	each	4.00

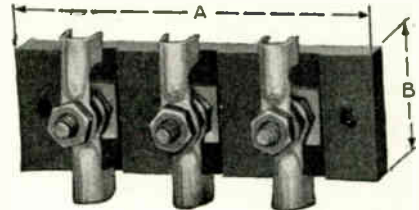
Write for detailed information.

Terminal Boards

Where a large amount of small wiring is necessary on the back of switchboards, these terminal boards are convenient for attaching the wires, giving the back of the board a neat and compact arrangement.

Nominal rating, 30 amperes. Terminals take wire up to No. 12 or 19/22.

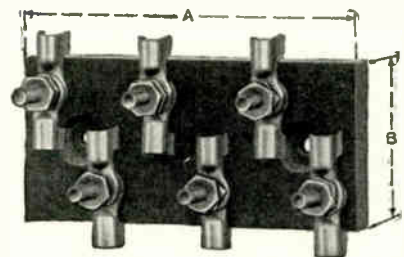
Compound Terminal Boards, with Cup Terminals, for Potentials Not Exceeding 110 Volts



Compound terminal boards are particularly adapted to use with devices on switchboards that have flexible leads instead of studs, such as certain types of relays, trip coils, etc.

No.	Each	Per Carton	No. of Studs	DIMENSIONS INCHES		No. in Car-ton	Approx. Ship. Wt. Lb. Each
				A	B		
174436	\$.65	\$5.00	2	2 1/4	1 1/8	9	1 1/2
174437	\$.90	4.50	3	3 1/4	1 1/8	6	1 1/2

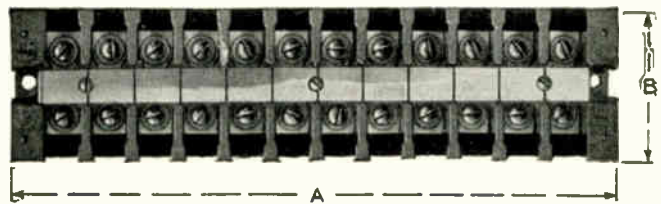
Compound Terminal Boards, with Cup Terminals



Compound terminal boards are particularly adapted to use with devices on switchboards that have flexible leads instead of studs, such as certain types of relays, trip coils, etc.

No.	Each	Per Carton	No. of Studs	DIMENSIONS INCHES		No. in Car-ton	Approx. Ship. Wt. Lb. Each
				A	B		
2860351G1	\$.65	\$6.75	2	1 1/4	1 3/4	12	1 1/2
2860351G2	.90	4.50	4	2 1/2	1 3/4	6	1 1/2
2860351G3	1.10	3.70	6	3 3/4	1 3/4	4	3/4

Type EB-1 Molded Terminal Boards



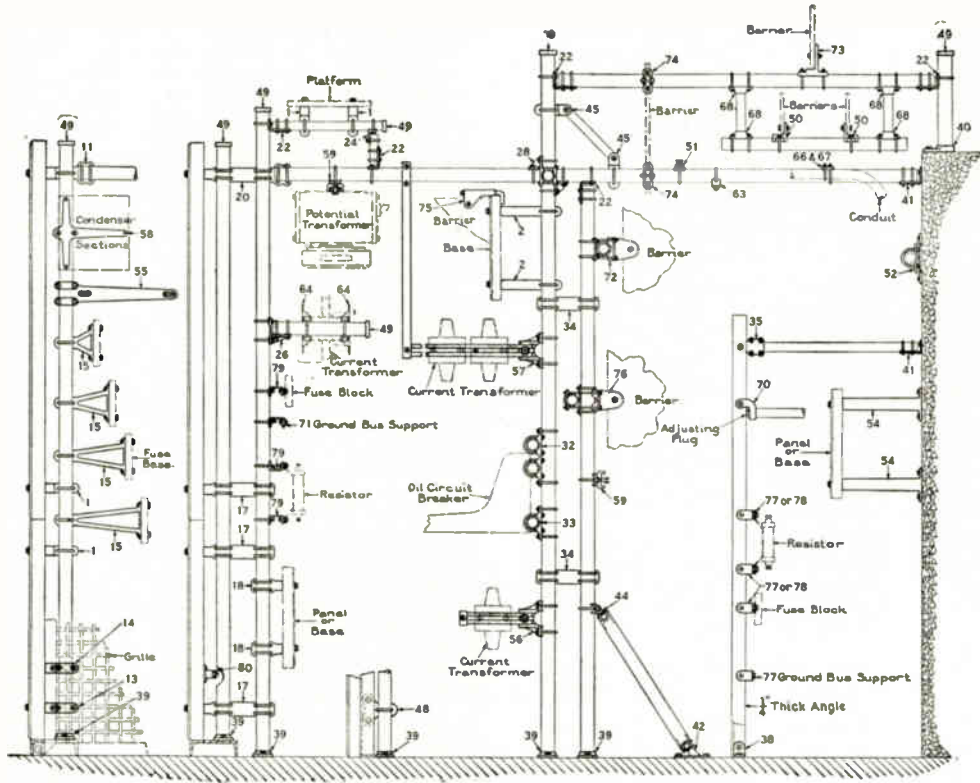
12-Pole Size

Molded terminal boards are available in 4, 8 and 12-pole sizes; combinations of these are used to suit conditions. A white marking strip is included, so that each circuit can be marked for identification. Each pole is provided with washer-head binding screws for wire connection.

No.	Each	Per Carton	No. of Studs	DIMENSIONS INCHES		No. in Car-ton	Approx. Ship. Wt. Lb. Each
				A	B		
16EB1A1	\$.70	\$31.50	4	3 1/4	2	50	3/4
16EB1A2	1.20	48.00	8	5 3/4	2	50	1
16EB1A3	1.60	72.00	12	8 1/4	2	50	1 1/2

Miscellaneous G-E Switchgear Devices

Indoor Pipe Fittings



Applications of Panel Pipe Fittings

Threadless pipe fittings enable a purchaser to install a switchboard with the minimum amount of labor. They are shipped unassembled ready to install, each number including all necessary yokes and nuts. They are for 3/4 or 1 1/4-inch standard pipe.

The most generally used fittings are punched from hot-rolled stamping steel, insuring uniformity of size and design; others are made of malleable iron. Malleable iron fittings can be obtained for use in place of the punched fittings if desired. Standard fittings have a dark-blue Glyptal finish

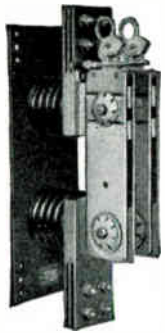
cadmium-zinc plated yokes and nuts. Fittings can also be furnished with cadmium, or hot-dip galvanized finish; prices on application.

For convenience in stocking, the fittings most generally used are packed in cartons. All cartons are of the same size: 4 1/4 inches high, 7 1/4 inches wide and 10 1/4 inches long. Standard packages contain 10 cartons.

When ordering, order by number giving size of pipe. Information on other fittings on request. Write for bulletin GEA-940.

No.	Diam. of Pipe In.	Each	Per Carton	Per Std. Pkg.	No. in Carton	No. in Std. Pkg.	Approx. Ship. Wt. Lb. Each	No.	Diam. of Pipe In.	Each	Per Carton	Per Std. Pkg.	No. in Carton	No. in Std. Pkg.	Approx. Ship. Wt. Lb. Each
1	3/4	\$.30	\$9.70	\$90.00	36	360	1/2	35	1 1/4	\$.50	\$7.75	\$68.25	18	180	1
1	1 1/4	.40	8.35	77.25	24	240	3/4	38	...	.40	12.75	118.30	36	360	1 1/2
3	1 1/4	.70	10.65	97.25	18	180	1 1/4	39	1 1/4	.30	9.55	86.50	36	360	1 1/4
4	1 1/4	.60	12.05	101.00	24	240	1 1/4	39	3/4	.30	13.65	127.40	50	500	1 1/4
6	1 1/4	.95	9.75	90.00	12	120	1 1/2	40	1 1/4	.70	16.35	150.00	24	240	1
9	1 1/4	.50	9.75	90.00	24	240	1	41	1 1/4	.65	10.00	91.00	18	180	1 1/4
11	1 1/4	.85	9.65	81.90	12	120	1 1/2	41	3/4	.60	9.10	86.50	18	180	1 1/4
12	1 1/4	1.20	12.00	111.00	12	120	2	42	...	.85	9.10	86.50	12	120	1 1/4
15	1 1/4	.65	3.65	32.75	6	60	2	43	...	.35	7.90	72.80	24	240	1
22	1 1/4	.75	12.10	112.00	18	180	1 1/4	44	1 1/4	.70	16.35	150.00	24	240	1 1/4
23	1 1/4	1.35	10.90	100.00	9	90	2 1/2	45	1 1/4	.35	10.90	104.50	36	360	3/4
24	3/4	.50	15.00	136.00	36	360	1 1/2	46	3/4	.50	10.00	91.00	24	240	3/4
25	3/4	.75	12.10	112.00	18	180	1	49	3/4	.05	5.40	50.00	150	1500	1/16
26	1 1/4	1.20	6.45	61.00	6	60	2 3/4	49	1 1/4	.06	4.50	41.00	100	1000	1/10
27	1 1/4	.95	5.20	50.00	6	60	2	52	1 1/4	.70	...	...	...	...	1
28	1 1/4	1.90	...	...	...	...	4	56	1 1/4	2.90	...	...	...	...	5 1/2
29	1 1/4	.75	8.10	75.50	12	120	1 1/2	68	1 1/4 - 3/4	.95	10.50	95.00	12	120	1 1/2
30	1 1/4	1.35	7.25	68.25	6	60	2 3/4	68	1 1/4 - 1 1/4	.95	10.50	95.00	12	120	1 1/2
31	1 1/4	1.55	5.65	52.75	4	40	3 1/4	71	1 1/4	.50	...	...	24	240	7/8
32	1 1/4	2.25	...	...	...	...	4 3/4	72	1 1/4	1.95	...	...	...	...	5 1/2
33	1 1/4	.75	8.10	75.50	12	120	2 1/4	79	1 1/4	1.45	...	...	...	...	3 1/2

Types LG-218 and LG-118 G-E Indoor Disconnecting Switches



Single-Pole, Single-Throw, 7500 V., 3000 Amp. Disconnecting Switch Front-Connected on Class A-4 Porcelain Insulator Units

Type LG-218. These switches are of laminated blade construction, with each blade composed of two pieces of hard-drawn, high-quality copper, contacting over stationary copper tongues. Switches have silver-to-silver line-pressure contacts at both the hinge tongue and the contact tongue. Contacts are self-adjusting, and pressure is maintained by phosphor-bronze spring washers.

Each switch is mounted on porcelain insulators with metal bases. High quality insulators are in accordance with N.E.M.A. Standards, as listed on the third following page.

Type LG-118. These switches are similar to Type LG-218 except that they are mounted directly on bases of insulating material.

Where moisture is likely to be present, or where excessive dust is prevalent, Type LG-218 Switches are recommended in preference to Type LG-118.

All switches include blade latches. Up to and including 1200 amperes, all switches have round studs; up to and including 600 amperes, pressed tube, cable terminal connectors with contact nuts are included. For 1200-ampere switches, terminal connectors must be ordered as extras if desired. Switches above 1200 amperes are provided with laminated bar connections; no cable-terminal connectors are included. The switches can be had with the laminations of any back-connected stud either vertical or horizontal, but unless otherwise specified, the switches will be furnished with contact-stud laminations horizontal; hinge-stud, vertical.

When ordering, specify the type, figure number, and the voltage and current rating.

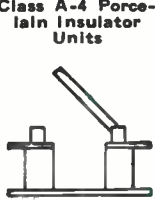


Fig. 1

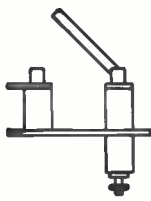


Fig. 2

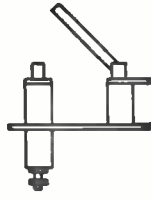


Fig. 3

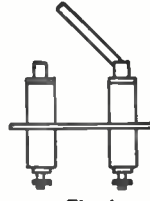


Fig. 4

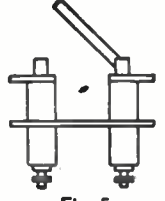


Fig. 5

Single-Throw Disconnecting Switches

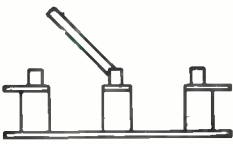


Fig. 6

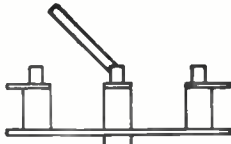


Fig. 7

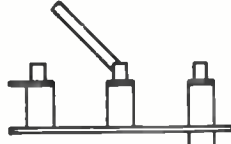


Fig. 8

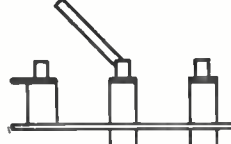


Fig. 9

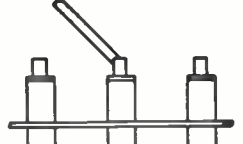


Fig. 10

Double-Throw Disconnecting Switches

Type LG-218—On Insulators and Steel Bases

Manual Control Mechanisms for Single-Throw Group Operation

Volts	Amperes	Fig. 1		Fig. 2 & 3		Fig. 4 & 5		Fig. 6		Fig. 7 & 8		Fig. 9		Fig. 10		CLASS 1, DIRECT 3-Pole		CLASS 2, INDIRECT 4-Pole		
		Net Each	Ship. Wt. Lb.	Net Each	Ship. Wt. Lb.	Net Each	Ship. Wt. Lb.	Net Each	Ship. Wt. Lb.	Net Each	Ship. Wt. Lb.	Net Each	Ship. Wt. Lb.	Net Each	Ship. Wt. Lb.	Net Each	Ship. Wt. Lb.	Net Each	Ship. Wt. Lb.	
5000	200	\$14.60	25	\$19.70	30	\$24.80	34	\$21.90	42	\$26.50	50	\$31.60	53	\$37.25	56		\$95.00	\$145.00	\$115.00	\$165.00
	400	16.60	28	22.40	36	28.20	40	24.90	45	30.10	53	35.90	57	42.35	60		95.00	145.00	115.00	165.00
	600	21.50	33	29.00	42	36.55	50	32.25	52	38.90	62	46.40	66	54.80	72		95.00	145.00	115.00	165.00
	1200	36.55	45	49.35	56	62.15	66	54.85	69	66.00	83	78.80	87	93.20	95		95.00	145.00	115.00	165.00
7500	400	17.60	35	23.75	43	29.90	50	26.40	55	31.95	62	38.10	66	44.90	68		95.00	145.00	115.00	165.00
	600	22.55	40	30.45	51	38.35	60	33.80	63	40.85	74	48.75	81	57.50	88		95.00	145.00	115.00	165.00
	1200	37.55	52	50.70	66	63.85	75	56.35	80	67.85	95	81.00	104	95.75	114		95.00	145.00	115.00	165.00
	2000	88.50	96	119.45	110	150.45	125	132.75	125	159.70	150	190.65	165	225.65	180		95.00	145.00	115.00	165.00
15000	3000	115.00	135	155.25	160	195.50	185	172.50	185	207.60	215	247.85	240	293.25	250		155.00	265.00	175.00	285.00
	4000	164.00	220	221.40	235	278.80	250	246.00	300	295.80	325	353.20	340	418.20	350		155.00	265.00	175.00	285.00
	400	19.55	48	26.40	60	33.25	66	29.30	72	35.50	87	42.35	92	49.85	99		105.00	165.00	125.00	185.00
	600	25.05	54	33.80	66	42.60	75	37.55	78	45.40	98	54.15	106	63.90	112		105.00	165.00	125.00	185.00
23000	1200	41.20	67	55.60	82	70.05	93	61.80	96	74.45	120	88.90	131	105.05	144		105.00	165.00	125.00	185.00
	2000	94.20	100	127.15	115	160.15	135	141.30	145	170.00	160	203.00	175	240.20	190		105.00	165.00	125.00	185.00
	3000	123.00	140	166.05	175	209.10	205	184.50	210	222.05	250	265.10	275	313.65	290		185.00	325.00	205.00	345.00
	4000	174.00	225	234.90	250	295.80	270	261.00	330	313.85	350	374.75	375	443.70	390		185.00	325.00	205.00	345.00
5000	400	23.45	63	31.60	88	39.75	100	35.15	93	42.60	123	50.75	135	59.65	150		115.00	185.00	135.00	205.00
	600	29.50	69	39.75	96	50.05	110	44.25	100	53.50	135	63.80	150	75.10	166		115.00	185.00	135.00	205.00
	1200	46.85	82	63.20	112	79.55	127	70.30	120	84.75	156	101.10	177	119.30	200		115.00	185.00	135.00	205.00
	2000	103.00	120	139.00	155	175.00	185	154.50	170	186.00	225	222.00	240	262.50	270		115.00	185.00	135.00	205.00
5000	3000	134.00	165	180.90	215	227.80	260	201.00	240	242.10	300	289.00	340	341.70	370		215.00	365.00	235.00	385.00
	4000	190.00	250	256.50	300	323.00	350	285.00	365	342.90	420	409.40	450	484.50	475		215.00	365.00	235.00	385.00

Type LG-118—Mounted on Insulating Bases

Volts	Amperes	Fig. 1		Fig. 2		Fig. 3		Fig. 4		Fig. 5		Fig. 6		Fig. 7		Fig. 8		Fig. 9		Fig. 10	
		Net Each	Ship. Wt. Lb.	Net Each	Ship. Wt. Lb.	Net Each	Ship. Wt. Lb.	Net Each	Ship. Wt. Lb.	Net Each	Ship. Wt. Lb.	Net Each	Ship. Wt. Lb.	Net Each	Ship. Wt. Lb.	Net Each	Ship. Wt. Lb.	Net Each	Ship. Wt. Lb.	Net Each	Ship. Wt. Lb.
5000	200	\$14.60	20	\$19.70	21	\$24.80	22	\$21.90	30	\$26.50	31	\$31.60	32	\$37.25	33		\$95.00	\$145.00	\$115.00	\$165.00	
	400	16.60	25	22.40	26	28.20	27	24.90	37	30.10	38	35.90	39	42.35	40		95.00	145.00	115.00	165.00	
	600	21.50	30	29.00	32	36.55	34	32.25	45	38.90	46	46.40	47	54.80	48		95.00	145.00	115.00	165.00	
	1200	36.55	40	49.35	43	62.15	46	54.85	60	66.00	66	78.80	67	93.20	70		95.00	145.00	115.00	165.00	
5000	2000	88.50	100	119.45	110	105.45	115	132.75	135	159.70	150	190.65	160	225.65	155		95.00	145.00	115.00	165.00	
	3000	115.00	120	155.25	125	195.50	135	172.50	160	207.60	165	247.85	175	293.25	180		155.00	265.00	175.00	285.00	
	4000	164.00	200	221.40	225	278.80	250	246.00	300	295.80	325	353.20	350	418.20	375		155.00	265.00	175.00	285.00	
	4000	190.00	250	256.50	300	323.00	350	285.00	365	342.90	420	409.40	450	484.50	475		215.00	365.00	235.00	385.00	

Prices of all switches include silver line-pressure contacts. Switches 1200 amperes and below can be supplied without the silver at no change in price.

For ratings above 23,000 volts, or 4000 amperes, and for

grouping of three switches on one base, write for information.

Double-blade, double-throw transfer, or single-throw, tandem transfer switches in ratings listed for Types LG-218 or LG-118 Switches are also available upon application.

G-E Control Mechanisms

For Types LG-218 and LG-118 Group-Operated Switches

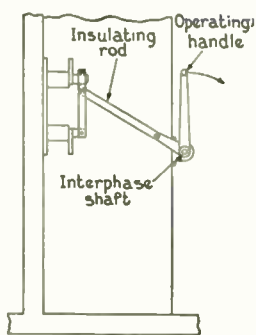


Fig. 1
Class 1 Mechanism

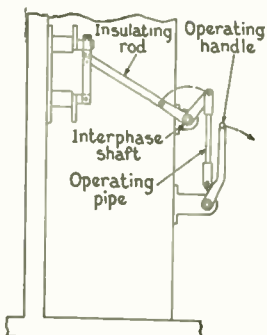


Fig. 2
Class 2 Mechanism

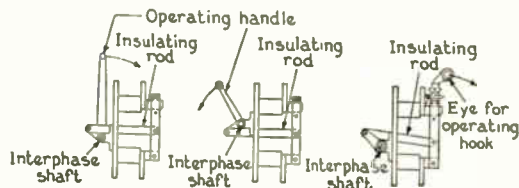
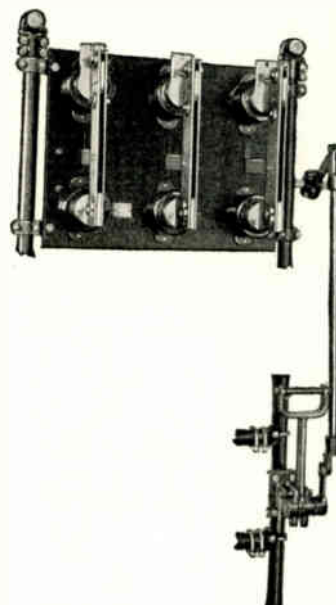


Fig. 3A
Class 1

Fig. 3B
Class 1

Fig. 3C
Class 1



Type LG-218 Disconnecting Switch with Class 2 Mechanism

Manually or motor-operated control mechanisms for operating Types LG-218 or LG-118 Disconnecting Switches simultaneously in groups of three or six are available as listed at the right. These mechanisms are divided into two classes as follows:

Class 1, direct-operated control with insulating connections from switch blades to an interphase shaft, with operating handle (for manual mechanism) mounted directly on interphase shaft (as illustrated in Fig. 1), or with an operating eye on the switch blade (Fig. 3C).

Class 2, indirect-operated control with insulating connections from switch blades to an interphase shaft, with operating handle remote from interphase shaft.

The prices listed on the preceding page include the mechanisms only (insulating connections from interphase shaft to switch blade, shaft, shaft bearings, cranks, operating pipe for Class 2, and operating handle). Switches are not included—these must be ordered from switch listings.

Accessories for Control Mechanisms for Group-Operated Switches

Auxiliary Switch, up to Four-Pole, Single-Throw with Operating Cranks.....	net each	\$45.00
For Additional Auxiliary Switch Stages, Single-Pole, Single-Throw Units.....	net each	4.00
Mounting Plate for Interphase Shaft.....	net each	10.00
Extra Bell Crank and Clevis.....	net each	10.00
Extension Shaft and Outboard Bearing.....	net each	10.00
Solenoid-Type Electrical Interlock.....	net each	50.00
Mechanical Interlock between Two Group Switches.....	net each	40.00
Mechanical Interlock between One Group Switch and Cell Door.....	net each	60.00
Mechanical Interlock between One Group Switch and Oil Circuit Breaker.....	net each	75.00
Mechanical Interlock between One Group Switch, Oil Circuit Breaker, and Cell Door.....	net each	100.00

Motor-Operated Control Mechanisms for Single-Throw Group Switches

For information and prices, consult your nearest Graybar office and warehouse.

Accessories for Indoor Disconnecting Switches

Barriers

Barriers prevent accidental contacts with live parts of switches. They are recommended for safety when disconnecting switches are mounted at heights less than those given in the table below, which lists the minimum vertical clearances from unguarded live parts to floor. Recommended by the National Electric Safety Code.

Circuit Voltage	Minimum Vertical Unguarded Clearance	Circuit Voltage	Minimum Vertical Unguarded Clearance
600	7' 8"	11,000	9'
2300	7' 9"	22,000	9' 3"
6600	7' 10"	33,000	9' 6"

Ebony asbestos compound barriers for use with Types LG-218 or LG-118 Indoor Disconnecting Switches, 5000 to 34,500 volts:

For Single-Throw Switch.....net each \$5.00

For Double-Throw Switch.....net each 8.00

When ordering, specify type and voltage of switch, method of mounting, and whether switches are single or double-throw.

Switch Hooks

A non-metallic, strong, lightweight hook made entirely of insulating material is recommended for use with hook-operated indoor disconnecting switches.

Where there is ample room for manipulation without danger of short circuit between live parts, a malleable-iron hook on a strong treated wood rod can be used.

Length Feet	NON-METALLIC		WOOD ROD, METAL HOOK	
	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.
4	\$8.00	8	\$6.00	15
6	10.00	12	8.00	18
8	12.00	16	10.00	20
10	14.00	20	12.00	22
12	16.00	24	14.00	24
14	18.00	30	16.00	26
16	23.00	36	21.00	28

G-E Current Limiting Power Fuse Units

Type EJ-1, for Indoor Service

The G-E Current-Limiting Power Fuse Unit is an outstanding development in interrupting devices. It is different from other fuse units in that it limits the short-circuit current to a value considerably below that usually encountered in short-circuit interruptions. The link melts on the rising current-wave, limiting further rise by the rapid increase of resistance, and causes complete interruption at the first current zero. The fuse unit acts as a current-limiting device in this manner on all currents of sufficient magnitude to melt the fuse link before the current reaches the peak of its initial normal short-circuit value.

The fuse unit consists of one or more fuse wires, wound on a heat-resisting core and surrounded by quartz granules enclosed in a glass tube with a metal ferrule at each end.

There is no discharge during interruption, no noise, and negligible gas pressure. The fuse units may be completely enclosed and mounted with the same electrical clearances used for noninterrupting devices of the same voltage rating, such as disconnecting switches, etc. This makes them particularly suitable for mounting in metal-enclosed switchgear,

Type EJO-1, for Outdoor Service

in any location where space economy is needed, or where expulsion fuses are not acceptable. Their high interrupting ratings are also strong recommendations for their use.

Two types are available: Type EJ-1 for indoor service only, and Type EJO-1 for outdoor service at all voltages and for indoor use at voltages above 5000.

The Type EJ-1 Indoor Unit is made in three tube sizes:

SIZE A. 1 $\frac{1}{8}$ -inch diameter ferrules, for use interchangeably with No. 197563 G-E 2300-volt potential-transformer cartridge fuses.

SIZE B. 1 $\frac{3}{8}$ -inch diameter ferrules, for use interchangeably with Type ES-1 G-E Spring-Operated Potential-Transformer Fuse Units.

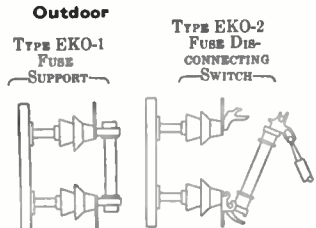
SIZE C. 2-inch diameter ferrules, the standard line of current-limiting fuse units.

The Type EJO-1 Outdoor Units are available only in the Size C, 2-inch diameter ferrule units.

Write to the nearest Graybar office and warehouse for more complete information.

Type for Indoor Service	Type for Outdoor Service	Tube Size	Dimension X Inches	Voltage	Interrupting Rating, Rms. Amperes	ONE-HOUR AND CONTINUOUS CURRENT RATINGS, AMPERES						Shipping Weight Pounds	
						0.5-0.5N Net Each	1-1N Net Each	2-2N Net Each	3-3N Net Each	7-5N Net Each	10-7N Net Each		15-10N Net Each
EJ -1	.....	A	4 $\frac{1}{4}$	*2500/4300	25000	.....	\$2.80	.....	.....	.....	.....	.....	1 $\frac{1}{4}$
EJ -1	.....	B	8 $\frac{1}{8}$	2500	40000	.....	5.50	\$5.50	\$5.50	.....	.....	.....	1
			8 $\frac{3}{8}$	5000	40000	\$5.50	5.50	5.50	5.50	.....	.....	.....	1
			11 $\frac{1}{2}$	15000	30000	6.50	6.50	6.50	6.50	.....	.....	.....	1 $\frac{1}{2}$
EJ -1	.....	C	14 $\frac{1}{8}$	23000	25000	7.00	7.00	7.00	7.00	.....	.....	.....	1 $\frac{3}{4}$
			7	2500	80000	.....	8.00	8.00	8.00	\$8.50	\$9.00	\$9.50	3
			9	5000	80000	8.75	8.75	8.75	8.75	9.25	9.75	10.25	3 $\frac{1}{4}$
			12	2500	80000	.....	9.50	9.50	9.50	10.00	10.50	11.00	3 $\frac{3}{4}$
EJO-1	EJO-1	C	12	5000	80000	9.50	9.50	9.50	9.50	10.00	10.50	11.00	3 $\frac{3}{4}$
			12	7500	80000	9.50	9.50	9.50	9.50	10.00	10.50	11.00	3 $\frac{3}{4}$
			15	15000	60000	11.25	11.25	11.25	11.25	11.75	12.25	12.75	4 $\frac{1}{2}$
EJO-1			21	23000	40000	13.50	13.50	13.50	13.50	14.00	14.50	15.00	5 $\frac{1}{2}$

*4300-volt, three-phase grounded neutral.



G-E Fuse Supports and Fuse Disconnecting Switches

Types EKO-1 and EKO-2, for Outdoor Service

Types EK-1 and EK-2, for Indoor Service

For Types EJ-1 and EJO-1 G-E Current-Limiting Fuse Units—Size C

For fuse-disconnecting switch operation, use non-metallic switch hooks indoors, and super-insulated hooks outdoors.

In ordering, give phase-to-phase voltage and frequency.

Volts	Type of Fuse Unit Used	Outdoor		Indoor	
		Net Each	Ship. Wt. Lb.	Net Each	Ship. Wt. Lb.
2500	EJO-1	\$15.00	50	\$25.20	60
5000	EJO-1	15.00	50	25.20	60
7500	EJO-1	15.00	50	25.20	60
15000	EJO-1	19.25	70	29.30	78
23000	EJO-1	22.25	85	32.70	93

Volts	Type of Fuse Unit Used	Type of Insulator Used	Indoor						Outdoor					
			TYPE EK-1 FUSE SUPPORT		TYPE EK-2 FUSE DISCONNECTING SWITCH		TYPE EK-1 FUSE SUPPORT		TYPE EK-2 FUSE DISCONNECTING SWITCH					
			Net Each	Ship. Wt. Lb.	Net Each	Ship. Wt. Lb.	Net Each	Ship. Wt. Lb.	Net Each	Ship. Wt. Lb.	Net Each	Ship. Wt. Lb.		
2500	EJ -1	5KV Porc.	\$13.00	20	\$17.85	24	\$22.70	25	\$19.50	33	\$26.35	38	\$33.15	39
2500	EJ -1	7.5KV	14.00	25	19.20	32	24.40	35	20.50	39	27.70	45	34.85	47
5000	EJ -1	5KV Porc.	13.00	25	17.85	27	22.70	29	19.50	39	26.35	41	33.15	42
5000	EJ -1	7.5KV	14.00	32	19.20	38	24.40	41	20.50	45	27.70	53	34.85	53
7500	EJO-1	7.5KV	14.00	36	19.20	44	24.40	44	20.50	50	27.70	57	34.85	56
15000	EJO-1	15KV-A-2	15.50	45	21.05	51	26.60	54	23.00	59	31.05	63	39.10	66
23000	EJO-1	23KV-A-2	19.00	57	25.55	74	32.10	81	27.00	70	36.45	85	45.90	95

G-E Indoor Insulators

To obtain uniformity of indoor insulator units for disconnecting switches, fuse supports, etc. N. E. M. A. has adopted standards covering: dry-flashover ratings; construction classes, distinguished by the method of securing metal parts; and average ultimate cantilever-strength classes.

G-E Insulator Units meet the N.E.M.A. standards, as shown in the table below. A 5000-volt porcelain insulator unit (no N.E.M.A. class) has been developed for use in G-E indoor devices. Cantilever strength, 750 pounds, 1 inch above tap; and 500 pounds, 2½ inches above tap.

The insulator units are of best-quality wet-process porcelain, and are available in ratings of 5000, 7500, 15000, 23000 and 34500 volts. These insulators are designed for mounting in air and operating at temperatures not exceeding 100°C.

Where insulators are desired for mounting in oil or for temperatures higher than 100°C., consult the nearest Graybar office and warehouse.

All of the insulator units (except the 5000-volt) are N.E.M.A. Class A, that is, with metal inserts in top and bottom. Disconnecting switches as listed include insulators as follows:
 All Voltages, 400 to 1200 Amperes..... Class A-2
 All Voltages, 2000 Amperes..... Class A-3
 All Voltages, above 2000 Amperes..... Class A-4

In ordering insulators for busbar supports, etc., the corresponding classes should be used. Unless otherwise specified, Class A-2 will be furnished.

For insulator units of cantilever Classes 5, 7 and 9, consult the nearest Graybar office and warehouse.

Volts	Dry Flash-over Volts	Measured at Inches above Top	AVERAGE ULTIMATE CANTILEVER STRENGTH, POUNDS						-5000-VOLT-		-CLASS A-2-		-CLASS A-3-		-CLASS A-4-		OTHER CLASSES	
			5000-Volt	Class 2	Class 3	Class 4	Class 5	Class 7	Class 9	Net Each	Approx. Shp. Wt. Lb.	Net Each	Approx. Shp. Wt. Lb.	Net Each	Approx. Shp. Wt. Lb.	Net Each		Approx. Shp. Wt. Lb.
5000	30000	1	750						\$2.00	5								
		2½	500						2.00	5								
7500	45000	1		1500	2500	3950	4800	9400	13200		\$2.50	9	\$4.00	17	\$6.00	29		
		2½		900	1500	2600	3500	6950	10600		2.50	9	4.00	17	6.00	29		
		5		450	850	1500	2200	3900	6800		2.50	9	4.00	17	6.00	29		
		7½		200	550	1000	1450	2600	4500		2.50	9	4.00	17	6.00	29		
15000	60000	1		1300	2250	3700	4650	8700	12500		3.00	12	4.50	20	6.50	31		
		2½		850	1450	2500	3400	6800	10200		3.00	12	4.50	20	6.50	31		
		5		450	850	1500	2200	3900	6800		3.00	12	4.50	20	6.50	31		
		7½		200	550	1000	1450	2600	4500		3.00	12	4.50	20	6.50	31		
23000	75000	1		1100	2050	3300	4400	8350	11800		4.50	19	6.50	26	9.00	41		
		2½		750	1350	2350	3250	6600	9700		4.50	19	6.50	26	9.00	41		
		5		450	850	1500	2200	3900	6800		4.50	19	6.50	26	9.00	41		
		7½		200	550	1000	1450	2600	4500		4.50	19	6.50	26	9.00	41		
34500	100000	1		800	1600	2800	4000	7600		8.70	25	11.40	36	14.40	55			
		2½		600	1200	2100	3000	6250		8.70	25	11.40	36	14.40	55			
		5		450	850	1500	2200	3900		8.70	25	11.40	36	14.40	55			
		7½		200	550	1000	1450	2600		8.70	25	11.40	36	14.40	55			

On Application

Insulators listed above are with base fittings for mounting on flat surface. If desired for mounting on 1¼-inch pipe, add \$1.00 net each insulator for fitting.

G-E Indoor Busbar Clamps and Busbar Terminals

Busbar clamps provide the most economical and easiest means for tap-off connections or splices in busbars. The outstanding feature of G-E indoor clamps is the circular pad, cast integrally in the face of the clamping surface. These pads produce uniform pressure-contact between the clamped surfaces. For d.c. service, malleable-iron clamps are used. For a.c. service not exceeding 2000 amperes, one malleable

iron and one nonmagnetic metal clamp per connection are recommended; for higher a.c. currents, both clamps of each pair should be nonmagnetic.

To facilitate identification, the malleable iron clamps are given a dark blue finish while the nonmagnetic clamps are given a natural bronze or aluminum finish.

Busbar Clamps

Triangular Clamps, 3-Bolt

Width of Bar (Inches)	Bus	Tap	BOTH CLAMPS OF MALLEABLE IRON		ONE CLAMP MALLEABLE IRON, ONE NON-MAGNETIC METAL		BOTH CLAMPS OF NON-MAGNETIC METAL		Width of Bus In.	Size Cable	BOTH CLAMPS OF MALLEABLE IRON		ONE CLAMP MALLEABLE IRON, ONE NON-MAGNETIC METAL		BOTH CLAMPS OF NON-MAGNETIC METAL	
			List per Pair	Approx. Shp. Wt. Lb.	List per Pair	Approx. Shp. Wt. Lb.	List per Pair	Approx. Shp. Wt. Lb.			List Complete	Shp. Wt. Lb.	List Complete	Shp. Wt. Lb.	List Complete	Shp. Wt. Lb.
2	2		\$1.60	2	\$1.60	1½	\$2.00	1	2	0 B. & S.	\$1.90	2	\$1.90	1½	\$2.30	1
2	3		1.80	2	1.80	1½	2.30	1	2	0000 B. & S.	1.90	2	1.90	1½	2.30	1
3	2		1.70	3	1.70	1½	2.20	1	2	250 MCM.	2.10	2½	2.10	2	2.50	1½
3	3		1.80	3	1.80	2½	2.30	2	2	400 MCM.	2.40	2½	2.40	2	2.80	1½
3	4		2.40	4	2.40	2½	3.10	2	3	0 B. & S.	2.10	3	2.10	2½	2.60	2
4	2		2.00	4	2.00	3½	2.80	3	3	0000 B. & S.	2.10	3	2.10	2½	2.60	2
4	3		2.30	4	2.30	3½	3.00	3	3	250 MCM.	2.40	3½	2.40	3	2.90	2½
4	4		2.40	4	2.40	3½	3.10	3	3	400 MCM.	2.70	3½	2.70	3	3.20	2½

Rectangular Clamps, 4-Bolt

2	2		\$2.00	3	\$2.00	3	\$2.60	3	3	1000 MCM.	3.30	4½	3.30	4	3.80	3½
2	3		2.20	3	2.20	3	2.80	3	3	1500 MCM.	3.80	5	3.80	4½	4.30	4
2	4		2.70	5	2.70	4½	3.50	4	3	2000 MCM.	4.80	6	4.80	5½	5.30	5
3	2		2.20	3	2.20	3	2.80	3	4	0 B. & S.	2.80	4	2.80	3½	3.50	3
3	3		2.30	5	2.30	4½	2.90	4	4	0000 B. & S.	2.80	4	2.80	3½	3.50	3
3	4		2.70	6	2.90	5	3.80	5½	4	250 MCM.	3.00	4½	3.00	4	3.70	3½
4	2		2.70	5	2.70	4½	3.50	4	4	400 MCM.	3.40	4½	3.40	4	4.10	3½
4	3		2.90	6	2.90	5	3.80	5½	4	800 MCM.	3.70	5	3.70	4½	4.40	4
4	4		3.10	7	3.10	6½	3.90	6	4	1000 MCM.	4.10	5½	4.10	5	4.80	4½
4	6		7.10	10	7.10	9½	9.40	9	4	1500 MCM.	4.70	6	4.70	5½	5.40	5
6	4		7.10	10	7.10	9½	9.40	9	4	2000 MCM.	5.90	7	5.90	6½	6.60	6

Triangular-Clamp Bus Terminals

*The prices include two clamps with bolts to accommodate a total of three bars ¼ inch thick. Longer bolts will be furnished, when specified with the order, at no increase in price. Nonferrous bolts, nuts, and washers also will be furnished at no increase in price if specified with the order. Fillers for spaces between bus laminations, ¼ inch thick, are available at 30 cents each net.

G-E Indoor Bus-Support and Conductor Fittings

Fittings for indoor bus supports are available for round conductors and for rectangular bars.

For round conductors, there are two classes: top half of conductor fitting (movable clamp) made of nonmagnetic metal and the fixed clamp (lower half of conductor fitting) made of malleable iron, and with both movable and fixed clamps of nonmagnetic metal.

For rectangular bars, edgewise and flat fittings are made with both parts of malleable iron for d.c. service, half malleable iron and half nonmagnetic metal for a.c. service up to 2000 amperes, or all nonmagnetic metal for higher currents. Any one of these three styles can be furnished with triangular three-bolt or rectangular four-bolt clamps.

The clamps for the rectangular bars are the same as those for busbar clamps, with circular pressure pads. This is an exclusive G-E feature which compensates for uneven tightening of the clamping bolts.

Steel bolts are regularly supplied to accommodate three laminations of 1/4-inch bus and two sets of 1/4-inch fillers. These bolts are threaded so that clamps can be tightened to one lamination. Longer bolts will be furnished at no increase in price if requested with the order. Nonferrous bolts will be furnished at no increase in price if specified with the order.

Add the price of insulator (from preceding page) to the price of the fitting listed at the right for a complete bus support. If mounting is desired for 1 1/4-inch pipe, add \$1.00 for base adapter.

Fittings for Round Conductors

Cable O.D. over Insulation Inches	I.P.S. Tubing Inches	Half Malleable Iron, Half Non-magnetic Metal Net Each	All Non-Magnetic Metal Net Each
Up to 1 3/16	Up to 1/2	\$2.00	\$3.15
7/8 to 1 5/16	3/4 to 1	2.60	3.65
1 3/8 to 1 11/16	1 1/4 and 1 1/2	3.35	4.50
2 to 2 3/8	2	3.75	5.00
2 7/16 to 3 1/2	2 1/2	4.50	8.50
2 19/16 to 3 1/2	3	5.00	9.00
.....	3 1/2	6.00	11.50
.....	4	6.50	12.00

Fittings for Rectangular Bars

In ordering, specify whether bars are to be mounted on edge or flat.

Triangular, 3-Bolt

Size Inches	All Malleable Iron Net Each	Half Malleable Iron, Half Non-magnetic Metal Net Each	All Non-Magnetic Metal List Each
2x1/4	\$3.25	\$3.25	\$4.60
3x1/4	3.70	3.70	4.95
4x1/4	4.65	4.65	6.00
5x1/4	5.40	5.40	7.00

Rectangular, 4-Bolt

2x1/4	\$3.75	\$3.75	\$5.25
3x1/4	4.20	4.20	5.70
4x1/4	5.30	5.30	6.85
5x1/4	6.20	6.20	8.00

G-E Outdoor Switching Equipment Outdoor Stations

Available for any application; but for small installations consisting on one incoming or outgoing line and a single bank of transformers, a line has been standardized to eliminate development expense incurred on special designs and to expedite shipment.

Data will be furnished on request.

G-E Outdoor Air Switches

*Types TA-1, TA-2 and TA-6 Horn Gap Switches

The complete line of switches identified with the type letters TA is made for all classes of outdoor service. This type is group-operated and of tilting-insulator construction. The application of these switches is most advantageous where maintenance of service and reliable switching equipment are of great importance. Features of the Type TA Switches are:

Spring-pressure line contacts.

All copper current-carrying parts.

Coiled buffer springs assist switch operation.

Corrosion-resisting pins prevent rusting and binding.

All steel and malleable iron parts hot-dip galvanized.

Standard cemented cap-and-pin insulators.

Insulators interchangeable with those on other outdoor devices of same rating.

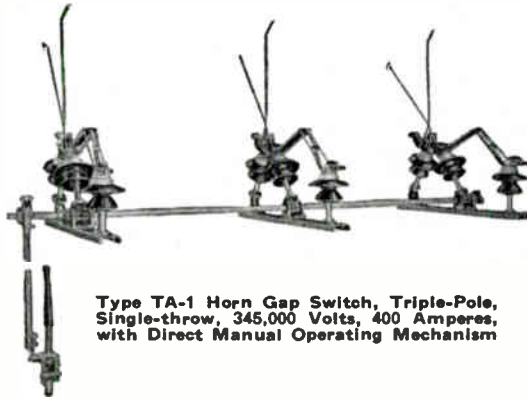
Manual or motor mechanism can be padlocked in either open or closed position.

Arc horns prevent burning of contacts during switch operation.

The TA switches may be had in single, double, triple, or four-pole groups, the poles being interconnected by a common shaft to provide simultaneous operation of all the poles from a single mechanism.

The switch parts consist of the blade, a short copper bar of ample cross section; the stationary contact, made up of two large semi-cylindrical copper blocks floating against heavy springs that force them against the blade for line-pressure contacts; and the tilting insulator which carries the blade. Flexible, woven wire copper braids provide full copper current carrying from all fixed to movable parts.

Type TA-1. A horizontally mounted horn-gap switch with vertical break. It has three insulators; one for the in-



Type TA-1 Horn Gap Switch, Triple-Pole, Single-throw, 345,000 Volts, 400 Amperes, with Direct Manual Operating Mechanism

coming cable connection, the central insulator which tilts, and one for the contact (as illustrated).

Type TA-2. For vertical mounting; not provided with horn gaps.

Type TA-6. Similar to the Type TA-1, except that it is provided with only two insulators, namely the front contact and the tilting. The tilting insulator connection is looped over to the dead-ending line insulator.

All prices are for 3-pole switches, including manual operating mechanism with a maximum of one offset bearing, and

including inter-connecting pipe or equivalent square shafting. For prices of other than 3-pole switches, refer to the nearest Graybar office and warehouse.

*TYPE TA-1,

3 INSULATORS PER POLE WITH HORN GAP, OR *TYPE TA-2 WITHOUT HORN GAP

*TYPE TA-6 2 INSULATORS PER POLE

Amperes	Volts	Net Each	Approx. Ship. Wt. Lb.	*TYPE TA-1, 3 INSULATORS PER POLE WITH HORN GAP, OR *TYPE TA-2 WITHOUT HORN GAP		*TYPE TA-6 2 INSULATORS PER POLE	
				Net Each	Approx. Ship. Wt. Lb.	Net Each	Approx. Ship. Wt. Lb.
400	7500	\$237.00	300	\$224.00	250		
	15000	273.00	400	255.00	300		
	23000	292.00	775	272.00	675		
	33000S	337.64	925	304.76	725		
	34500	347.00	1025	311.00	825		
600	7500	262.00	570	246.00	460		
	15000	300.00	700	288.00	600		
	23000	321.00	800	297.00	700		
	33000S	375.64	950	336.76	750		
	34500	385.00	1050	343.00	850		
	46000	504.00	1500	449.00	1150		
	66000S	733.28	1875	655.52	1450		
	69000	770.00	1975	680.00	1525		
	88000S	1184.28	2000	.....	.....
	110000S	1429.64	2475	.....	.....

*7500 and 15000-volt, 400-ampere switches only are designated Types TA-101, TA-102 or TA-106

Continued

G-E Outdoor Air Switches

Continued

Motor Operating Mechanisms

Prices of group-operated air switches include manual mechanism with a maximum of one offset bearing, vertical operating pipe and, when included in the order, pipe couplings and guide plates. Prices of motor operating mechanism include the additional equipment to add to the manual mechanism for electrical operation. Prices of the motor operating mechanism also include one 4-stage, 4-pole auxiliary switch and necessary control relays, but no control switch; control switch must be ordered separately. For additional auxiliary stages, add these at \$4.00 net each.

Range of Voltage Rating, Kv.	Current Rating of Switch, Amp.	MANUAL MECHANISM FOR 1, 2 OR 3-POLE SWITCHES		Motor Mechanism for 1, 2, or 3-Pole Switches
		*Direct with Single Outboard Bearing, Net Each	†Indirect with Outboard Bearing and Auxiliary Bearing, Net Each	
7½ - 69	400-600	.....	.....	†\$75.00 \$350.00
88S-110S	600	.....	.....	†\$125.00 450.00

*Included in switch price.
†Add \$25 to price of switch.
‡Add \$50 to price of switch.

For 4, 5 or 6-pole mechanism, or for double-throw switch, refer to the nearest Graybar office and warehouse.

Types RK-6 and RH-6 Switches

These are triple-pole, single-throw, group-operated outdoor air switches of the rotating-insulator type—two insulators per pole.

Type RK-6. Furnished without horn gaps, and used as disconnecting switches only.

Type RH-6. Provided with horn gaps.

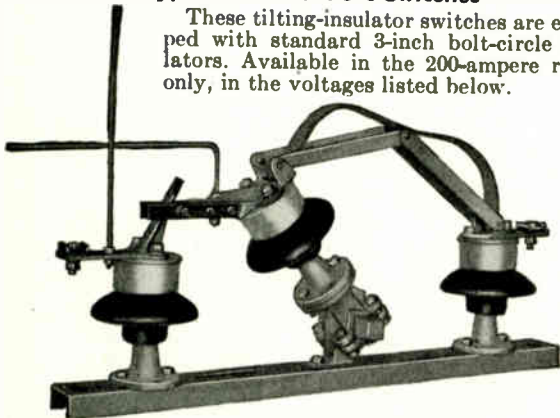
Prices include manual mechanism with a maximum of one offset bearing. See above for prices of motor operating mechanism.

The prices below are for triple-pole switches only. For other pole combinations, refer to the nearest Graybar office and warehouse.

Amp.	Volts	Net Each	Approx. Ship. Wt. Lb.	Amp.	Volts	Net Each	Approx. Ship. Wt. Lb.
400	7500	\$203.00	280	600	23000	\$267.00	430
	15000	231.00	410		33000S	302.76	465
	23000	245.00	430		34000	309.00	540
	33000S	273.76	465		46000	400.00	730
600	34500	280.00	540	66000S	579.52	960	
	7500	223.00	280	69000	604.00	1010	
	15000	251.00	410	.....	.....	.....	.....

Types TC-1 and TC-6 Switches

These tilting-insulator switches are equipped with standard 3-inch bolt-circle insulators. Available in the 200-ampere rating only, in the voltages listed below.



Type TC-1 Horn-Gap Switch for Horizontal Mounting, 15 Kv., 200 Amperes, Single-Pole Unit

Amp.	Volts	Type TC-1 With 3 Insulators per Pole	Type TC-6 With 2 Insulators per Pole	Type TC-1 With 3 Insulators per Pole	Type TC-6 With 2 Insulators per Pole
		Net Each	Net Each	Net Each	Net Each
200	7500	\$150.00	\$124.00	200	33000S \$257.64
	15000	181.00	150.00		34500 267.00
	23000	222.00	183.00		.....

Prices include triple-pole switches with manual direct mechanism either with or without a single outboard bearing. If indirect mechanism with auxiliary bearing is required, add \$10 to above net prices.

Type TB-101 Switches

This is a group-operated tilting-insulator switch for low revenue producing installations. It is especially suitable for pole top mounting on rural lines, distribution circuits with light loads, and small industrial applications. The insulators are of the 2-inch, bolt-circle, rural type. The switch parts are of high quality, line-pressure contact, with non-corrodible hardware parts, and horn gaps.

Amperes.....	200	400	200	400
Volts.....	7500	7500	15000	15000
Type TB-101..... net each	\$115.00	123.00	140.30	150.10

Prices include triple-pole switches with direct mechanism (with single outboard bearing and guide plates when required and vertical operating pipe. If indirect mechanism with auxiliary bearing is required, add \$10 to above net prices.

Types FA-101 and FC-2 Hook-Operated Switches

These switches are made in single-pole units, single and double-throw, in the voltage and current ratings listed.

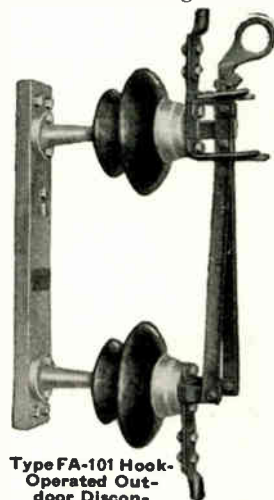
They are suitable for disconnecting purposes and should not be used to open load currents. The switch parts are mounted on G-E standard-type insulators.

The blades consist of two hard-drawn copper sections mounted back-to-back to form a blade of great mechanical strength. On switches rated above 23,000 volts, the blades are of truss-like formation. The blades slide over a tongue-like contact, and pressure is maintained by phosphor-bronze spring washers, providing maximum conductivity.

Type FA-101. This switch is for current ratings of 400 amperes and above. The tongue-like contacts and the contact portions of the blades have silver surfaces.

Type FC-2. A 200-ampere switch of similar characteristics and the same voltage ranges as the Type FA-101.

All switches are provided with blade latches, blade guides, and operating eye.



Type FA-101 Hook-Operated Outdoor Disconnecting Switch, 34500 Volts, 600 Amperes

Type	Amperes	Volts	SINGLE-POLE SINGLE THROW		SINGLE-POLE DOUBLE THROW	
			Approx. Net Each	Ship. Wt. Lb.	Net Each	Approx. Ship. Wt. Lb.
FC-2	200	7500	\$18.25	55	\$27.40	95
		15000	24.10	75	36.25	130
		23000	28.00	85	42.00	145
		33000S	39.92	110	59.88	180
		34500	42.00	130	63.00	215
§FA-101	400	7500	28.00	55	42.00	80
		15000	33.50	78	50.50	115
		23000	35.50	88	54.00	132
		33000S	45.42	110	68.38	165
		34500	47.50	134	71.50	190
§FA-101	600	7500	31.50	60	47.50	90
		15000	37.00	83	55.00	123
		23000	40.00	94	60.00	141
		33000S	49.92	110	74.88	175
		34500	52.00	115	78.00	200
§FA-101	1200	46000	65.00	198	97.50	300
		66000S	100.34	243	150.76	367
		69000	108.50	265	163.00	405
		7500	55.50	83	83.50	117
		15000	62.00	105	93.00	150
		23000	66.50	117	99.50	168

§Prices of these switches include silver line-pressure contacts. Switches can be supplied without the silver at no reduction in price.

G-E Outdoor Air Switches

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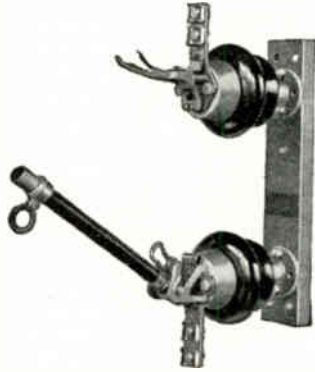
Types EF-1 and EF-2 Switches and Type FR-2 Resistors

Type EF-1. This is a combined fuse cutout and disconnecting switch to protect circuits against short circuit currents. It consists of a galvanized steel channel base, insulators, and a hinge-and-contact assembly for mounting a Type EG-1 Fuse Unit.

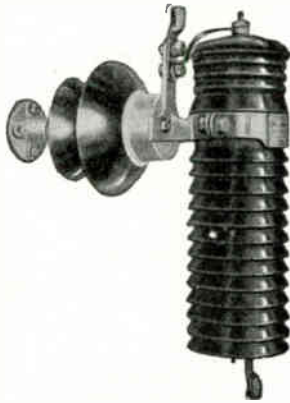
Type EF-2. This switch is similar to the Type EF-1 plus the drop-out feature, i.e., when the fuse blows, the fuse opens to a drop-out position as illustrated.

Type FR-2. The amount of electric energy which a large electric system can deliver may be of such proportions that it requires some form of current-limiting resistor between the main bus and the connected auxiliary apparatus. To meet this application for outdoor installations of potential transformers, the Type FR-2 Resistor, in combination with the EF-1 Fuse-Disconnecting Switch, has proved most successful. The Type FR-2 Resistor is a dry-type element, housed in a porcelain insulator. Its resistance is such that it introduces only negligible error, yet it is of ample value and possesses thermal capacity to withstand successfully short circuit on the potential transformer. The Type FR-2 may be had alone for individual mounting, or in combination with the Type EF-1, as listed below.

For ratings not listed, consult the nearest Graybar office and warehouse.



Type EF-2 Fuse-Disconnecting Drop-Out Switch, 15,000 Volts



Type FR-2 Current-Limiting Resistor, Mounted on Insulator

Types FD-102 and FD-103 Hook-Operated Switches

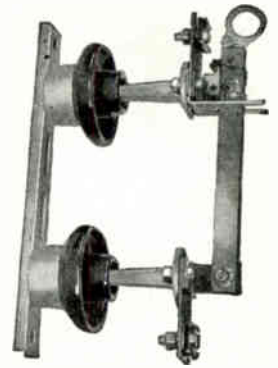
These switches are made in single-pole, single-throw units, and are particularly applicable to rural lines, low-voltage distribution circuits with light loads, railroad signal service, etc. They made in ratings of 7500S and 15,000S volts, 200 and 400 amperes. They are suitable for disconnecting purposes only, and should not be used to open load currents.

The switch parts are mounted on 2-inch bolt-circle, porcelain insulators.

Switches are of the laminated blade, tongue-type, contact construction.

Type FD-102. This switch is mounted on top of the insulators.

Type FD-103. This switch is underhung as illustrated. All switches are furnished with blade latches.



Type FD-103 Hook-Operated, Outdoor Disconnecting Switch, 15,000 Volts, 200 Amperes

Amperes	Volts	SINGLE-POLE SINGLE-THROW		SINGLE-POLE DOUBLE-THROW	
		Net Each	Approx. Ship. Wt. Lb.	Net Each	Approx. Ship. Wt. Lb.
200	7500S	\$10.95	30	\$16.40	50
400	7500S	16.40	30	24.60	50
200	15000S	12.95	35	19.45	60
400	15000S	18.40	35	27.60	60

Type EG-1 Expulsion Fuse Units

The type EG-1 Fuse is of the spring-expulsion type, providing rapid operation, high interrupting ability, and positive operating performance. Available in current ratings as included in the price list below; higher voltage ratings furnished on request.

Each fuse unit is stamped with two ratings, i.e., 30N-50. The rating followed by the letter N is the 100 per cent rating; the other is the current the fuse will carry for one hour.

Volts	TYPE EF-1 FUSE DISCONNECTING SWITCH WITHOUT FUSE		TYPE FR-2 RESISTOR ON INSULATOR		COMBINATION OF TYPES FR-2 RESISTOR AND FUSE DISCONNECTING SWITCH, WITHOUT FUSE UNITS		
	*Net Each	Approx. Ship. Wt. Lb.	Net Each	Approx. Ship. Wt. Lb.	Type EF-1 Net Each	Type EF-2 Net Each	Approx. Ship. Wt. Lb.
7500	\$22.20	57	\$34.15	50	\$55.00	\$60.00	114
15000	26.30	90	36.00	65	61.00	66.00	162
23000	29.70	102	42.50	80	70.00	75.00	190
33000S	37.40	124	.....	..	85.20	90.20	300
34500	40.00	141	.....	..	90.00	95.00	318
46000	51.00	222	.....	..	118.00	123.00	490
66000S	65.80	264	.....	..	154.70	159.70	600
69000	76.00	330	.....	..	170.00	175.00	708

For Type EF-2 Drop-Out Switch, add to price of Type EF-1: Volts..... 7500-23000 33000-69000
*Type EF-2, Add.....net each \$8.00 10.00

Amperes	Pot. Transformer	7500	15000	23000	34500	46000	69000
		Volts Net Each	Volts Net Each	Volts Net Each	Volts Net Each	Volts Net Each	Volts Net Each
3N-3	3	\$3.50	\$4.25	\$4.75	\$5.75	\$7.00	\$11.00
5	5	3.50	4.25	4.75	5.75	7.00	11.00
8N-10	10	3.50	4.25	4.75	5.75	7.00	11.00
10N-15	15	3.50	4.25	4.75	5.75	7.00	11.00
15N-25	25	3.50	4.25	4.75	5.75	7.00	11.00
20N-30	30	4.00	5.00	5.50	6.50	8.00	13.00
25N-40	40	4.00	5.00	5.50	6.50	8.00	13.00
30N-50	50	4.00	5.00	5.50	6.50	8.00	13.00
40N-60	60	4.75	5.75	6.25	7.75	9.50	16.00
50N-75	75	4.75	5.75	6.25	7.75	9.50	16.00
75N-100	100	4.75	5.75	6.25	7.75	9.50	16.00
100N-150	150	5.75	6.65	8.25	10.00	12.50	19.00
130N-200	200	6.75	7.75	9.50	12.00	15.50	21.00

G-E Switch Hooks

Superinsulated switch hooks, with or without rain shield and grounding device, are available for use with outdoor hook-operated air switches.

The lower portion of the rod is turned from carefully selected, kiln-dried, straight-grained wood, treated to assure insulating properties. The upper portion is a tubular section made of an insulating compound. The hook is an aluminum-alloy casting.

This construction produces a switch hook with excellent insulating qualities and mechanical strength, yet light enough to be handled easily by the average operator.

Length Feet	WITHOUT RAIN HOOD AND CABLE		WITH RAIN HOOD AND CABLE	
	Net Each	Approx. Ship. Wt., Lb.	Net Each	Approx. Ship. Wt., Lb.
4	\$6.00	10	.....	..
6	8.00	14	.....	..
8	10.00	18	\$13.00	18
10	12.00	25	15.00	25
12	14.00	30	17.00	30
14	16.00	35	19.00	35
16	21.00	40	24.00	40
18	29.00	45	32.00	45
20	34.00	50	37.00	50
22	40.00	55	43.00	55

**G-E Outdoor Switching Equipment
Insulator Units**



G-E Insulator Units for outdoor devices are the result of many years of research in the ceramic and electrical industries. The porcelain used in their manufacture is of the best quality that can be produced. These insulators belong to the class known as the cemented cap and pin type. They are standardized in ratings of 7500 to 230,000 volts, and have high mechanical and dielectric strength. The caps and pins, from 7500 to 69,000 volts inclusive have 3-inch bolt centers except those for

heavy-duty applications where N.E.M.A. specifies a 5-inch bolt circle insulator, 7500 to 34,500 volts. Insulators for higher than 69 kv. are provided with 5-inch bolt circles.

G-E Insulators meet all the requirements of N.E.M.A. and the A.I.E.E. Standardization Rules.

Post-type insulators with ratings 7.5 to 69 kv. can be furnished at no extra charge.

No.	Kv.	Group	Dry Flashover Volts	Wet Flashover Volts	Locke No.
6009910P1	7.5	A	60,000	35,000	10200
6009911P1	15	A	85,000	50,000	29150
6009912P1	23	A	100,000	70,000	29151
2549594G1	33-S	A	120,000	80,000	10100
6009913P1	34.5	A	140,000	100,000	10455
6009914P1	46	A	165,000	125,000	9153
1520711G1	66-S	A	200,000	150,000	9154
2-6009915P1	69	A	225,000	180,000	2-23511
3-1568456	88-S	A	280,000	180,000	3-8888
2-1523294	92-S	A	280,000	190,000	2-7785
4-1568456	110-S	A	350,000	235,000	4-8888

Prices on application.

G-E Outdoor Bus Supports and Fittings

Bus supports for outdoor stations are made up of standard insulators with fittings listed below, and completely assembled as illustrated. All fittings of malleable iron are hot-dip galvanized. The conductor clamps are nonferrous, preventing the establishment of magnetic circuit, and eliminating the danger of heating at the point of support. Nonferrous bolts, nuts, and lock washers will be furnished if specified with the order at no increase in price.

Fig. 1 Flat Conductor Fittings Only—For Bar Flat on 3-Inch Bolt Circle

Size Bars Inches	Half Galvanized Iron, Half Non-Magnetic Metal Net Each	All Non-Magnetic Metal Net Each	Approx. Ship. Wt. Lb.
2x1/4	\$3.25	\$4.60	3
3x1/4	3.70	4.95	3
4x1/4	4.65	6.00	3

Fig. 2 Flat Conductor Fittings Only—For Bar Edgewise on 3-Inch Bolt Circle

Size Bars Inches	Half Galvanized Iron, Half Non-Magnetic Metal Net Each	All Non-Magnetic Metal Net Each	Approx. Ship. Wt. Lb.
2x1/4	\$3.25	\$4.60	4
3x1/4	3.70	4.95	4
4x1/4	4.65	6.00	4

Fig. 3 Flat Conductor Fittings Only—For Bars Flat, Spaced 3 1/2 In. Apart on 3-Inch Bolt Circle

Size Bars Inches	Half Galvanized Iron, Half Non-Magnetic Metal Net Each	All Non-Magnetic Metal Net Each	Approx. Ship. Wt. Lb.
4x1/4	\$6.00	\$7.80	6

Fig. 4 Flat Conductor Fittings Only—For Bars Edgewise, Spaced 3 1/2 In. Apart on 3-In. Bolt Circle

Size Bars Inches	Half Galvanized Iron, Half Non-Magnetic Metal Net Each	All Non-Magnetic Metal Net Each	Approx. Ship. Wt. Lb.
4x1/4	\$6.00	\$7.80	8

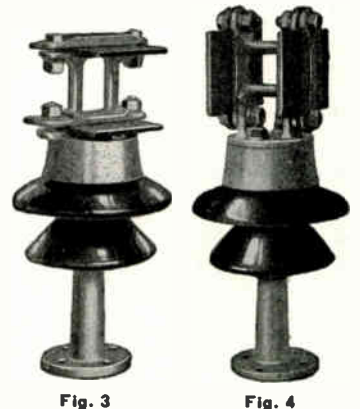
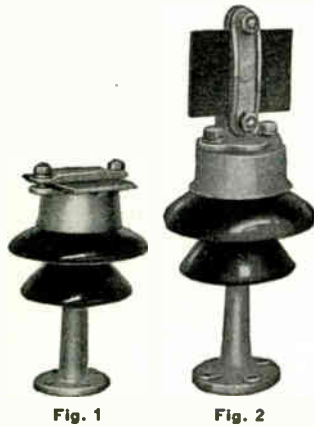


Fig. 5

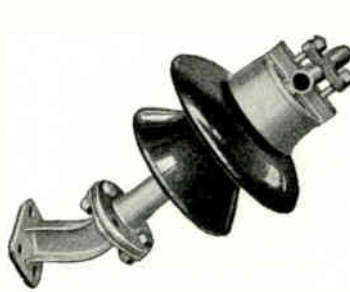


Fig. 6



Fig. 7



Fig. 8

Fig. 5 Round Conductor Fittings Only for 3-Inch Bolt Circle

No.	Wire or Cable Cir. Mils.	SIZE OF CONDUCTOR I.P.S. Tube Inches	Half Galvanized Iron, Half Non-Magnetic Metal Net Each	All Non-Magnetic Metal Net Each	Approx. Ship. Wt. Lb.
2 to 250,000		1/2	\$2.00	\$3.15	3
300 to 500,000		3/4	2.00	3.15	3
600 to 800,000		1	2.60	3.65	3
1000 to 1,250,000		1 1/4	2.60	3.65	4
		1 1/2	3.35	4.50	4
		2	3.75	5.00	4
		2 1/2	4.50	8.50	4
		3	5.00	9.00	4
		3 1/2	6.00	11.50	4
		4	6.50	12.00	4

Fig. 6 and 8 Angular Adapters, Fittings Only

Voltage of Insulator	Fig. 6, Base Adapter Only		Fig. 8, Base and Top Adapter Both	
	Net Each	Approx. Ship. Wt. Lb.	Net Each	Approx. Ship. Wt. Lb.
7500 and 15,000	\$2.00	4	\$3.50	8
23,000 and 34,500	2.50	5	5.00	9
46,000	3.00	6	6.00	11
66,000S and 69,000	4.50	6	8.50	11

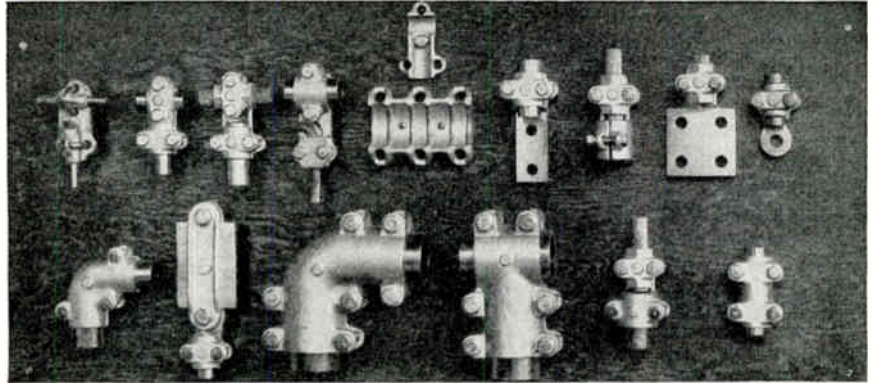
Fig. 7 Pipe Mounting Adapters, Adapters Only

Pipe Diameter Inches	Net Each	Approx. Ship. Wt. Lb.
1 1/4	\$1.50	3
2	1.75	3

G-E Outdoor Switching Equipment Electric Power Connectors

The purpose of these connectors is to enable connections to be made between electric conductors, or between conductors and apparatus, with minimum time and expense. The line of G-E Connectors is complete, comprising styles for all kinds of joints and various shapes of conductors. The illustration shows a group of assembled connectors. The fittings are made of high-conductivity copper alloy, and are equipped with nonferrous bolts, nuts, and lock washers.

G-E Connectors have improved features that mark a distinct advance in this kind of equipment. Their outstanding feature is the line pressure contact principle, the same as has been so successfully applied to G-E Indoor and Outdoor Air Switches and other apparatus. In the smaller fittings, this line-pressure contact is obtained by means of a series of threadlike cuts which present a serrated surface. In the larger sizes, contact between the conductor and the fitting is by a controlled



Typical Conductor Connectors

line pressure contact, rather than by the haphazard, or chance, point contact here and there as would result from a surface contact. Write for detailed data and dimensions. Prices will be furnished on request.

Live Line Connectors

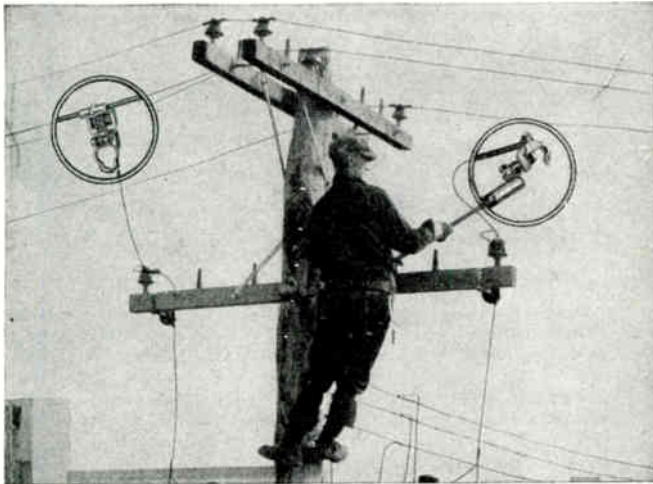
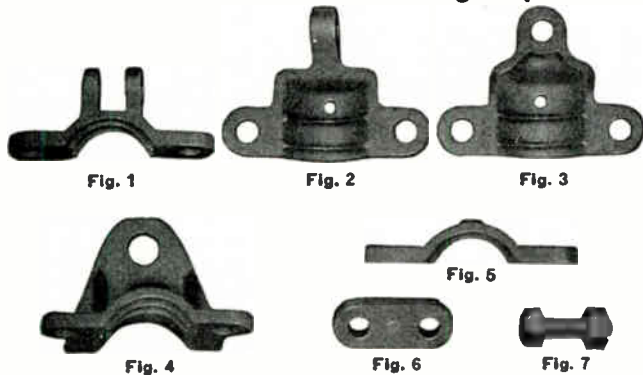


Illustration Shows How Live Line Connectors Are Used and Disconnected

These devices are economical and easily adaptable for making connections to live power lines. The device consists of a copper alloy hook which can easily be placed on the main conductor, a screw eye which actuates the clamping part which also secures the device to the switch hook during operation, and a cap for fastening the branch conductor to the device.

Main Conductor	Branch Conductor	Ampere Rating	Net Each	Approx. Ship. Wt. Lb.
Copper, No. 4 Wire to 0000 Cable.....	Copper, No. 4 Wire to 00 Cable.....	200	\$3.00	2
Aluminum, 3/8 to 1/2-Inch Diam....	Copper, No. 4 Wire to 00 Cable.....	200	3.75	2
Copper, 0000 Cable to 3/4-Inch I. P. S.	Copper, 0 Cable to 250,000 Cir. Mils. Cable.....	400	4.25	3
Aluminum, 1/2 to 1 1/8-Inch Diam....	Copper, 0 Cable to 250,000 Cir. Mils. Cable.....	400	4.25	3
Copper, 400,000 Cir. Mils. Cable to 1 1/4-Inch I.P.S.....	Copper, 0000 Cable to 500,000 Cir. Mils. Cable.....	600	5.00	4
Aluminum, 3/4 to 1 5/8-Inch Diameter...	Copper, 0000 Cable to 500,000 Cir. Mils. Cable.....	600	5.75	4

Galvanized Hinge Pipe Fittings—For Indoor and Outdoor Service



*No.	Net Each	Pipe Size In.	Description	Approx. Ship. Wt. Lb.
6025126P1	\$.35	1 1/4	90° Clamp Used with Any Other Clamp for Attaching Pipes at 90°	1 1/2
6026245P1	.50	2		1
6025126P2	.35	1 1/4	90° End Clamp Used with Fig. 5 for Attaching One Pipe to Another at Any Angle Greater Than 15°.....	1 1/2
6026245P2	.50	2		1
6025126P3	.35	1 1/4	Straight-End Clamp Similar to Fig. 2 Except with Flanges 90° from Those on Fig. 2.....	1 1/2
6026245P3	.50	2		1
6025126P4	.50	1 1/4	Base Clamp for Fastening Pipes to Footings or Walls.....	1
6026245P4	.80	2		2
6025126P5	.20	1 1/4	Clamp Cap Used with Any Other Clamp to Make a Complete Clamp. Fig. 1 May Replace Fig. 5 in Combination with Another Clamp to Provide Attachment for Pipes at 90°.....	1 1/4
6026245P5	.30	2		1 1/2
6025126P6	.20	1 1/4 & 2	Clamp Spacer Used with Other Clamps for Holding Pipes in Parallel to Add Stiffness in Vertical or Horizontal Pipe Members.....	1 1/4
	.08	1 1/4 & 2	Galvanized Bolt for Use with All Fittings.....	1 1/8

Pipe frameworks of any design can be assembled with this assortment of fittings and standard 1/2-inch bolts. Fittings can be used for outdoor substations, indoor switching or bus structures, stands for mounting various equipment, racks for shelving and display purposes, temporary scaffolding for building construction, etc. Made of certified malleable iron, hot-dip galvanized. Use one size of steel bolt, 1/2 inch-13 by 1 1/4 inches with hexagon nut for all connections. Bolts and nuts, including threads of both, are hot-dip galvanized by a special process.

*Number covers one section of clamp only. For complete clamp, select combination of parts and quantity of bolts.

G-E Watthour Meters

All General Electric a.c. watthour meters have substantially the same electrical characteristics. The mechanical details differ in accordance with the particular application, that is, whether they are for residential or switchboard service, and for single-phase or polyphase circuits.

The term long-range accuracy has been applied to these

meters because of their remarkable straight-line characteristics. When correctly adjusted at rated load, their accuracy is practically unaffected at double load; and even on a load of 300% their accuracy is phenomenal.

Application of a unique development has reduced to negligible values errors resulting from temperature changes.

For Alternating Current

Mounting	Type	*Max. Amps.	*Max. Volts	Circuits upon which used
Wall	I-30	50	240	1-element, 2 or 3-wire, 1-phase
Switchboard	IS-8	50	240	1-element, 2-wire, 1-phase
Wall	V-2	50	600	2-element, 3-wire
Wall	V-3	50	600	2-element, 3-wire, 3-phase
Wall	V-4	50	120	3-element, 4-wire Y, 3-phase
Wall	V-5	50	120	2-element, 4-wire Y, 3-phase
Wall	V-6	50	240	2-element, 4-wire Δ, 3-phase
Wall	V-7	50	240	3-element, 4-wire Δ, 3-phase
Wall	V-9	50	240	Tot. 3-wire, 2 or 3-phase and 2 or 3-wire, 1-phase
Switchboard	DS-19	600	600	2-element—3-wire, 1, 2, or 3-phase—4-wire, 2 phase
Switchboard	DS-20	120	120	3-element, 4-wire Y, 3-phase

For Direct Current

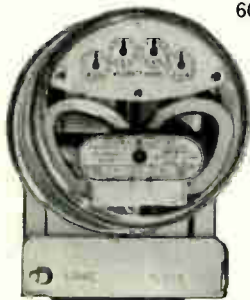
Mounting	Type	*Max. Amp.	*Max. Volts	Circuits upon which used
Wall	C-15	15	240	2 and 3-wire
Wall	C-6	600	240	2-wire
		300	240	3-wire
Wall	CS-3	600	600	2-wire
		400	240	3-wire
Switchboard	CS-4	600	600	2-wire
		400	240	3-wire
Switchboard	CS	1500	600	2-wire
			240	3-wire
Switchboard	G-3	6000	600	2-wire

*These are maximum self-contained ratings. A.c. meters are supplied for use on circuits of higher rating by the use of instrument transformers.

Prices and Information for D.C. Meters upon Request

Types V-2-A and V-2-S—2-Element—3-Wire 60 Cycles

Types I-30-A and I-30-S—Single-Phase—1-Element 60 Cycles



Type I-30-A



Type I-30-S

Induction type meter intended for single-phase residential and commercial service, either 2-wire or 3-wire.

Type I-30-A, standard meter unit intended for bottom connections. Can be used with a connection box or in a protector case. Approximate dimensions, 6 1/4 x 8 1/4 x 5 1/2 inches.

Type I-30-S, socket or plug-in type, for indoor or outdoor installation, with conduit or tamperproof-cable wiring. Approximate dimensions, 7 x 7 1/2 inches.

Approximate shipping weight, 10 pounds.

120 Volts, 2-Wire			240 Volts, 2-Wire		
Amp.	Type I-30-A No.	Type I-30-S No.	Type I-30-A No.	Type I-30-S No.	Each
5	77X247	77X271	77X252	77X276	\$17.15
15	77X248	77X272	77X253	77X277	\$18.50
50	77X249	77X273	77X254	77X278	\$27.25

Meters for Use with Current Transformers

Having 5-Ampere Secondary Rating

2.5	77X266	97X104	77X268	97X105	\$23.00
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240 Volts, 4 Terminals

5	77X257	77X281	77X262		\$18.50
15	77X258	77X282	77X263		\$18.50
50	77X259	77X283	77X264		\$27.25

Meters for Use with Current Transformers

Having 5-Ampere Secondary Rating

2.5			77X269		\$23.00
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Catalog numbers are for meters with jewel-pivot bearings. Same prices for meters with ball bearings.

Meters in 50-cycle ratings can be furnished at same prices.

Prices for Type I-30-A meters with connection box or in protector cases will be furnished upon request.

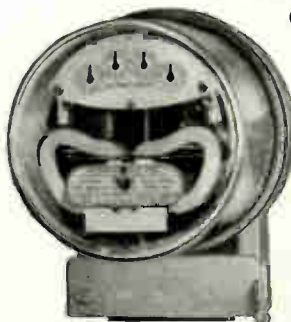
Sockets for Use with Type I-30-S Meters

With 1-inch conduit outlets.

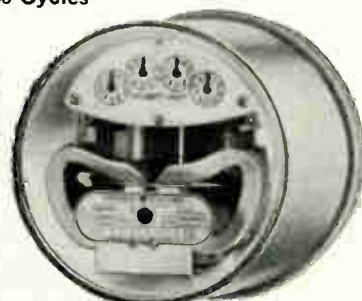
Approximate shipping weight, 2 1/2 pounds.

Mounting	No. of Conduit Outlets	Back Break-out	Without Circuit-Closing Device		With Circuit-Closing Device	
			No.	Each	No.	Each
Vertical	2	No	65X907	\$1.37	65X913	\$1.67
Horizontal	2	No	65X910	1.46	65X916	1.83
Vertical	2	Yes	67X971	1.37	67X977	1.67
Horizontal	2	Yes	67X974	1.46	67X980	1.83
Vertical	3	Yes	65X919	1.76	65X925	2.06
Horizontal	3	Yes	65X922	1.85	65X928	2.22

Sockets with 3/4 or 1 1/4-inch conduit outlets available.



Type V-2-A



Type V-2-S

Single-disk meter of the induction type for 3-wire service. Primarily intended for metering that class of 3-wire service obtained from two phases of a four-wire, 3-phase circuit in low-voltage a.c. network systems.

Type V-2-A meter can be used with connection box and block similar to Type I-30-A single-phase meter, the block requiring an attachable potential terminal. Approximate dimensions, 7 1/8 x 6 3/4 x 8 7/8 inches.

Type V-2-S meter is used with a socket which must be ordered separately. Approximate dimensions, 7 x 8 1/2 inches.

The potential coils are wound and rated for the line-to-neutral voltage, and these are the values used in the listing below. For example, order meters rated 120 volts for use on 120/240-volt, 3-wire circuits.

Approximate shipping weight, 17 pounds.

Amp.	120 Volts		Each	240 Volts		Each
	Type V-2-A No.	Type V-2-S No.		Type V-2-A No.	Type V-2-S No.	
5	76X3	76X14	\$37.70	76X8	76X19	\$41.95
15	76X5	76X16	37.70	76X10	76X21	41.95
50	76X7	76X18	55.45	76X12	76X23	59.75

Catalog numbers are for meters with jewel-pivot bearings. Same prices for meters with ball bearings.

Meters in 50-cycle ratings can be furnished at same prices.

Prices for Type V-2-A meters with connection box will be furnished upon request.

Sockets for Use with Type V-2-S Meters

With 1-inch conduit outlets.

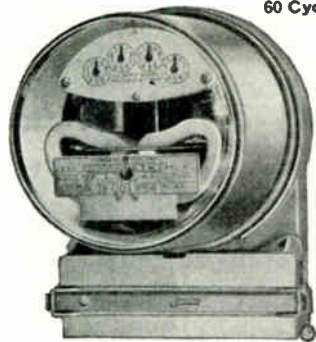
Approximate shipping weight, 4 pounds.

Mounting	No. of Conduit Outlets	Back Break-out	Without Circuit-Closing Device		With Circuit-Closing Device	
			No.	Each	No.	Each
Vertical	2	No	76X36	\$1.55	76X42	\$1.85
Horizontal	2	No	76X37	1.65	76X43	2.01
Vertical	2	Yes	76X38	1.55	76X44	1.85
Horizontal	2	Yes	76X39	1.65	76X45	2.01
Vertical	3	Yes	76X40	1.94	76X46	2.24
Horizontal	3	Yes	76X41	2.03	76X47	2.40

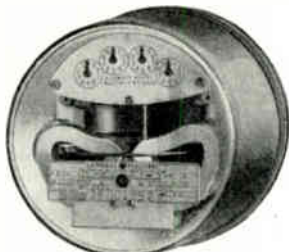
Sockets with 3/4 or 1 1/4-inch conduit outlets available.

G-E Watthour Meters

Types V-3-A and V-3-S—Polyphase—2-Element—3-Wire 60 Cycles



Type V-3-A



Type V-3-S

Type V-3-A is for wall mounting, bottom-connected, and can be used by itself or in conjunction with the usual polyphase meter trims. The terminal arrangements and block dimensions are standard for polyphase meters. A maximum of 15 terminals can be provided, eight terminals for current connections and seven terminals for potential connections, contact-device connections, and test links. Approximate dimensions, 9 $\frac{1}{2}$ x6 $\frac{3}{4}$ x6 $\frac{1}{8}$ inches. Approximate shipping weight, 12 pounds.

Type V-3-S is for socket mounting. Terminal blades up to a maximum of eight provide for connections to almost any standard circuit. This meter requires a socket entirely different from that of the single-element meter or the 2-element Type V-2-S meter. Sockets have up to eight terminals. Approximate dimensions, including socket, 13 $\frac{1}{4}$ x7 $\frac{1}{2}$ x11 inches. Approximate shipping weight, 10 pounds.

120 Volts

Amp.	Type V-3-A No.	Type V-3-S No.	Each	Type V-3-A No.	Type V-3-S No.	Each
5	77x289	97x109	\$39.70	77x294	97x112	\$44.00
15	77x291	97x110	39.70	77x296	97x113	44.00
50	77x293	97x111	57.40	77x298	97x114	61.75

240 Volts

Amp.	Type V-3-A No.	Type V-3-S No.	Each	Type V-3-A No.	Type V-3-S No.	Each
5	77x299	97x115	\$53.00	77x304	97x118	\$53.00
15	77x301	97x116	53.00	77x306	97x119	53.00
50	77x303	97x117	71.00	77x308	97x120	71.00

For Use with Current Transformers Having 5-Amp. Secondary Rating

2.5	77x309	77x404	\$42.00	77x310	77x405	\$46.50
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480 Volts

5	77x299	97x115	\$53.00	77x304	97x118	\$53.00
15	77x301	97x116	53.00	77x306	97x119	53.00
50	77x303	97x117	71.00	77x308	97x120	71.00

600 Volts

5	77x299	97x115	\$53.00	77x304	97x118	\$53.00
15	77x301	97x116	53.00	77x306	97x119	53.00
50	77x303	97x117	71.00	77x308	97x120	71.00

For Use with Current Transformers Having 5-Amp. Secondary Rating

2.5	77x311	77x406	\$55.25	77x312	77x407	\$55.25
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Catalog numbers are for meters with jewel-pivot bearings. Same prices for meters with ball bearings.

Meters in 50-cycle ratings can be furnished at same prices.

Sockets for Use with Type V-3-S Meters

Approximate shipping weight, 15 pounds.

Type Meter	Circuit-Closing Device	Conduit Outlet Inches	No.	Each
Self-Contained	No	1 $\frac{1}{4}$	94x994	\$7.98
	No	2	94x995	8.30
Transformer-Rated and Self-Contained	Yes	1 $\frac{1}{4}$	83x788	8.49
	Yes	2	83x789	8.82

Types V-5-A and V-5-S—Polyphase 2-Element—4-Wire Y 60 Cycles

This meter has two potential circuits and three current circuits and is intended for use on 4-wire Y, 3-phase circuits provided the voltage unbalance is less than 1% and the power factor reasonably high.

In external appearance they are like the Types V-3-A and V-3-S meters.

Approximate shipping weight: Type V-5-A, 12 pounds; Type V-5-S, 10 pounds.

Volts	Amp.	Type V-5-A No.	Type V-5-S No.	Each
120Y	5	77x334	77x409	\$42.00
	15	77x336	77x411	42.00
	50	77x338	77x413	59.75

For Use with Current Transformers Having 5-Amp. Secondary Rating

120Y	2.5	77x354	77x429	\$44.25
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Catalog numbers are for meters with jewel-pivot bearings. Same prices for meters with ball bearings.

Meters in 50-cycle ratings can be furnished at same prices.

Sockets for Use with Type V-5-S Meters

Approximate shipping weight, 15 pounds.

Type Meter	Circuit-Closing Device	Conduit Outlet Inches	No.	Each
Self-Contained	No	1 $\frac{1}{4}$	83x784	\$7.98
	No	2	83x785	8.30
	Yes	1 $\frac{1}{4}$	94x996	8.49
	Yes	2	94x997	8.82
Transformer-Rated and Self-Contained	Yes	1 $\frac{1}{4}$	83x786	8.49
	Yes	2	83x787	8.82

Types V-6-A and V-6-S—Polyphase 2-Element—4-Wire Δ 60 Cycles

This meter has two, 240-volt potential circuits and three current circuits and is intended for use on 4-wire Δ , 3-phase circuits provided the two, 120-volt voltages of the lighting circuit are reasonably balanced. The external appearance of the meters is the same as Types V-3-A and V-3-S meters.

Approximate shipping weight: Type V-6-A, 12 pounds; Type V-6-S, 10 pounds.

Volts	Amp.	Type V-6-A No.	Type V-6-S No.	Each
240	5	77x364	77x434	\$46.75
	15	77x366	77x436	46.75
	50	77x368	77x438	64.75

For Use with Current Transformers Having 5-Amp. Secondary Rating

240	2.5	97x133		\$49.00
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Catalog numbers are for meters with jewel-pivot bearings. Same prices for meters with ball bearings.

Meters in 50-cycle ratings can be furnished at same prices.

Sockets for Use with Type V-6-S Meters

Approximate shipping weight, 15 pounds.

Type Meter	Circuit-Closing Device	Conduit Outlet Inches	No.	Each
Self-Contained	No	1 $\frac{1}{4}$	83x784	\$7.98
	No	2	83x785	8.30
Transformer-Rated and Self-Contained	Yes	1 $\frac{1}{4}$	94x996	8.49
	Yes	2	94x997	8.82

Types V-4-A, V-7-A, V-9-A, and V-10-A—Polyphase—3-Element 60 Cycles

Type V-4-A meter is intended for 4-wire Y, 3-phase circuits. It has three potential and three current circuits. Approximate shipping weight, 22 pounds.

Type V-7-A Meter is for 4-wire Δ , 3-phase circuits. It has one 240-volt (200-volt) element and two, 120-volt elements. Approximate shipping weight, 22 pounds.

Types V-9-A and V-10-A meters are used for totalizing one, 3-wire, 2 or 3-phase power circuit and one, single-phase lighting circuit, either 2 or 3 wire. Prices upon request.

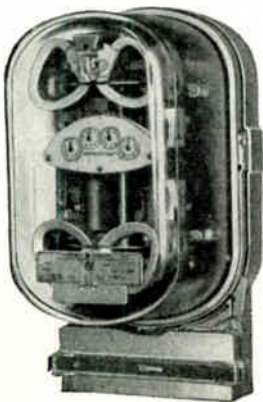
Type V-4-A				Type V-7-A			
Volts	Amp.	No.	Each	Volts	Amp.	No.	Each
120Y	5	86x617	\$71.25	240	5	86x622	\$86.00
	15	86x618	71.25		15	86x623	86.00
	50	86x619	90.25		50	86x624	107.00

For Use with Current Transformers Having 5-Ampere Secondary Rating

120Y	2.5	86x621	\$74.50	240	2.5	86x625	\$89.00
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Catalog numbers are for meters with jewel-pivot bearings. Same prices for meters with ball bearings.

Meters in 50-cycle ratings can be furnished at same prices.



G-E Watthour Meters

For Switchboard Service

For Use with Instrument Transformers



Type DS-19

This line of back-connected single-phase and polyphase meters combines the improved elements of the new front-connected meters with the narrow 5 1/2-inch universal-type switchboard case.

These meters are listed only for use with instrument transformers, i.e., in 2.5-ampere ratings. However, they are also available in 5 or 10-ampere self-contained ratings. Self-contained sizes have liberal overload rating. These meters may therefore be used with good accuracy on loads up to 300% of normal load and with ample margin of safety on loads considerably in excess of this.

Test links are not provided for these meters. Separate test blocks are available for this purpose.

Type IS-8

Single-Element—2-Wire—Single Phase

For 3-wire service, the Type DS-19 meter is recommended; 3-wire, single-phase circuits can however, be metered with the 2-wire meter, No. 21x925, when connected with double-primary, single-secondary, 3-wire type of current transformers.

Approximate dimensions, 6x5 1/2 x 7 inches.

Approximate shipping weight, 20 pounds.

SECONDARY RATING OF INSTRUMENT TRANSFORMERS	METER RATING		No.	Each
	Volts	Amp.		
115	5	120 2.5	21x921	\$40.00
No Potential	5	120 2.5	21x923	40.00
Transformers	5	240 2.5	21x925	42.00

Type DS-19

2-Element—3-Wire, 1, 2, or 3-Phase and 4-Wire, 2-Phase

Approximate dimensions, 12x5 1/2 x 7 inches.

Approximate shipping weight, 25 pounds.

SECONDARY RATING OF INSTRUMENT TRANSFORMERS	METER RATING		No.	Each
	Volts	Amp.		
115	5	115 2.5	21x939	\$72.00
No Potential	5	120 2.5	21x941	72.00
	5	240 2.5	21x943	79.00
Transformers	5	480 2.5	21x945	89.00
	5	600 2.5	21x947	89.00

Type DS-20

3-Element—4-Wire Y—3-Phase

Approximate dimensions, 16x5 1/2 x 7 inches.

Approximate shipping weight, 35 pounds.

SECONDARY RATING OF INSTRUMENT TRANSFORMERS	METER RATING		No.	Each
	Volts	Amp.		
115	5	120 2.5	21x957	\$108.00
No Potential	5	120 2.5	21x959	108.00
Transformers				

Meters in 50 or 25-cycle ratings can be furnished at same prices.

Catalog numbers are for meters with jewel-pivot bearings. Same prices for meters with ball bearings.

Catalog numbers and prices do not include instrument transformers. Specify ratios of transformers with which meter is to be used. It is standard practice (for meters of modern construction) to use 2.5-ampere meters with current transformers having 5-ampere secondary rating, since this results in the best overall accuracy and performance.

G-E Jewels for Watthour Meters

Jewel-Pivot Bearings—Mounted in Screws
No. 39924—Sapphire



For d.c. meters, Types C, C-5, C-6, C-7, C-9 and C-15; single-phase, house and switchboard meters, Types I, I-8, IS-2 and IS-3 and polyphase meters Types D-3, D-4, D-9, DS-2, DS-3, DS-4, DS-5 and DS-9.

No. 39924, In Lots of 10.....per box \$6.00

No. 68X1—Sapphire



Oil-tight jewel screw with removable jewel plug. For single-phase meters, Types I-14, I-15, I-16, I-18, I-20, I-30, IS-4, IS-5, IS-6, IS-7, IS-8 and IS-9; for polyphase meters, Types D-6, D-7, D-8, D-14, D-15, DS-6, DS-7, DS-11, DS-12, DS-19, DS-20, DS-21, DS-23, DS-34, DS-35, and V-2 to V-10 inclusive; and for test meters, Types IB-5, IB-6, IB-7, IB-8 and IB-9.

No. 68X1, In Lots of 10.....per box \$4.00

No. 68X2, Jewel Plug with Jewel for No. 68X1 Jewel Screw, in Lots of 10.....per box 3.00

No. 39925—Diamond

For d.c. house service meters of Type C construction. No. 39925, In Lots of 10.....per box \$60.00

No. 118569—Diamond



For d.c. meters of double armature construction, Types CS, CS-2, CS-3, CS-4, G-2 and G-3.

No. 118569, In Lots of 10.....per box \$60.00

No. 39926—Diamond



For Types E and G house service d.c. meters of earlier than Type C construction. No. 39926, In Lots of 10....per box \$60.00

No. 295309 G-E Pivots

For all types of meters. Packed in boxes of 25.

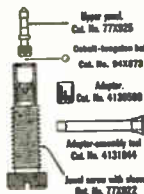
No. 295309.....per box \$3.80

G-E Meter Jewel Oil

No. 66X728, 1-Dram Bottle Cemented in Brass Container.....each \$6.00
No. 66X727, 1-Ounce Bottle.....each 1.80

G-E Ball Bearings

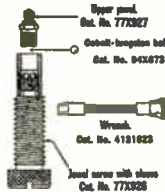
Enclosed Type



Enclosed type ball bearings are recommended for meters: Types I-16, I-20, I-30, IS-8, IS-9, and V-2 to V-10 inclusive; also these meters with the letter M or W added to the type designation.

No.	Description	lots of	Price
94X672	Jewel-Screw Assembly with Ball	lots of 10	\$8.60
77X922	Lower Jewel Screw with Sleeve	lots of 10	4.00
77X925	Upper Jewel	lots of 10	4.00
94X673	Lot of 25 Balls in Vial	lots of 10 vials	15.00
4130598	Adapter for Use with Meters Originally Furnished with Pivot Type Bearing	per 100	6.00
4131844	Adapter Assembly Tool	each	.10

Open Type



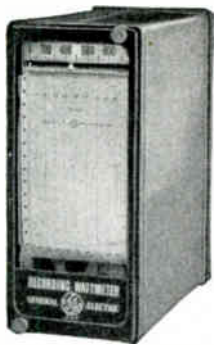
Open type ball bearings are recommended for meters: Types I-14, I-15, IS-4, IS-5, I-18, D-6, D-7, D-14, D-15, DS-6, DS-7, DS-19, DS-20, DS-21, DS-23, DS-34, and DS-35; also these meters with the letter M or W added to the type designation.

No.	Description	lots of	Price
77X926	Lower Jewel Screw with Sleeve	lots of 10	\$4.00
77X927	Upper Jewel	lots of 10	4.00
94X673	Lot of 25 Balls in Vial	lots of 10 vials	15.00
4131823	Wrench for Use on Upper Jewel	each	.30

G-E Strip-Chart Recording Instruments

Switchboard and Portable Types

60 Cycles—For A.C. and D.C.



Switchboard
Back-Connected



Portable

Types CD recording instruments are available for switchboards, front or back-connected, or in portable form. There is a complete line for a.c. or d.c. circuits, including ammeters, voltmeters, wattmeters, frequency meters, and powerfactor meters. Standard chart speeds are 3 inches per hour for switchboard instruments. Portable instruments have a gear shift that permits chart speeds of either 3 inches per hour or 3 inches per minute. The driving mechanism may be either an eight-day, spring-operated clock, or a telechron motor, as specified.

Type CD recording instruments are available with provision for inkless recording at a slight increase in price.

This listing covers only the portable instruments with telechron motor drive. Switchboard instruments have somewhat lower prices; dimensions: instrument, 12x5 $\frac{1}{2}$ x10 inches and chart, 4 $\frac{3}{8}$ inches wide and 60 feet long. Instruments with spring-driven, hand or motor-wound timing mechanisms have somewhat higher prices.

Type CD-13—For A.C.

Potential resistances self-contained.

Instrument is calibrated for 25 to 60 cycles, a.c.

Voltmeters will read correctly on d.c. circuits but ammeters will read approximately 3% high if used on d.c. circuits.

Approximate shipping weight, 60 pounds.

Voltmeters					
Double-Voltage Rated, Volts		No.	Each		
0-150 or 0-300		76x84	\$270.00		
0-300 or 0-750		76x85	280.00		
Ammeters					
Amperes	No.	Each	Amperes	No.	Each
1	76x86	\$230.00	20	76x91	\$235.00
2	76x87	230.00	2.5/5	76x92	245.00
5	76x88	230.00	5/10	76x93	245.00
10	76x89	235.00	10/20	76x94	245.00
15	76x90	235.00	.....	.....	.....

Type CD-11—For D.C.

Potential resistances self-contained.

Millivoltmeters are used as ammeters with any standard switchboard or portable shunt of 50-millivolt drop. Form 18 shunts are recommended. One set of shunt leads, 5 feet long, is furnished with each millivoltmeter.

Approximate shipping weight, 65 pounds.

Voltmeters			
Double-Voltage Rated, Volts		No.	Each
0-150 or 0-300		76x106	\$305.00
0-300 or 0-750		76x107	310.00
Millivoltmeter Used as Ammeter			
Millivolts	No.	Each	
50	94x545	\$285.00	

Extra-length shunt leads: 10-foot, \$12.00 per set; 15-foot, \$18.00 per set; and 20-foot, \$22.00 per set.

Form 18 Shunts

Amp.	No.	Each	Amp.	No.	Each	Amp.	No.	Each
60	36x155	\$7.00	150	36x159	\$7.00	400	36x163	\$10.00
75	36x156	7.00	200	36x160	7.00	500	36x164	11.75
80	36x157	7.00	250	36x161	7.00	600	36x165	11.75
100	36x158	7.00	300	36x162	8.25	800	36x166	15.00

G-E Strip-Chart Recording Instruments

Portable, Type CF-1

60 Cycles—For A.C. and D.C.



Type CF-1 inkless recording instrument is designed to provide inexpensive recording voltmeters and ammeters for those applications where reliability and maximum convenience to the user are important.

Recommended for either indoor or outdoor service, the instrument is portable but may be wall or pole mounted.

Voltage surveys, complaint investigation, and checking circuit load conditions are typical applications.

Continuous operation for 30 days without attention at a chart speed of one inch per hour renders these instruments ideal for installation in locations where frequent servicing is impractical.

For applications where extreme conditions of temperature are likely to be encountered, inkless recorder is recommended. Successful operation down to -10°F. and as high as 120°F. can be expected. It is also recommended for applications where high humidity may retard the normal drying of ink.

Designed for a.c. operation but can be used on d.c. at reduced accuracy. Records are usually within 5% of full-scale value.

Voltmeters should be ordered with separate telechron motor terminals.

Approximate dimensions: instrument, 9 $\frac{3}{4}$ x8 $\frac{1}{2}$ x6 inches; chart, 4 inches wide and 65 feet long.

Approximate shipping weight, 25 pounds.

Voltmeters			
Volts	Scale Volts	No.	Each
0-140/280	0-140	88x726	\$105.00

Telechron motor circuits internally connected to element terminals. Instruments can be supplied with separate motor terminals, \$5.00 extra. Specify with separate motor terminals.

Single range 0-140 or 0-280-volt instruments can be supplied at no increase in price.

Ammeters			
Amperes	Scale Amperes	No.	Each
0-5/10	0-5	88x731	\$105.00

Ammeter has 115/230-volt or 230/460-volt telechron motor circuit. Connections to separate terminals on terminal block. Motor ratings changed by link arrangement on terminal block.

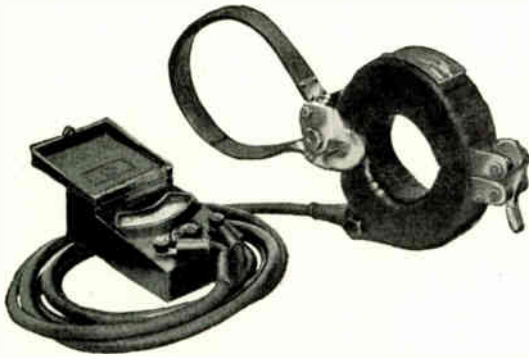
Single-range ammeters 0-5 to 0-10 amperes can be supplied at no increase in price.

Ordering directions: 3-inch per hour is standard chart; 1 or 2-inch per hour is optional.

Supplies

Ribbon on Spool.....	each	\$.75
Empty Spool.....	each	.25
Rate Gear Unit, 1, 2, or 3 Inches.....	each	3.00
Record Rolls.....	each	1.10
Lamps.....	each	.15

**G-E Current-Measuring Sets
For Measuring Amperes Only
With Indicating Ammeter—For A.C.**



This current-measuring set is very convenient for measuring the current in the leads to motors and transformers and in feeder circuits, because it permits the measurement to be made without interrupting service.

Set includes a small Type AS-5 ammeter, test leads, and a Type G-4 split-core current transformer.

When in use, the transformer is clamped around the cable or lead in which the current is to be measured.

Sets with recording ammeters can also be furnished.

Length lead, 10 feet.

Approximate shipping weight, 24 pounds.

No.	Each	Frequency Cycles	Amperes	No.	Each	Frequency Cycles	Amperes
77X50	\$115.00	50/60	50/200	77X58	\$120.00	50/60	150/600
77X66	124.00	25	50/200	77X74	120.00	25	150/600
77X52	115.00	50/60	100/200	77X60	120.00	50/60	300/600
77X68	124.00	25	100/200	77X76	120.00	25	300/600
77X54	120.00	50/60	125/500	77X62	212.00	50/60	250/1000
77X70	129.00	25	125/500	77X78	212.00	25	250/1000
77X56	120.00	50/60	250/500	77X64	212.00	50/60	500/1000
77X72	129.00	25	250/500	77X80	212.00	25	500/1000

Leads in 50-foot lengths can be furnished, \$4.00 extra.

**G-E Hook-On Volt-Ammeters
Type AK-1—For A.C.**



This hook-on volt-ammeter is a versatile portable instrument for measuring a.c. and voltage quickly and accurately. It is safe, simple, and easy to use for making measurements on the job. A.c. can be read instantaneously on both insulated and non-insulated conductors by simply hooking the instrument around the line; no necessity for separate transformers or additional equipment of any kind.

The instrument also measures a.c. voltages. Two voltage ranges (0-150/600 volts) are available without the use of auxiliary equipment. It is only necessary to connect leads to the two convenient terminals on the instrument, then click the selector switch to the desired voltage position on the scale. Voltage leads, 6 feet long, are included with each instrument. Approximate dimensions, 13¼x3¾x2½ inches. Approximate weight: net, 3½ pounds; shipping, 7½ pounds.

No.	Each	Amperes	Volts
99x33	\$93.50	0-15/60/150/600	0-150/600
No. 99x38	Leather Case.....each \$12.00		
No. 99x67	Hot-Line Extension Pole, 4 Feet Long each 7.50		
No. 99x68	Hot-Line Extension Pole, 6 Feet Long each 9.00		

G-E Portable Transformers

For use with meters, instruments, and similar devices. Used in laboratory and general testing work.

**Current Transformers
2500 Volts—25-125 Cycles**

Current transformers include a wide range of primary currents. For example, the Type P-3 is a multirange transformer having either three or six primary ratings. Changes in ratio are made by changing the link connections on the top of the case. The R-2 and R-3 are of the through type and have much higher ratings. Type JP-1 is especially suited for industrial work. The accuracy of these transformers is sufficiently high to obviate the need for correction during most commercial tests. However, certificates of phase-angle and ratio characteristics can be furnished.



Type JP-1

Type P-3

No.	Each	Primary Cap., Amp.	Ratio
248742	\$118.00	5/10/20	1/2/4 :1
248743	118.00	15/30/60	3/6/12 :1
248744	118.00	25/50/100	5/10/20 :1
248745	118.00	50/100/200	10/20/40 :1
248746	140.00	7.5/10/15/20/30/40	1.5/2/3/4/6/8 :1
295534	140.00	10/15/20/30/40/60	2/3/4/6/8/12 :1
248747	140.00	15/20/30/40/60/80	3/4/6/8/12/16 :1
248748	140.00	20/25/40/50/80/100	4/5/8/10/16/20 :1
259628	140.00	30/37.5/60/75/120/150	6/7.5/12/15/24/30 :1
248749	140.00	30/40/60/80/120/160	6/8/12/16/24/32 :1
295535	140.00	37.5/50/75/100/150/200	7.5/10/15/20/30/40 :1
248750	140.00	40/50/80/100/160/200	8/10/16/20/32/40 :1

Type R-2

61551	\$100.00	1000	200:1 One Turn
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Type R-3

257265	\$120.00	1000/1200	200/240:1 One Turn
259629	124.00	1500/1600	300/320:1 One Turn
295536	135.00	1000/1200/1500	200/240/300:1 One Turn
295537	180.00	1000/1200/1500/1600	200/240/300/320:1 One Turn

Type JP-1

88X593	\$67.00	10/20/50/100/600/800	2/4/10/20/120/160:1
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Potential Transformers

Under ordinary conditions of load and power-factor, the accuracy of these types will not vary more than 1% from rated ratio.

When used with a test certificate, the ratio can be corrected to within one tenth of 1%, and the phase angle can be corrected to within three minutes.

Type E-6 is rated 25 volt-amperes, and is compensated for 12.5 volt-amperes.

Type JE-9 is rated 200 volt-amperes, and is compensated for 50 volt-amperes.



Type E-6

No.	Each	Volt-Amp.	Cycles	VOLTAGE		Ratio
				Primary	Secondary	
48X482	\$90.00	25	25	230/460	115	2/4:1
48X483	85.00	25	25	460	115	4:1
48X484	90.00	25	25	575	115	5:1
48X485	95.00	25	25	2300	115	20:1
48X486	65.00	25	50/60	230/460	115	2/4:1
48X487	60.00	25	50/60	460	115	4:1
48X488	65.00	25	50/60	575	115	5:1
48X489	70.00	25	50/60	2300	115	20:1

Type JE-9

No.	Each	Volt-Amp.	Cycles	Primary Volts	Ratio
71X225	\$50.00	200	60	230	2:1
71X226	50.00	200	60	345	3:1
71X227	50.00	200	60	460	4:1
71X228	50.00	200	60	575	5:1
71X229	50.00	200	60	2300	20:1

Weston Portable Instruments

Model 430 D.C. Instruments

For General Plant Testing



Accurate within 1/2 of 1 per cent. Permanent magnet moving coil type. Unshielded from external magnetic fields. Voltmeters are made with single and triple ranges at a standard sensitivity of 1000 ohms per volt, with 5000 ohms per volt also available at an increase in price.

Ammeters and milliammeters regularly made with single and triple ranges, self-contained up to 50 amperes inclusive. Double ranges available on special order. Microammeters are made only in single range form.

Voltmeters with triple ranges only; sensitivity, 1000 ohms per volt. Available with self-contained ranges of 300 volts and 50 amperes. Prices on application.

Dimensions, 5 1/2 x 6 1/2 x 3 1/2 inches; scale length, 4 inches.

Approximate weight, 3 1/2 pounds.

Voltmeters

Triple Range

Ranges	Each	Scale Div.	Ranges	Each	Scale Div.
75/30/7.5	\$53.00	150	300/150/3	\$57.00	150
150/15/3	53.00	150	750/300/150	69.00	150

Above ranges also available with a sensitivity of 5000 ohms per volt at an increase in price. Suitable for electronic work.

Ammeters

Single Range

Ranges	Each	Scale Div.	Ranges	Each	Scale Div.
1	\$43.00	100	15	\$43.00	150
5	43.00	100	30	43.00	150

Triple Range

Ranges	Each	Scale Div.	Ranges	Each	Scale Div.
5/0.5/0.05	\$53.00	100	30/15/3	\$53.00	150
10/1/0.1	53.00	100	50/5/0.5	53.00	100
15/3/1.5	53.00	150	50/25/10	53.00	100
25/10/2.5	53.00	100			

Milliammeters

Single Range

Ranges	Each	Approx. Resist. Ohms	Scale Div.	Ranges	Each	Approx. Resist. Ohms	Scale Div.
1	\$44.00	92	100	150	\$43.00	..	150
15	43.00	1.4	150	300	43.00	..	150
30	43.00	88	150	..	..	..	..

Triple Range

Ranges	Each	Scale Div.	Ranges	Each	Scale Div.
3/0.3/0.03	\$70.00	..	150/150/15	\$53.00	..
150/15/1.5	54.00	..	3000/300/30	53.00	..
150/30/7.5	53.00	..	..	..	..

Milliammeters with ranges above 30 ma. are shunted and have a drop of 50 mv. ± 5%.

Microammeters

Single Range

Ranges	Each	Scale Div.	Ranges	Each	Scale Div.
30	\$60.00	3300	150 200	\$48.25	560 100
50	57.50	2200	100 500	48.25	275 100
100	55.00	1650	100 ..	..	..

Leather case for single range voltmeter, single or triple range ammeter, milliammeter or microammeter, \$7.50; case for triple range voltmeter, \$8.00.

Weston Portable Instruments

Model 432 D.C. and Single Phase A.C. Wattmeters

For General Plant Testing



This wattmeter is of the electro-dynamometer type, accurate within 1/2 of 1 per cent. Shielded from external magnetic fields.

Made with double voltage and single and double current ranges, self-contained up to 300 volts and 50 amperes. Potential ranges up to 750 volts are available by using external multipliers, higher ranges require the use of potential transformers. Current ranges can be extended beyond 50 amperes by using a 5-ampere instrument in conjunction with the Model 461 current transformer.

These instruments are accurate on all commercial frequencies up to 133 cycles per second. The phase angle is negligible on such frequencies. They may be used on d.c. and checked in comparison with d.c. standards. The temperature error is less than 1 per cent for 25°C. change in temperature.

As the working error is negligible, they may be left in circuit continuously without appreciable effect on the accuracy.

Power consumption: Potential side, at 115 volts, 1.2 watts; at 115 volts, 25 or 60 cycles, 1.2 volt-amperes. Current side, at 5 amperes, .67 watt; at 5 amperes, 25 cycles, .73 volt-ampere and at 5 amperes, 60 cycles, .98 volt-ampere.

Dimensions: 6 1/2 x 5 1/4 x 3 1/2 inches; scale length, 4 1/8 inches. Weight, 3 1/4 pounds.

VOLTS		Each	AMPERES		WATTS		APPROX. RES. OHMS	
Normal	Max.		Normal	Max.	Low Range	High Range	Low Range	High Scale Div.
75/100	100/200	\$70.00	1	1.5	75	150	5500	11000
150/300	200/400	74.00	1	1.5	150	300	11000	22000
75/150	100/200	70.00	2	3	150	300	5500	11000
150/300	200/400	74.00	2	3	300	600	11000	22000
75/150	100/200	70.00	5	7.5	375	750	5500	11000
150/300	200/400	74.00	5	7.5	*.75	*1.5	11000	22000
75/150	100/200	70.00	10	15	*.75	*1.5	5500	11000
150/300	200/400	74.00	10	15	*1.5	*3	11000	22000
75/150	100/200	73.00	20	30	*1.5	*3	5500	11000
150/300	200/400	77.00	20	30	*3	*6	11000	22000
75/150	100/200	76.00	50	75	*3.75	*7.5	5500	11000
150/300	200/400	80.00	50	75	*7.5	*15	11000	22000

*Kilowatts.

Double current ranges with range changing switch available at an extra charge. Prices upon application.

Leather Case..... each \$7.50

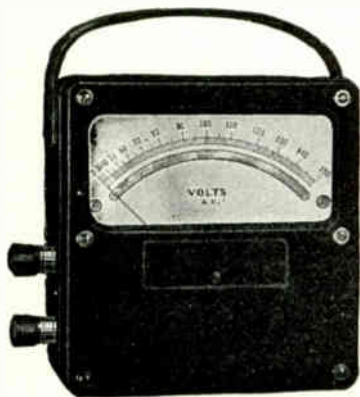
Y-Boxes for Model 432 Wattmeters

For Use on Balanced 3-Phase 3-Wire Circuits

Normal Voltage of Instrument	Each	Y-Box Multiplying Constant	Normal Line Voltage With Y-Box	Maximum Voltage With Y-Box	Box	
					Type	No.
75	\$24.00	3	150	170	5	1
150	24.00	3	300	340	5	2
150	24.00	4	400	450	5	2
150	24.00	5	500	550	5	3
150	24.00	6	600	650	5	3

Weston Portable Instruments

**Model 433 A.C. Instruments
For General Plant Testing**



Electromagnetic or moving iron type instruments contained in bakelite cases with leather carrying handles. Shielded from external magnetic fields. Accurate within 3/4 of 1 per cent.

Instruments can be left in circuit continuously without overheating, therefore, no contact key is used.

Size 5 1/8 x 6 1/2 x 3 1/2 inches; scale length, 4 1/8 inches.

Weight, 2 1/2 pounds.

Voltmeters

Self-contained for ranges shown. Higher ranges obtained by using multipliers or Model 311 or 457 potential transformer in conjunction with a 150-volt instrument; for use on frequencies up to 133 cycles per second.

Voltmeters to be used in 500 cycles, add \$4.00 to prices.

Single Range							
Range	Each	Resist. Ohms	Scale Div.	Range	Each	Resist. Ohms	Scale Div.
10	\$41.00	80	100	125	\$41.00	4400	125
15	41.00	168	150	150	41.00	5300	150
30	41.00	425	150	250	44.00	18200	50
50	41.00	1140	100	300	45.00	22000	150
75	41.00	2680	75				
Double Range							
10/5	\$46.00	40/20	100	*150/15	\$46.00	3000/300	150
20/10	46.00	160/80	100	150/75	46.00	5300/2680	150
30/15	46.00	336/168	150	300/150	50.00	22000/11000	150
60/30	46.00	850/425	60				

*Low range of this combination has an accuracy of 3 per cent.

Has metal extension on case to accommodate additional resistance necessary for high ranges.

Range Volts	Each	Resistance Ohms	Scale Div.
450/300/150	\$60.00	33000/22000/11000	150
750/300/150	68.00	55000/22000/11000	150

Ammeters

For use on frequencies up to 500 cycles per second, except triple range ammeters which have self-contained transformer limiting use to a.c. with frequencies up to 133 cycles.

Single Range							
Range	Each	Resist. Ohms	Inductance Henries	Scale Div.	Range	Each	Resist. Ohms
1	\$39.00	.48	.00035	100	10	\$39.00	.007
1.5	39.00	.20	.000155	150	15	43.00	.0038
2	39.00	.119	.000085	100	25	43.00	.0015
3	39.00	.053	.000030	60	30	43.00	.00063
5	39.00	.0197	.0000135	100	50	45.00	.0004
Double Range							
10/5	\$52.00	.0083/.028		100	20/10	\$56.00	.004/.0108

Operate through self-contained multi-range transformers, therefore they cannot be used on d.c.

3/1.5/.75	\$88.00		150	20/5/2	\$88.00		100
5/2.5/1	88.00		50	30/7.5/3	88.00		150
10/5/1	88.00		100	50/20/5	88.00		100
10/5/2.5	88.00		50	50/20/10	88.00		100
15/7.5/1.5	88.00		150				

Milliammeters

Single Range							
Range Milli-amp.	Each	Resist. Ohms	Scale Div.	Range Milli-amp.	Each	Resist. Ohms	Scale Div.
30	\$39.00	460	150	300	\$39.00	3.85	150
75	39.00	78	75	500	39.00	2	100
100	39.00	49	100	750	39.00	.75	75
150	39.00	13	150				
200	39.00	8.75	100				
250	39.00	6	50				

Leather Cases, ea. \$7.50
 †Also available in double range combinations.

Weston Portable Instruments

**Model 155 A.C. Instruments
For General Plant Testing**



Movable iron type. Scale length, 5 1/4 inches. Accuracy within 1/2 of 1 per cent. Black walnut case without cover, leather carrying handle.

Power consumption: Voltmeters at 115 volts, 6.5 watts; at 115 volts, 25 or 60 cycles, 6.5 volt-amperes. Ammeters at 5 amperes, 1.1 watts; at 5 amperes, 25 cycles, 1.1 volt-amperes; at 5 amperes, 60 cycles, 1.4 volt-amperes.

***Voltmeters**

Self-contained up to and including 750 volts. Higher ranges may be obtained by using Models 311 or 457 portable potential transformers in conjunction with 150-volt instrument. Dimen.: to 300 v. 7x7 1/8x3 1/4 in., above 300 v. 7 3/4x8 3/4x4 in. Wt.: to 300 v., 4 lb.; above 300 v., 5 lb.

Single Range							
Range	Each	Resist. Ohms	Scale Div.	Range	Each	Resist. Ohms	Scale Div.
30	\$58.00	150	150	250	\$61.00	4150	125
50	58.00	415	100	300	62.00	5000	150
125	58.00	1670	125	500	67.00	8333	100
150	58.00	2000	150	600	70.00	10,000	120

Double Range			
Ranges	Each	Approx. Resist. Ohms	Scale Div.
150/75	\$63.00	1250/625	150
300/150	67.00	5000/2500	150
600/150	75.00	10000/2500	150
600/300	75.00	10000/5000	150
750/150	79.00	12500/2500	150

Triple Range			
Ranges	Each	Approx. Resist. Ohms	Scale Div.
600/300/150	\$80.00	10000/5000/2500	150
750/300/150	84.00	12500/5000/2500	150

*Meters to be used on 500 cycles, add \$4.00 to prices.

Ammeters

Self-contained up to and including 500 amperes. Higher ranges available by using Models 327, 328 or 461 current transformers in conjunction with 5-ampere instrument. Dimen.: to 300 amp., 7x7 1/8x3 1/4 in., above 300 amp., 7 3/4x8 3/4x4 in. Wt.: to 300 amp., 4 lb.; above 300 amp., 5 lb.

Single Range				
Range	Each	Approx. Resist. Ohms	Inductance Henries	Scale Div.
1	\$56.00	1.15	.00244	100
2	56.00	.287	.00057	100
3	56.00	.128	.00027	150
5	56.00	.0435	.000091	100
10	56.00	.0127	.000023	100
15	60.00	.0066	.000011	150
25	60.00	.0032	.0000033	125
50	62.00	.00117		100
75	62.00	.00085		150
100	65.00	.00047		100
150	68.00	.00034		150
200	71.00	.00034		100
300	77.00	.000172		150
500	85.00	.000054		100

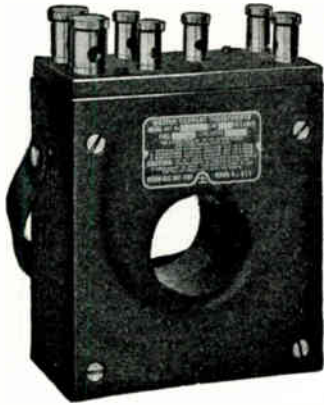
Double Range				
Range	Each	Approx. Resist. Ohms	Inductance Henries	Scale Div.
1/.5	\$71.00	1.15/4.6		100
2/1	71.00	.34/1.36		100
5/2.5	71.00	.052/0.218		100
10/5	71.00	.012/0.045		100

Milliammeters

Single Range									
Range	Each	Approx. Resist. Ohms	In-ductance Henries	Scale Div.	Range	Each	Approx. Resist. Ohms	In-ductance Henries	Scale Div.
50	\$56.00	433	.61	100	250	\$56.00	12	.022	125
75	56.00	123	.28	150	500	56.00	2.25	.006	100
150	56.00	33	.067	150					

Double range milliammeters, prices on application.
 Leather cases: For voltmeters up to and including 300 volts, ammeters up to and including 300 amperes, and all milliammeters, \$11; for voltmeters above 300 volts, \$14; for ammeters above 300 amperes, \$12.

Weston Portable Instruments Model 461 Multi-Range Current Transformers For General Plant Testing



This transformer is for primary current ranges from 10 to 800 amperes inclusive. Four self-contained primary ranges of 10, 20, 50 and 100 amperes are brought out to binding posts. With one turn of the primary through the core opening a primary range of 800 amperes results; with two turns, 400 amperes; and with four turns, 200 amperes, etc. The secondary current rating at normal primary current is 5 amperes.

The normal secondary capacity for Type 1 is 5 volt-amperes, and its

ratio accuracy is sufficiently high for use with Models 155 and 433 Ammeters, or Model 329 and 432 Wattmeters, without correction curves. Type 2 has a normal secondary capacity of 15 volt-amperes, and in addition to its greater secondary capacity, offers superior accuracy. Line potentials up to 2500 volts are permissible for both types. Type 1 is supplied in a black bakelite case and Type 2 in a tan or natural color canvas filler bakelite case.

Size, $6\frac{5}{8} \times 7\frac{7}{8} \times 2\frac{3}{4}$ inches.

When ordering transformer correction curves, always state the model, type and serial number of the instruments to be used. Also give the frequency at which the curves are to be made. If more than one curve is required with different combinations of instruments, list those combinations. Also state the length and size of leads to be used.

Type	1	2
Model 461	each \$73.50	98.00
Weight	pounds $7\frac{1}{4}$	$8\frac{1}{2}$

Weston Portable Instruments Model 539 Miniature Current Transformers For General Plant Testing



This transformer is intended for use with Models 433 and 528 Ammeters. Accurate within 1 per cent from 25 to 150 cycles. For work requiring medium accuracy, it may be used with Model 155. It is not suitable for use with wattmeters for accurate work.

Four self-contained primary ranges of 2, 5, 10 and 20 amperes are selected through a switch; maximum of 200 amperes inserted primary. Secondary current rating at normal primary current is 1 ampere.

Ranges of 200, 100 and 50 amperes are available when the conductor is passed through the transformer one, two or four times respectively.

Capacity, 2 volt-amperes. Frequency, 25 to 150 cycles. Insulation test, 4000 volts for one minute.

Contained in a sturdy red and black bakelite case. A switch is provided for changing the self-contained primary ranges. In addition, a short-circuiting switch is provided for the secondary winding to prevent damage to the transformer if the secondary circuit should be opened while current is on the primary.

Size, $5\frac{1}{4} \times 4\frac{1}{8} \times 1\frac{7}{8}$ inches.

Approximate weight, $2\frac{5}{8}$ pounds.

Model 539 each \$35.00

Weston Portable Instruments Model 489 D.C. Instruments For General Plant Testing



For all-around checking purposes.

Accurate within 2 per cent. Permanent magnet moving coil type. Double range meters have binding posts; triple range meters have pin jacks.

Instruments are enclosed in black bakelite cases. Silver etched dials are $2\frac{3}{8}$ inches long with black markings.

Size, $3\frac{7}{8} \times 3\frac{3}{4} \times 1\frac{1}{2}$ inches.

Approximate weight, 11 ounces.

Voltmeters				Ammeters		
Double Range		Ohms per Volt	Single Range		Scale Div.	
Range Volts	Each	Scale Div.	Range Amp.	Each		
150/7.5	\$13.50	75	1	\$13.50	50	
200/8	15.25	40	10	13.50	50	
200/8	16.25	40	30	13.50	60	
250/50	16.75	50	Double Range			
Triple Range			10/1	\$15.50	50	
150/7.5/3	\$18.75	75/60	15/3	15.50	75/60	
300/7.5/3	19.50	75/60	30/3	15.50	60	

Milliammeters						
Double Range			Single Range			
Range Milli-amp.	Each	Resist. Ohms	Scale Div.	Range Milli-amp.	Each	Resist. Ohms
150/15	\$13.50	7/4.1	75	150/30	\$13.50	7/2.6
						60

Weston Portable Instruments Model 528 A.C. Instruments For General Plant Testing

For all-around checking purposes.

Accurate within 2 per cent. Movable iron type. Unshielded from external magnetic fields. Single and double range meters have binding posts; triple range meters have pin jacks.

Instruments are enclosed in mottled red and black bakelite cases. Size, $3\frac{7}{8} \times 3\frac{3}{4} \times 2\frac{1}{2}$ inches; scale length, $2\frac{1}{2}$ inches.

Approximate weight, 11 ounces.

Voltmeters			
Double Range		Approximate Resist. Ohms	Scale Div.
Range Volts	Each		
150/15	\$13.50	7350/735	30
300/150	18.75	31600/15800	30
600/150	23.25	100000/25000	30
600/300	23.25	100000/50000	30
Triple Range			
150/15/3	\$16.50	8700/150/30	30/30
150/8/4	16.50	10000/80/40	30/40
300/8/4	21.75	43000/80/40	30/40

Ammeters			
Single Range		Resist. Ohms	Scale Div.
Range Amp.	Each		
1	\$13.50	204	50
3	13.50	.0249	30
5	13.50	.0108	50
10	13.50	.0067	50
15	13.50	.003	30
30	15.50	.0016	30
50	15.50	.0014	50
Double Range		Resist. Ohms	Scale Div.
Range Amp.	Each		
15/3	\$21.00	.....	30
15/5	21.00	.....	30/50
30/3	23.00	.....	30
30/5	23.00	.....	30/50

Milliammeters						
Single Range			Double Range			
Range Milli-amp.	Each	Resist. Ohms	Scale Div.	Range Milli-amp.	Each	Resist. Ohms
15	\$13.50	2000	30	100	\$13.50	28
50	13.50	175	50	500	13.50	1.1
						50

Leather Case for Model 528 Instruments each \$2.50

Weston Portable Instruments

**Model 540 Fused 6-Range Volt-Ammeters
For General Plant Testing—For D.C. Only**



Accurate within one per cent. Permanent magnet moving coil type. Contained in bakelite case with hinged cover and leather carrying strap.

All ranges fused for protection from overloads. Voltage ranges protected by single fuse located in a cap. Each of current ranges protected by individual fuse mounted in special compartment covered by hinged back. Ranges are brought out through selector switch to three binding posts, a common +, a current and a potential post. By this arrangement instrument can be so connected to circuit that both current and voltage readings can be taken by turning switch without changing connections. Line is closed at all times when connected to ammeter binding post.

Dimensions, 3¹/₁₆x4⁷/₁₆x2¹/₂ inches; scale length, 2¹/₁₆ inches. Approximate weight, 2 pounds.

RANGES		Scale Div.
Volts	Amperes	
30/3	15/1.5/.15/0.03	60
30/3/1.5	30/3/0.03	60
60/30/6	6/0.6/0.03	60
150/15/1.5	15/1.5/0.15	75
150/15/3	15/1.5/0.15	60
150/15/3	15/1.5/0.3	60
150/15/3	30/3/0.3	60
150/15/3	30/15/3	60
150/30/3	30/3/0.3	60
150/30/3	30/0.6/0.06	60

Extra replacement fuses in assorted lots of one dozen, \$1.00. When ordering, give range of instrument and quantity of fuses desired for each range.

Weston Portable Instruments

**Model 330 A.C. Voltmeters
For General Plant Testing**



In this type of voltmeter, low ranges combined with an unusually high sensitivity are possible. For use wherever current drain caused by instrument must be limited to a low value. Although the high sensitivities of the copper oxide type of voltmeter are not possible with this meter, nevertheless its accuracy is unaffected by wave form and variations in frequencies over relatively wide limits.

Accurate within one per cent at 60 cycles, two percent at 25 to 100 cycles. Iron core dynamometer type. Contained in a mottled red and black bakelite case with hinged cover and leather carrying handle.

A range-changing switch is incorporated for selection of ranges. To eliminate parallax errors and facilitate accurate readings, a knife-edged pointer and mirror scale are used.

Dimensions, 3¹/₁₆x4⁷/₁₆x1¹/₁₆ inches; scale length, 2¹/₁₆ inches. Approximate weight, 1³/₄ pounds.

For measurement of a.c. voltages below .2 volt, the use of Model 482 thermocouple instruments is recommended.

Ranges	Each	Sensitivity Ohms per Volt	Scale Div.
10/5/1	\$55.00	20	50
25/5/1	55.00	20	50
125/25/12.5	60.00	20	50
*125/25/ 5/1	60.00	20	50
150/30/15/1.5	60.00	20	75
150/50/10/1	60.00	20	50

*Conforms with A.R.A. specifications.

Weston Portable Instruments

**Model 45 D.C. Instruments
For General Plant Testing**



For general testing work for rugged service.

Accurate within 1/2 of 1 per cent. Permanent magnet moving coil type. Shielded from external magnetic fields.

Instruments are enclosed in polished hardwood cases provided with hinged covers and carrying handles.

Size, 8x8x4¹/₄ inches; scale length, 5¹/₁₆ inches.

Approximate weight, 9.9 pounds.

Voltmeters

Resistance, 100 ohms per volt, self-contained to 750 volts inclusive; ranges from 750 to 25000 volts may be had by using external multipliers. Voltmeters having a higher sensitivity than 100 ohms per volt available on order.

Single Range		Scale Div.	Range Volts	Each	Scale Div.
* 2-0-2.8	\$60.00	150	150	\$60.00	150
3	60.00	150	300	64.00	150
15	60.00	150	600	72.00	120
Double Range		Scale Div.	Range Volts	Each	Scale Div.
15/3	\$65.00	150	300/150	\$69.00	150
150/3	65.00	150	600/300	77.00	150
150/15	65.00	150	750/150	81.00	150
150/75	65.00	150			
Triple Range		Scale Div.	Range Volts	Each	Scale Div.
150/ 15/3	\$70.00	150	750/300/150	\$86.00	150
300/150/3	74.00	150			

*Scale adapted for use in connection with cadmium test on storage batteries.

Ammeters

Self-contained up to and including 25 amperes; above 25 amperes, with external shunts. Ranges 1.5 to 25 amperes may be had with external shunts, at base price plus price of shunt selected. Specify when desired for use with Weston Rotary Shunt, as an instrument with a special movement having a resistance of 10 ohms and a sensitivity of 5 milliamperes must be supplied for this purpose. This special instrument is supplied without extra charge.

Range Amp.	Each	Scale Div.	Range Amp.	Each	Scale Div.
**Base	\$60.00	...	25	\$67.00	125
1.5	67.00	150	50	67.00	100
3	67.00	150	100	67.00	100
5	67.00	100	150	67.00	150
10	67.00	100	300	68.25	150
15	67.00	150	500	71.25	100

**To determine the price of any other range ammeter not listed, add base price to price of shunt desired.

Milliammeters

Range Milli-amp.	Each	Scale Div.	Resist. Ohms	Range Milli-amp.	Each	Scale Div.	Resist. Ohms
15	\$60.00	150	3 3	300	\$60.00	150	.17
100	60.00	100	.50	750	62.50	150	.07
150	60.00	150	.35				

Leather Case for Instruments shown above...each \$13.00

Weston Portable Instruments

Model 280 D.C. Instruments For General Plant Testing



Accurate within one per cent.
Permanent magnet moving coil type.

Voltmeters and volt-ammeters
have resistances of approximately
100 ohms per volt.

Dimensions, 4.4x4.6x1.5 inches;
scale length, 2¹¹/₁₆ inches. Approximate
weight, 1.1 pounds.

Voltmeters

Range	Each	Scale Div.	Range	Each	Scale Div.
1.2	\$25.00	60	400/40	\$40.00	40
1.5	25.00	75	25/10/2.5	29.00	50
3	25.00	60	30/3/1.5	29.00	60
5	25.00	50	30/15/3	29.00	60
7.5	25.00	75	50/5/2.5	29.00	50
10	25.00	50	50/25/5	29.00	50
15	25.00	75	100/25/2.5	29.00	50
30	25.00	60	100/50/5	29.00	50
50	25.00	50	150/15/1.5	29.00	75
60	25.00	60	150/15/3	29.00	60
75	25.00	75	150/30/3	29.00	60
100	25.00	50	150/60/3	29.00	60
120	25.00	60	150/75/3	29.00	75
150	25.00	75			

Millivoltmeters

50	\$25.00	50	300	\$25.00	60
100	25.00	50	500	25.00	50
150	25.00	75	750	25.00	75
250	25.00	50			

Ammeters

1	\$25.00	50	10/1/0.5	\$29.00	50
1.5	25.00	75	10/5/0.5	29.00	50
3	25.00	60	10/2.5/1	29.00	50
5	25.00	50	15/3/0.15	29.00	60
10	25.00	50	15/3/1.5	29.00	60
15	25.00	75	25/2.5/0.5	29.00	50
30	25.00	60	25/5/2.5	29.00	50
*50	32.00	50	25/10/2.5	29.00	50
*100	32.00	50	25/10/5	29.00	50
*150	32.00	75	30/3/1.5	29.00	60
5/2.5/0.25	29.00	50	30/6/3	29.00	60
10/1/0.1	29.00	50	30/15/3	29.00	60

*Provided with external shunt having a drop of 50 mv.

Milliammeters

Milliammeters with ranges above 30 milliamperes are
shunted and have a drop of approximately 100 mv.

Range	Each	Approx. Resist.	Scale Div.	Range	Each	Approx. Resist.	Scale Div.
1.5	\$26.00	27	75	300	\$25.00	.33	60
5	25.00	12	50	500	25.00	.2	50
10	25.00	10	50	750	25.00	.13	75
25	25.00	1.2	50	30/15/3	30.00	...	60
50	25.00	2.0	50	50/10/1	30.00	...	50
75	25.00	1.33	75	125/25/5	29.00	...	50
100	25.00	1.00	50	150/15/1.5	30.00	...	75
150	25.00	0.66	75	600/120/30	29.00	...	60
250	25.00	0.4	50				

Volt-Ammeters

RANGES				RANGES			
Volts	Each	Amperes	Scale Div.	Volts	Each	Amperes	Scale Div.
30/3/1.5	\$43.00	30/3/1.5	60	150/15/1.5	\$43.00	30/15/1.5	60
30/15/3	43.00	15/3/0.15	60	150/15/1.5	43.00	30/15/1.5	60
30/3/1.5	43.00	30/3/0.3	60	†150/15/3	43.00	15/1.5/0.15	60
50/5/2.5	43.00	10/1/0.1	50	150/15/3	43.00	30/3/1.5	60
50/25/2.5	43.00	25/2.5/0.5	50	150/15/3	43.00	30/15/3	60
†60/30/6	43.00	6/0.6/0.03	60	150/30/3	43.00	30/15/1.5	60
150/15/1.5	43.00	15/1.5/0.15	75	150/30/3	43.00	30/0.6/0.06	60
150/15/1.5	43.00	30/3/1.5	60	150/60/3	43.00	30/6/0.06	60

†For railway and automatic train control testing.

Leather Case for Model 280 Instruments.....each \$3.00

Weston Portable Multi-Purpose Instruments

Model 785 Industrial Circuit Testers

For Circuit Analysis and Maintenance Testing



Has 27 practical, sensitive ranges applicable to all types
of testing.

Especially suited to testing on signal, telegraph, telephone
and communication circuits, and power distribution net-
works, as well as all types of industrial testing.

The meter is a standard 4¹/₂-inch Weston instrument with
a d.c. sensitivity of 50 microamperes. Has sensitivities of
20,000 ohms per volt on d.c., and 1000 ohms per volt on a.c.
ranges. This high sensitivity permits the use of this model
on sensitive relay and vacuum tube circuits without dis-
turbance of the circuit conditions. Rapid selection of ranges
accomplished by marked selector switches.

Can be used for a.c. measurements up to 500 volts and 10
amperes without external transformers. Current trans-
formers can be used with the 1 or 5-ampere range for higher
a.c. measurements. The d.c. ranges can be extended through
the use of external shunts. Ohmmeter ranges operate from a
self-contained battery, and incorporate an adjustment fea-
ture for compensating for variations in battery voltage.

Accuracy on all d.c. ranges guaranteed to be within 2 per
cent up to 500 volts. Accuracy on 1000 volt range, 3 per cent.
Accuracy on all a.c. ranges, guaranteed to be within 3 per
cent on 60 cycles. Slightly less accuracy on 25 and 133 cycles.
Accuracy on ohmmeter ranges guaranteed to be within 2
per cent of linear arc length.

Dimensions, 13x12¹/₂x5¹/₂ inches.

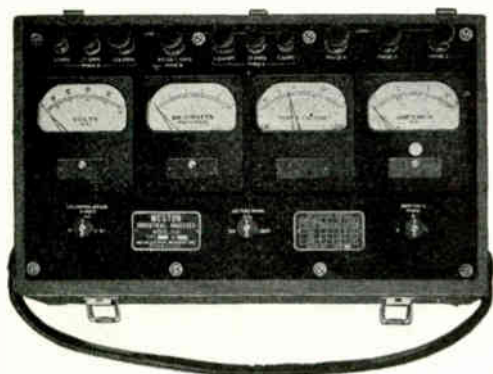
Weight with batteries and oak case, 13¹/₂ pounds.

Model 785, With Oak Carrying Case.....each \$125.00

Model 785, Less Carrying Case.....each 105.00

Volts		RANGES		A.C.		Ohms	
D.C.	A.C.	D.C.	A.C.	D.C.	A.C.		
1	5	50 Micro-Amp.	.....	3,000		
10	15	1 Ma.	.....	5 Amp.	30,000	
50	30	10 Ma.	.....	1. Amp.	300,000	
200	150	100 Ma.	.....	5. Amp.	3 Megohms	
500	300	1 Amp.	.....	10. Amp.	30 Megohms	
1000	500	10 Amp.	.....	.....	.....

Weston Portable Multi-Purpose Instruments
Model 639 A.C. Industrial Analyzers
For Circuit Analysis and Maintenance Testing
Type 2



The model 639 Industrial Analyzer is widely used by plant maintenance men, utility service engineers, electrical contractors and those engaged in general industrial testing or installation work. It is designed to analyze industrial loads by measuring current, voltage and power in single and polyphase circuits as well as power factor in 3-phase circuits.

An analysis of plant load conditions with Model 639 quickly detects over or underloaded motors, indicating that relocating transformers or interchanging motors will effect considerable savings. Four Model 610 instruments (a voltmeter, wattmeter, power factor meter, and an ammeter) are included in its strong oak carrying case. The ammeter is equipped with an adjustable pointer stop which allows the maximum value of starting currents to be quickly determined. Accuracy: voltmeter and ammeter, 1 per cent; power factor meter, 1 per cent; wattmeter, 2 per cent. Scale lengths, 3.5 inches.

Only a few simple connections are necessary to place this instrument in circuit; the maze of interconnecting wires necessary when individual meters are used is eliminated. Basic connection diagrams and operating instructions are contained in one card in the cover of the instrument. A pocket manual, containing additional connection diagrams and detailed information relative to the use of this analyzer, is also furnished.

Model 639 has self-contained potential ranges of 150/300/600 volts, current ranges of 5/25/125 amperes and corresponding wattmeter ranges. External current and potential transformers may be used for extending these ranges. Power factor indications are for 3-phase 3-wire only; .30 lag through unity to .80 lead.

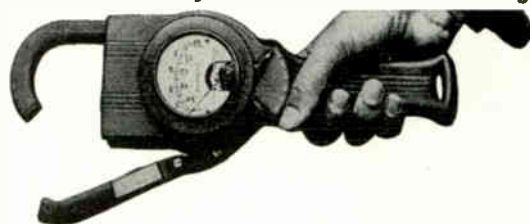
On 220 volt 3-phase circuits the 5-ampere range will take care of loads to 1 hp. on the 2 kw. scale; on the 25-ampere range up to 7½ hp. on the 10 kw. scale; on the 125-ampere range up to 40 hp. on the 50 kw. scale. At 440 or 550 volts, the hp. and kw. ranges are doubled. A full technical description including connection diagrams is available upon request.

Size, 18½x10½x6½.

Approximate weight, 32 pounds.

Model 639 each \$400.00

Weston Portable Multi-Purpose Instruments
Model 633 A.C. Clamp-Ammeters
For Circuit Analysis and Maintenance Testing



Permits the measurement of alternating current without breaking the circuit for the insertion of the conventional ammeter or current transformer. Rapid a.c. measurements can be easily made on insulated or non-insulated conductors.

The design of the Model 633 permits its use as a completely self-contained instrument for direct measurement at the point of application. In addition, through the use of the extension cable feature, readings can be obtained at a point remote from the current carrying conductor.

The clamping jaws of this instrument will accommodate any electrical conductor with a maximum cross-section of 2 inches. Their heavy insulation makes it possible to use the instrument on insulated or non-insulated conductors.

Accurate within 3 per cent when used on frequencies between 50 and 70 cycles. Voltage breakdown test, 3700 volts a.c. Scale length, 2.36 inches.

- Size, 13½x4½x3½ inches. Weight, 3¼ pounds.
- Model 633, Type A-1, for 0-10/25/50/100/250/500 Amperes.....each **\$110.00**
- Model 633, Type A-2, for 0-10/25/100/250/500/1000 Amperes.....each **120.00**
- Model 633, Type A-3, for 0-50/100/250/500/1000/2000 Amperes.....each **130.00**
- 50-Foot Extension Cable, Plug and Receptacle.....each **40.00**
- Leather Carrying Case for Clamp-Ammeter...each **12.00**
- Leather Carrying Case for Cable, Plug and Receptacle.....each **15.00**

Weston Portable Multi-Purpose Instruments
Model 772 Super-Sensitive Analyzers
For Circuit Analysis and Maintenance Testing
Type 2



Model 772 Weston Super-Sensitive Analyzer is for a.c. and d.c. voltage, d.c. current, resistance and decibel measurement in sensitive telephone, telegraph and industrial control relay circuits, and in electronic devices. Has 20,000 ohm per volt sensitivity on d.c. voltage ranges and 1000 ohms per volt on a.c. voltage ranges.

Accurate within 2 per cent on d.c. (1000-volt range, 3 per cent), and 3 per cent on a.c.

Positive action selector switch facilitates rapid range selection. Enclosed in a wooden case with removable cover. Separate compartment for tools and small parts.

Size, 15½x5½x8¾ inches.

Approximate weight, 8½ pounds.

Volts		Ranges		
D.C.	A.C.	Current, D.C. Only	Decibels	Ohms
2.5	2.5	.1 Ma.	-14 to 2	0- 3000
10	10	1 Ma.	- 2 to 14	0-30000
50	50	10 Ma.	12 to 28	0- 3 Meg.
250	250	50 Ma.	26 to 42	0-30 Meg.
1000	1000	250 Ma.	38 to 54	.....
.....	.....	1 Amp.	.....	.....
.....	.....	10 Amp.	.....	.....

Model 772 each \$66.00

Weston Portable Multi-Purpose Instruments
Model 564 Volt-Ohmmeters
For Circuit Analysis and Maintenance Testing
Type 3C



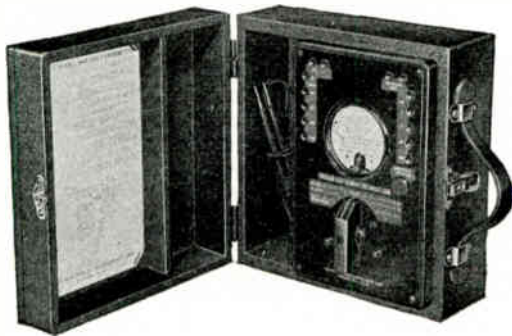
The equipment consists of a Model 301 with four 1000 ohms per volt voltage ranges of 600/300/30/3 and resistance ranges of either 0-100000 and 0-1000 ohms or 0-1000000, 0-100000 and 0-1000 ohms. A self-contained 4½-volt C battery is provided for potential. A pair of 50-inch test leads is shipped with each volt-ohmmeter.

Any change in potential of the self-contained battery can be readily compensated for by short circuiting the pin-jacks X-X and adjusting the pointer to the zero ohm position by turning the voltage adjuster located at the top of the name-plate.

All voltage ranges are brought out to pin-jacks. A toggle switch connects the meter in circuit as a voltmeter or ohmmeter.

Pocket size; shipping weight, 6 pounds.
 Model 564, Type 3C.....each \$35.50
 Carrying Case.....each 7.00

Weston Portable Multi-Purpose Instruments
Model 663 Volt-Ohmmeters
For Circuit Analysis and Maintenance Testing



Supplies the demand for an ohmmeter capable of measuring very low and very high resistances. Accuracy within two per cent.

This volt-ohmmeter is made possible by the use of a super-sensitive instrument requiring only 50 microamperes for full scale deflection. This instrument is connected into circuit network by means of a control switch which selects desired range of six available ohmmeter ranges, or as a milliammeter or voltmeter for d.c. and voltage measurements. Resistance measurements from .1 ohm to 10 meg-ohms; voltage measurements to 1000 volts and current measurements to 100 milliamperes are available.

The scale of the indicating instrument is marked 0-1000 ohms, 0-2.5-5-10 volts and milliamperes. The following ranges are available: 0-5-25-250-2500-25000-250000 ohms center scale; 0-200-1000-10000-100000-1000000 ohms full scale; 0-2.5-10-100-250-500-1000 volts full scale, 1000 ohms per volt; 0-1-5-25-100 milliamperes full scale at 500 millivolts.

Model 663, Less Carrying Case.....each \$65.50
 Model 663 Carrying Case.....each 5.50

Weston Portable Multi-Purpose Instruments
Model 703 Direct-Reading Sight Meters
For Circuit Analysis and Maintenance Testing



Lighting engineers choose this sight meter as the accepted means of measuring illumination in terms of seeing. This compact, direct reading instrument serves as an invaluable aid in the promotion of better sight through the use of better light. It is an ideal tool in the selling of lighting equipment, such as lamps and reflectors, in that it can be used for actual demonstration to show the amount of light available at the location.

The use of a multiplier disc over the cell will extend the range to ten times its normal full scale value.

Model 703, Type 3, for 0-75 Foot-Candles.....each \$19.50
 Model 703, Type 4, for 0-100 Foot-Candles.....each 20.50
 Multiplier Disc for Types 3 or 4.....each .75
 Leather Carrying Case.....each 2.00

Weston Portable Multi-Purpose Instruments
Model 614 Foot-Candle Meters
For Circuit Analysis and Maintenance Testing



A direct reading foot-candle meter calibrated directly in terms of tungsten filament standard lamps. Responds quickly to even slight variations of light.

With this meter any user of light can analyze lighting conditions and determine the correct illumination for each particular and individual purpose.

Does not require the use of batteries, voltage or lamps; has indefinite life with permanent calibration.

The operating equipment consists of an indicating instrument, a three-way toggle switch and a Photronic photo-electric cell all mounted on a bakelite panel. The instrument reads directly in foot-candles and has three ranges, 0-60, 0-120 and 0-600 which are controlled by the three-way toggle switch. The Photronic photo-electric cell or light target is hinged so that it can be lifted from the horizontal to the vertical position.

This meter is always ready for instant use. To measure illumination on a horizontal plane it is only necessary to open cover, hold instrument in a horizontal position with the cell or light target lying in its socket and then take the readings. The toggle switch simplifies switching to any of the three meter ranges so as to give a good scale deflection for any value of light intensity within maximum range of instrument. Available with Viscor Filter (range 0-100/250/500).

Assembled in a moulded black bakelite carrying case equipped with hinged cover and strap handle. Length of case, 7½ inches; height, 3½ inches; width, 2¼ inches.

Weight, 1.8 pounds.
 Model 614, without Viscor Filter.....each \$40.00
 Model 614, with Viscor Filter.....each 47.50

Weston Portable Precision Instruments

For Standardization and High Accuracy Measurements

Model 341 A.C. and D.C. Voltmeters



Electrodynamometer type. Shielded from external magnetic fields. All ranges listed are self-contained.

Regularly supplied as single, double, and triple range voltmeters for use on direct current, or alternating current at frequencies from 15 to 133 cycles.

Power consumption: 150-volt range at 115 volts, 3.9 watts; at 25 or 60 cycles, 3.9 volt-amperes.

Accurate within 1/4 of 1 per cent. Scale length, 5.25 in.

Size, 8x10 1/4 x 5 3/4 inches.

Approximate weight, 11 pound.

Double Range

Range Volts	Each	Scale Div.	Approx. Resist. Ohms	Range Volts	Each	Scale Div.	Approx. Resist. Ohms
5/1	\$155.00	100	10/2	120/60	\$150.00	120	2700/1350
6/3	155.00	150	21/10.5	150/75	150.00	150	3300/1650
15/1.5	155.00	150	30/3	300/150	160.00	150	6700/3350
15/7.5	155.00	150	100/50	600/150	170.00	150	20000/5000
30/15	155.00	150	300/150	600/300	170.00	150	20000/10000

Triple Range

Range Volts	Each	Scale Div.	Approx. Resist. Ohms
75/150/300	\$170.00	150	1675/3350/6700
150/300/600	180.00	150	5000/10000/20000
150/300/750	185.00	150	5000/10000/25000

Leather Case for Model 341.....each \$20.00

For higher ranges, Models 311 or 457 Potential Transformers or external resistors can be used. Instruments for use on frequencies up to 600 cycles are available on special order at \$10.00 extra. In this case, the current drain will be somewhat greater than in standard instruments.

Model 370 A.C. and D.C. Instruments



Electrodynamometer type. Shielded from external magnetic fields.

Model 370 instruments will maintain their guaranteed accuracy when used on direct current, or alternating current within the following frequencies: ammeters, 15 to 133 cycles; single range milliammeters, 15 to 1000 cycles; double range milliammeters, 15 to 133 cycles.

Power consumption: 5-ampere range at 5 amperes; at 60 cycles, 4.5 watts; at 25 cycles, 4.5 volt-amperes;

4.7 volt-amperes; at 25 cycles, 4.5 watts, 4.5 volt-amperes. Accurate within 1/4 of 1 per cent. Scale length, 5.25 inches.

Size, 8x10 1/4 x 5 3/4 inches.

Approximate weight, 10 pounds.

Ammeters

Range Amp.	Each	Scale Div.	Range Amp.	Each	Scale Div.
1/5	\$160.00	100	10/5	\$160.00	100
2/1	160.00	100	20/10	160.00	100
5/2.5	160.00	100			

Ammeters for 1000-cycle service are available on special order at \$16.50 extra.

Milliammeters

Range Milli-amp.	Each	Scale Div.	Approx. Resist. Ohms	Range Milli-amp.	Each	Scale Div.	Approx. Resist. Ohms
15	\$160.00	150	1130	150/75	\$160.00	150	45/110
30	160.00	150	325	300/150	160.00	150	14/14
				500/250	160.00	100	4.5/4.5

Leather Case for Model 370.....each \$20.00

For certified tests and precise laboratory measurements exceeding the self-contained ranges listed, Models 327, 328, or 461 Type 2 Current Transformers are recommended in conjunction with a 5/2.5 or 10/5 ampere instrument. For less exacting requirements, the Model 461 Type 1 Current Transformer will prove satisfactory.

Model 329 Polyphase Wattmeters



Electrodynamometer type. Shielded from external magnetic fields. All ranges listed are self-contained.

Model 329 Polyphase Wattmeter actually consists of two electrically independent single-phase wattmeters having their movable coils mounted on a common shaft, with each coil surrounded by its own system of field coils. They may be used independently

importance for measurements on unbalanced polyphase circuits, or on balanced three-phase circuits at low power factors. They are for use on frequencies from 15 to 133 cycles.

Model 329 is made with double current and triple voltage ranges. Current ranges are changed by means of links, and voltage ranges have independent binding posts. Power measurements on direct current, single-phase a.c. two or three-wire circuits, two-phase three or four-wire circuits, and on three-phase circuits may be made directly.

Power consumption per element: potential circuit at 115 volts, 3 watts; at 25 or 60 cycles, 3 volt-amperes. Current circuit at 5 amperes, 0.81 watt. At 25 cycles, 0.83 volt-ampere and at 60 cycles, 0.95 volt-ampere.

Accurate within 1/2 of 1 per cent. Scale length, 5.25 in.

Size, 9 1/2 x 10 1/2 x 8 1/4 inches.

Approximate weight, 18 pounds.

with scale errors of less than 1/2 per cent, which is of great

Volts	AMPERES				WATT RANGES				
	Series	Normal Multiple	Maximum Series	Maximum Multiple	Field Coils in Series	Field Coils in Multiple	Watt Range Calibrated	Scale Div.	Each
Normal 50-62.5/100-125/200-250	2.5	5	5	10	250/500/1000	500/1000/2000	500	100	\$334.00
Maximum 75/150/300	5	10	10	20	.5/1/2 kw.	1/2/4 kw.	1 kw.	100	334.00
	10	20	20	40	1/2/4 kw.	2/4/8 kw.	1 kw.	100	354.00
Normal 100-125/200-250/500-550	2.5	5	5	10	.5/1/2.5 kw.	1/2/5 kw.	500	100	382.00
Maximum 150/300/600	5	10	10	20	1/2/5 kw.	2/4/10 kw.	1 kw.	100	382.00
	10	20	20	40	2/4/10 kw.	4/8/20 kw.	2 kw.	100	402.00

Leather case for Model 329, \$24.00 each.

For higher ranges, current and potential transformers or multipliers are recommended.

Weston Portable Precision Instruments

Model 310 D.C. and Single Phase A.C. Wattmeters

For Standardization and High Accuracy Measurements



Electrodynamometer type. Shielded from external magnetic fields.

Power consumption, Forms 1 and 3: potential circuit at 115 volts, 2.9 watts; at 25 or 60 cycles, 2.9 volt-amperes. Current circuit at 5 amperes, 0.81 watt; at 25 cycles, 0.83 volt-ampere and at 60 cycles, 0.95 volt-ampere.

Power consumption, Form 2: potential circuit at 115 volts, 4.4 watts. At 25 or 60 cycles, 4.4 volt-amperes. Current circuit at 5 amperes, 3.6 watts; at 25 cycles, 3.7 volt-amperes, and at 60 cycles, 4 volt-amperes.

FORM 1. For use on direct current, and alternating current at frequencies from 15 to 133 cycles. Exactly compensated for temperature changes. Full scale deflection obtained with normal potential and current values.

FORM 2. For low power factor use on frequencies from 15 to 133 cycles. Full scale deflection obtained with 20 per cent power factor.

FORM 3. This instrument will maintain its guaranteed accuracy when used on direct current or alternating current within the following frequencies: ranges between 50 and 100 volts—15 to 600 cycles; above 100 volts, 15 to 1200 cycles. Full scale deflection obtained with normal potential and current values at unity power factor.

Forms 1 and 3 Wattmeters have field coils designed to stand approximately double normal current continuously, and the potential circuits about 1½ times their normal voltage. They have double current ranges equipped with range-changing links and triple voltage ranges having independent binding posts. Form 2 Wattmeters have two potential ranges. All wattmeters have a locking contact key and a reversing switch for measuring three-phase power by the two wattmeter method.

Accurate within ¼ of 1 per cent. Scale length, 5.25 in.

Approximate weight, 12 pounds.

Forms 1 or 3

Volts	AMPERES				WATT RANGES		Watt Range Calibrated	Scale Div.	Each
	NORMAL		MAXIMUM		Field Coils in Series	Field Coils in Multiple			
Maximum	Series	Multiple	Series	Multiple					
75/150/300	.5	1	1	2	25/50/100	50/100/200	50	100	\$187.00
	1	2	2	4	50/100/200	100/200/400	100	100	187.00
	1.25	2.5	2.5	5	62.5/125/250	125/250/500	125	125	187.00
	2.5	5	5	10	125/250/500	250/500/1000	125	125	187.00
	5	10	10	20	250/500/1000	500/1000/2000	500	100	187.00
	10	20	20	40	.5/1/2 Kw.	1/2/4 Kw.	1 Kw.	100	197.00
	20	40	40	80	1/2/4 Kw.	2/4/8 Kw.	1 Kw.	100	202.00
150/300/600	.5	1	1	2	50/100/250	100/200/500	50	100	210.00
	1	2	2	4	100/200/500	200/400/1000	100	100	210.00
	1.25	2.5	2.5	5	125/250/625	250/500/1250	125	125	210.00
	2.5	5	5	10	250/500/1250	500/1000/2500	250	125	210.00
	5	10	10	20	.5/1/2.5 Kw.	1/2/5 Kw.	500	100	210.00
	10	20	20	40	1/2/5 Kw.	2/4/10 Kw.	1 Kw.	100	220.00
	20	40	40	80	2/4/10 Kw.	4/8/20 Kw.	2 Kw.	100	225.00
	30	60	60	120	3/6/15 Kw.	6/12/30 Kw.	3 Kw.	150	225.00
	50	100	75	150	5/10/25 Kw.	10/20/50 Kw.	5 Kw.	100	225.00

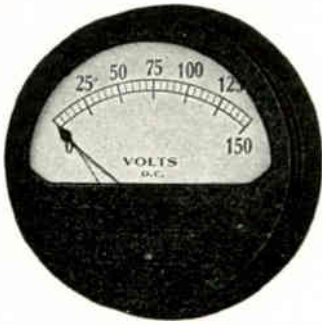
Form 2—For Low Power Factor Use

Max. Volts	MAXIMUM AMPERES		WATT RANGES		Watt Range Calibrated	Scale Div.	Each
	Fields in Series	Fields in Multiple	Fields in Series	Fields in Multiple			
75/150	*.5	1	7.5/15	15/30	15	150	\$182.00
	1	2	15/30	30/60	15	150	182.00
	2.5	5	37.5/75	75/150	75	150	182.00
	5	10	75/150	150/300	150	150	182.00

*This range is not compensated and is useful for special conditions only. The power required to operate this instrument will often be as much, and in some cases more, than the power to be measured. Therefore, all possible information should be given in correspondence previous to placing order.

Leather Case for Model 310.....each \$20.00

Weston Switchboard Instruments
For Power Distribution Panels
7-Inch Round Pattern



Regularly supplied surface type; back connected; pressed steel cases; dull black finish.
Accurate within 1 per cent. Scale, 5.1 inches (130 mm.). Diameter at base, 7 $\frac{3}{4}$ inches.
Flush type available at \$4.00 extra.
Instruments having a nominal diameter of 9 $\frac{1}{2}$ inches, with ranges as listed in this group, are available on special order at \$15.00 extra.

Model 252, D.C. Voltmeters

Permanent magnet moving coil type. Sensitivity, approximately 100 ohms per volt. Self-contained up to 300 volts. Voltmeters can be provided with a second but lower range at \$5.50 extra.

Resistance thermometers for use with external exploring coils can be supplied in Model 252.

Range	Each	Scale Div.	Range	Each	Scale Div.
150	\$39.00	30	300	\$43.00	30

Model 252, D.C. Ammeters

Permanent magnet moving coil type. All ranges are provided with external 50 mv. shunts and 8-foot leads.

Range	Each	Scale Div.	Range	Each	Scale Div.	Range	Each	Scale Div.
10	\$44.50	50	75	\$44.50	30	250	\$44.50	50
15	44.50	30	100	44.50	50	300	45.25	30
25	44.50	50	150	44.50	30	400	47.00	40
50	44.50	50	200	44.50	40	500	48.75	50

Model 260, A.C. Voltmeters

Movable iron type. Power consumption, 150-volt range at 115 volts, 6.8 watts. At 25 or 60 cycles, 6.8 volt-amperes.

For use on frequencies from 25 to 133 cycles. For 500-cycle service, add \$4.00 to the prices below. Self-contained up to 300 volts.

Range	Each	Scale Div.	Range	Each	Scale Div.	Range	Each	Scale Div.
150	\$37.00	30	300	\$41.00	30	600	\$49.00	60

Model 260, A.C. Ammeters

Movable iron type. Power consumption, 5-ampere range at 5 amperes, 1.1 watts. At 25 cycles, 1.1 volt-amperes and at 60 cycles, 1.4 volt-amperes.

For use on frequencies from 25 to 500 cycles. Furnished with ranges from 1 to 10 amperes and scaled to correspond at \$35.00. May also be furnished in any of these ranges, but scaled for use with current transformers, at the same price. When so ordered, specify scale desired and transformer ratio.

Thermo ammeters are available in Model 400; prices on application.

Range	Each	Scale Div.	Range	Each	Scale Div.	Range	Each	Scale Div.
5	\$35.00	50	5	\$35.00	200	5	\$35.00	600
5	35.00	75	5	35.00	300	5	35.00	800
5	35.00	100	5	35.00	400			
5	35.00	150	5	35.00	500			

Wattmeters, Power Factor Meters, Frequency Meters, and Synchroscopes

These instruments, representing a complete line for the conventional switchboard, are available in designs matching the voltmeters and ammeters listed above.

Prices and complete bulletins furnished on application.

Weston Switchboard Instruments
For Power Distribution Panels
6-Inch Rectangular Pattern



Regularly supplied surface type; back connected; pressed steel cases; dull black finish.

Accurate within 1 per cent. Scale 5.12 inches (130 mm.).

Size at base, 5 $\frac{3}{4}$ x6 inches.

Flush or semi-flush type available at \$4.00 extra.

Model 502, D.C. Voltmeters

Permanent magnet moving coil type. Sensitivity, approximately 100 ohms per volt. All ranges listed are self-contained. Can be provided with a second but lower range at \$5.50 extra.

Resistance thermometers for use with external exploring coils can be supplied in Model 502.

Range	Each	Scale Div.	Range	Each	Scale Div.	Range	Each	Scale Div.
15	\$39.00	30	150	\$39.00	30	600	\$51.00	30
25	39.00	50	300	43.00	30			

Model 502, D.C. Ammeters

Permanent magnet moving coil type. All ranges are provided with external 50 mv. shunts and 8-foot leads.

Range	Each	Scale Div.	Range	Each	Scale Div.	Range	Each	Scale Div.
10	\$44.50	50	200	\$44.50	40	1000	\$59.00	50
15	44.50	30	250	44.50	50	1200	62.00	60
25	44.50	50	300	45.25	30	1500	68.00	30
50	44.50	50	400	47.00	40	2000	72.00	40
75	44.50	30	500	48.75	50	2500	81.00	50
100	44.50	50	600	50.50	30	3000	89.00	30
150	44.50	30	750	53.00	30			

Model 496, A.C. Voltmeters

Movable iron type. Power consumption, 150-volt range at 115 volts, 6.8 watts. At 25 or 60 cycles, 6.8 volt-amperes.

For use on frequencies from 25 to 133 cycles. For 500-cycle service, add \$4.00 to the price below. External resistors are required for all ranges. Up to 300 volts, the resistor is mounted directly on the studs. Between 301 and 750 volts, a Type 3 No. 2 box is used. Above 750 volts, a potential transformer is recommended.

Range	Each	Scale Div.	Range	Each	Scale Div.	Range	Each	Scale Div.
150	\$37.00	30	300	\$41.00	30	600	\$49.00	60
250	40.00	25	500	46.00	50			

Model 496, A.C. Ammeters

Movable iron type. Power consumption, 5-ampere range at 5 amperes, 1.1 watts. At 25 cycles, 1.1 volt-amperes, and at 60 cycles, 1.4 volt-amperes.

For use on frequencies from 25 to 500 cycles. Furnished with ranges from 1 to 10 amperes, and scaled to correspond at \$35.00. May also be furnished in any of these ranges, but scaled for use with current transformers, at the same price. When so ordered, specify scale desired and transformer ratio.

Thermo ammeters are available on special order in Model 527; prices on application.

Range	Each	Scale Div.	Range	Each	Scale Div.	Range	Each	Scale Div.
5	\$35.00	5	5	\$35.00	200	5	\$35.00	750
5	35.00	50	5	35.00	300	5	35.00	1000
5	35.00	75	5	35.00	400	5	35.00	1500
5	35.00	100	5	35.00	500			
5	35.00	150	5	35.00	600			

Wattmeters, Power Factor Meters, Frequency Meters, and Synchroscopes

These instruments, representing a complete line for the conventional switchboard, are available in designs matching the voltmeters and ammeters listed above.

Prices and complete bulletins furnished on application.

Weston Switchboard Instruments

Models 267, 269, 271 and 273 Ammeters, Milliammeters and Voltmeters

Fan-Shaped—For Power Distribution Panels—D.C.



Permanent magnet moving coil type; magnetically shielded.

In surface type pressed steel cases with back connections, dull black finish, at prices shown. Model 269, with bakelite case at a surcharge of \$3.50 above regular price. When a bakelite case is used, instrument is not shielded.

Dimensions and Weights

Model	267	269	271	273
Width	4 ³ / ₁₆	5 ⁵ / ₁₆	7 ⁷ / ₁₆	9 ⁹ / ₁₆
Height	3 ³ / ₈	4 ¹ / ₁₆	6 ¹ / ₄	7 ¹³ / ₃₂
Projection from Panel	1 ¹ / ₂	1 ¹ / ₂	1 ¹ / ₄	2 ¹ / ₁₆
Length of Scale	2 ¹ / ₂	4	6	7 ¹⁹ / ₃₂
Approximate Weight	1	1 ¹ / ₂	4	5

Ammeters

Amperes	SCALE DIVISIONS		Model 267 Each	Model 269 Each	Model 271 Each	Model 273 Each
	Models 267-269-271	Model 273				
1	50	100	\$21.75	\$27.00	\$38.50	\$49.50
1.5	75	75	21.75	27.00	38.50	49.50
2	40	100	21.75	27.00	38.50	49.50
3	60	60	21.75	27.00	38.50	49.50
5	50	50	21.75	27.00	38.50	49.50
10	50	100	21.75	27.00	38.50	49.50
15	75	75	21.75	27.00	38.50	49.50
20	40	100	21.75	27.00	38.50	49.50
25	50	50	21.75	27.00	38.50	49.50
30	60	60	21.75	27.00	38.50	49.50
50	50	50	27.25	27.00	38.50	49.50
75	75	75	27.25	32.50	38.50	49.50
100	50	100	27.25	32.50	38.50	49.50
150	75	75	27.25	32.50	38.50	49.50
200	40	100	27.25	32.50	38.50	49.50
300	60	60	28.00	33.25	39.25	50.25
400	40	40	29.75	35.00	41.00	52.00
500	50	50	31.50	36.75	42.75	53.75
750	75	75	35.75	40.75	47.00	58.00
1000	50	100	41.75	45.75	53.00	64.00
1500	75	75	50.75	54.75	62.00	73.00
2000	40	100	54.75	58.75	66.00	77.00
3000	60	60	70.75	75.75	83.00	94.00

Models 267 and 269 have self-contained shunts up to and including 30 and 50 amperes respectively—above these ranges, with external 100 MV. shunts. Models 271 and 273 with external 50 MV. shunts. Prices include shunts.

Milliammeters

Milliamperes						
1	50	100	\$22.75	\$28.00	\$34.00	\$45.00
1.5	75	75	22.75	28.00	34.00	45.00
3	60	60	22.75	28.00	34.00	45.00
5	50	50	21.75	27.00	33.00	44.00
10	50	100	21.75	27.00	33.00	44.00
15	75	75	21.75	27.00	33.00	44.00
20	40	100	21.75	27.00	33.00	44.00
25	50	50	21.75	27.00	33.00	44.00
50	50	50	21.75	27.00	33.00	44.00
75	75	75	21.75	27.00	33.00	44.00
100	50	100	21.75	27.00	33.00	44.00
150	75	75	21.75	27.00	33.00	44.00
200	40	100	21.75	27.00	33.00	44.00
250	50	50	21.75	27.00	33.00	44.00
300	60	60	21.75	27.00	33.00	44.00
500	50	50	21.75	27.00	33.00	44.00

Model 267 ranges above 50 milliamperes are shunted and have a drop of approximately 100 millivolts; Model 269 above 25 milliamperes, 100 millivolts; Model 271 above 25 milliamperes, 50 millivolts; Model 273 above 20 milliamperes, 50 millivolts.

Voltmeters

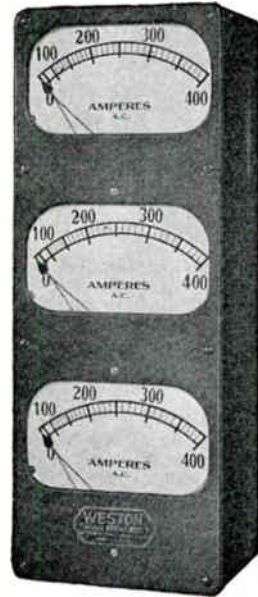
Volts						
3	60	60	\$21.75	\$27.00	\$33.00	\$44.00
8	40	80	21.75	27.00	33.00	44.00
10	50	100	21.75	27.00	33.00	44.00
15	75	75	21.75	27.00	33.00	44.00
20	40	100	21.75	27.00	33.00	44.00
25	50	50	21.75	27.00	33.00	44.00
30	60	60	21.75	27.00	33.00	44.00
50	50	50	21.75	27.00	33.00	44.00
75	75	75	21.75	27.00	33.00	44.00
100	50	100	21.75	27.00	33.00	44.00
130	65	65	21.75	27.00	33.00	44.00
150	75	75	21.75	27.00	33.00	44.00
200	40	100	*23.50	29.75	34.75	45.75
250	50	50	*25.00	31.25	36.00	47.00
300	60	60	*27.00	33.25	37.00	48.00
600	60	60	*31.50	*37.75	*45.00	*56.00

Approximate resistance in ohms per volt: Model 267, 60; Model 269, 75; Model 271, 100; Model 273, 100.

*Supplied with external resistor. Millivoltmeters are also available in the fan-shaped instruments. Prices upon application.

Weston Switchboard Instruments

Model 501 Triplex A.C. Ammeters For Power Distribution Panels



For use on frequencies up to 500 cycles per second. Listed in one range only; employed generally with current transformers, and price shown covers instrument for currents up to 10 amperes with scales figured to correspond to transformers with which employed.

Triplex instruments supplied in any combination of three rectangular a.c. or d.c. switchboard instruments; prices upon application.

Accurate within 1 per cent. Power consumption: voltmeters at 115 volts, 6.8 watts; on 25 or 60 cycles, 6.8 volt-amperes. Ammeters on 5 amperes, 1.1 watts; on 25 cycles, 1.1 volt-amperes; on 60 cycles, 1.4 volt-amperes.

Ranges slightly higher or lower than 5 amperes as required when maximum scale value is somewhat larger or smaller than rated primary capacity of current transformer, can be supplied at no extra charge.

Movable iron type; magnetically shielded. Surface type back connected case of pressed steel, dull black finish.

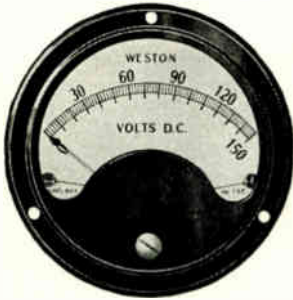
Size at base, 5³/₄x15¹/₂ inches; projection from panel, 4¹/₄ inches; and length of scale, 5¹/₂ inches.

Weight, 17 pounds.

Model 501..... each \$100.00



Weston Panel Instruments
Model 640 Group (Models 643, 642, 641 and 640)
For General Small Panel Requirements



Models 643, 642 and 640 are supplied in flush or surface cases of metal or bakelite. Model 641 Wattmeter is supplied in flush metal or semi-flush metal cases only. When ordering, specify style and whether metal or bakelite case is desired.

D.c. instruments for use on circuits above 750 volts should be specified with bakelite cases when not possible to connect in grounded side of line.

Dimensions: Metal case, 4 3/8 inches diameter; bakelite case, 4 1/8 inches diameter.

Approximate weights: Models 640, 642 and 643, 1 1/4 pounds; Model 641, 1 1/2 pounds.

Model 643 D.C. Voltmeters

Permanent magnet moving coil type. Sensitivity approximately 100 ohms per volt. All ranges listed are self-contained. Model 643 can be provided with a second but lower range at \$5.50 extra.

Accurate within 1 per cent. Scale length, 3.34 inches.

Range	Each	Scale	Range	Each	Scale
Volts		Div.	Volts		Div.
10	\$20.00	50	100	\$21.00	50
15	20.00	75	130	21.50	65
25	20.00	50	150	22.25	75
50	20.00	50	300	27.50	60
80	20.00	40			

Model 643 D.C. Millivoltmeters

Permanent magnet moving coil type. Accurate within 1 per cent. Scale length, 3.34 inches.

Range	Each	Scale	Approx.
Millivolts		Div.	Resistance
			Ohms
50	\$20.00	50	2
100	20.00	50	4
150	20.00	75	6

Model 643 D.C. Ammeters

Permanent magnet moving coil type. Regularly supplied with self-contained shunts up to and including 50 amperes, but can be supplied on special order with external 50 mv. shunts and 8-foot leads. When external shunt instruments are desired, add price of shunt to the instrument price of \$20.

Range	Each	Scale	Range	Each	Scale
Amp.		Div.	Amp.		Div.
1	\$20.00	50	25	\$20.00	50
2	20.00	40	30	20.00	60
3	20.00	60	50	20.00	50
5	20.00	50	75	25.50	75
10	20.00	50	100	25.50	50
15	20.00	75	150	25.50	75

Model 643 D.C. Milliammeters

Permanent magnet moving coil type. Ranges above 25 milliamperes are shunted and have a drop of approximately 100 millivolts.

Accurate within 1 per cent. Scale length, 3.34 inches.

Model 643 D.C. Milliammeters

Range	Each	Scale	Approx.
Milli-amp.		Div.	Resist.
			Ohms
1	\$21.00	50	48
3	21.00	60	9.9
5	20.00	50	4.6
10	20.00	50	2.8
50	20.00	50	.....
100	20.00	50	.....
150	20.00	75	.....
200	20.00	40	.....
250	20.00	50	.....

Model 643 D.C. Microammeters

Permanent magnet moving coil type. Low resistance microammeters in ranges of 200, 300 and 500 microamperes are listed for special applications. The high resistance instruments are recommended for general use.

Accurate within 1 per cent. Scale length, 3.34 inches.

Range	Each	Scale	Approx.
Micro-amp.		Div.	Resist.
			Ohms
30	\$37.00	60	2000
50	35.50	50	2000
100	32.00	50	1550
200	25.25	40	1250
*200	25.25	40	270
500	25.25	50	218
*500	25.25	50	60

*These instruments are used for applications where low resistance is the first consideration, even at the expense of other performance characteristics.

Model 642 A.C. Voltmeters

Movable iron type for use on frequencies from 25 to 133 cycles. For 500 cycle service, add \$4.00 to the prices shown.

Model 642 Instruments for use on circuits above 300 volts should be specified with bakelite cases when not possible to connect in grounded side of line.

Power consumption: 150-volt range at 115 volts, 1.42 watts. At 25 or 60 cycles, 1.42 volt-amperes.

Accurate within 1 per cent. Scale length, 2.8 inches.

Range	Each	Scale	Approx.
Volts		Div.	Resist.
			Ohms
20	\$20.00	40	192
30	20.00	30	360
50	20.00	50	1,000
130	21.50	65	8,100
150	22.25	30	9,400
†250	25.50	25	16,000
†300	27.50	30	19,000
†500	30.50	50	20,600
†600	32.00	60	37,000

†With Type 5 No. 1 External Resistor.
 †With Type 5 No. 2 External Resistor.

Model 642 A.C. Ammeters

Movable iron type for use on frequencies from 25 to 600 cycles. Normally supplied self-contained up to and including 50 amperes. No extra charge when scaled for use with current transformers. When so ordered, specify scale desired and transformer ratio.

Power consumption: 5-ampere range at 5 amperes, 1.3 watts. At 25 or 60 cycles, 1.3 volt-amperes.

Accurate within 1 per cent. Scale length, 2.8 inches.

Model 642 A.C. Ammeters

Range	Each	Scale	Range	Each	Scale
Amp.		Div.	Amp.		Div.
1	\$20.00	50	15	\$20.00	30
2	20.00	40	25	20.00	25
3	20.00	30	30	20.00	30
5	20.00	50	50	20.00	50
10	20.00	50	.....	.....	.....

Model 641 D.C. and Single Phase A.C. Wattmeters

Electrodynamometer type for use on direct current or alternating current at frequencies from 25 to 133 cycles. Instruments are available for 500-cycle service on special order. Model 641 Wattmeters are furnished in flush or semi-flush type, black metal cases only.

Wattmeters may be used with a Y-box on balanced 3-phase, 3-wire circuits. Reactive component on balanced polyphase circuits can also be measured. When ordering, give complete circuit information.

Instruments listed have self-contained current and potential ranges. Higher current ranges require the use of a current transformer. A Type 5 No. 2 resistance box is required for ranges between 251 and 600 volts. Between 601 and 750 volts, a Type 5 No. 3 box is used. Instruments for use on potentials above 750 volts require both current and potential transformers.

Power consumption: potential circuit at 115 volts, 1.96 watts; at 25 or 60 cycles, 1.96 volt-amperes. Current circuit at 5 amperes, 0.67 watt; at 25 cycles, 0.73 volt-ampere and at 60 cycles, 0.98 volt-ampere.

Accurate within 1 per cent. Scale length, 2.8 inches.

Volts	Each	AMPERES	Scale	Scale
		Norm.	Max.	Watts
				Div.
100-150	\$40.00	1	1.5	100
100-150	40.00	2	3	200
100-150	40.00	2	3	300
100-150	40.00	5	7.5	500
200-250	44.00	2	3	400
100-150	40.00	5	7.5	750
100-150	40.00	10	15	1 Kw.
100-150	40.00	10	15	1.5 Kw.
100-150	43.00	20	30	2 Kw.
200-250	44.00	5	7.5	1.5 Kw.
200-250	44.00	10	15	3 Kw.
200-250	47.00	20	30	4 Kw.

Model 640 Thermo-Ammeters

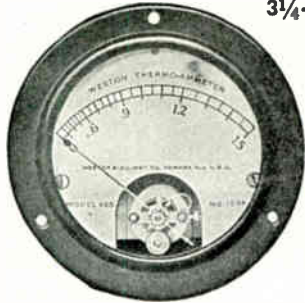
Thermocouple type. Ranges listed are self-contained. Similar or higher ranges can be obtained with external heating elements; prices on request. When external elements are ordered, specify length of leads desired.

Power consumption; 1 to 4 amperes inclusive, varies from 0.2 to 0.4 watt per ampere approximately; 5 amperes and above, 0.15 per ampere.

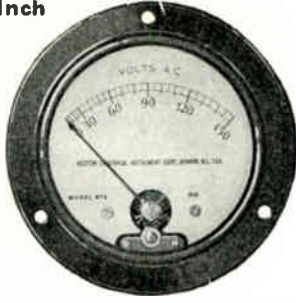
Accurate within 1 per cent. Scale 3.34 inches. Write for information on the use of these instruments at frequencies in excess of those indicated. When circuit conditions do not permit connecting the instrument in the grounded side of the line, bakelite cases should be specified.

Range	Each	Scale	Does Not Exceed
Amp.		Div.	2% Kilocycles
1	\$28.00	50	30,000
2	28.00	40	10,000
3	28.00	60	7,000
5	28.00	50	4,000
10	28.00	50	2,000
15	28.00	75	2,000
20	28.00	40	2,000
25	28.00	50	1,500
30	28.00	60	1,500

Weston Panel Instruments For General Small Panel Requirements 3 1/4-Inch



Model 425



Model 425

Model 476

Thermocouple type for a.c. including radio frequencies. Accurate within 2 per cent.

Bakelite cases should be specified for ammeters and milliammeters when used on circuits above 300 volts when it is not possible to connect instrument in grounded side of line. Bakelite case supplied at no additional cost.

Thermocouple Type Ammeters

Power consumption, 1 to 4 amperes inclusive, varies from .2 to .4 watt per amperes approximately; 5 amperes and above, .15 watt per ampere.

Range Amperes	Each
1	\$16.00
1.5	16.00
2	16.00
3	16.00
5	16.00
10	16.00
15	16.00
20	16.00

Thermocouple Milliammeters

Range Milli-Amp.	Each	Approx. Resist. Ohms
*10	\$50.00	100
*20	50.00	26.5
25	.....	.....
*50	50.00	5
100	.....	.....
†120	18.00	5.2
150	.....	.....
250	18.00	1.8
500	18.00	1.3

*Vacuum couple type.
†For horizontal or not more than 45° mounting—all others for vertical mounting.

Galvanometer

Accurate within two scale divisions. For horizontal or 45° mounting. Milliampere, 115; approximate resistance per volt, 5.2 ohms. Each \$18.00

Model 476

Movable iron type for a.c. only. Accurate within 2%.

A.C. Voltmeters

Range Volts	Approx. Ohms per Volt	Each
1.5	\$9.00	3
3	9.00	6
5	9.00	10.5
8	9.00	10.5
10	9.00	14
15	9.00	14
20	9.00	26
30	9.00	26
50	9.00	52
100	10.00	110
150	11.25	110

†Supplied with external multiplier box.

§Self-contained, four binding post instrument.

¶Four binding post instrument self-contained, for 150/8/4 volts.

External spool resistors for 750/16 volt ranges.

**Three binding post instrument self-contained for 100/4 volts.

External spool resistors (7) for 1000/200/16/8 volts.

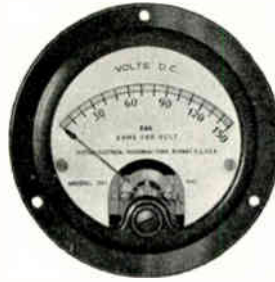
A.C. Ammeters

Range Amp.	Approx. Total Resist.	Each
1	\$9.00	.2030
1.5	9.00	.082
2	9.00	.052
3	9.00	.024

A.C. Milliammeters

Range Milli-amp.	Approx. Total Resist.	Each
15	\$9.00	2000
25	9.00	690

Weston Panel Instruments Model 301 3 1/4-Inch Instruments For General Small Panel Requirements D.C. Model



Permanent moving coil type. Accurate within 2 per cent.

A.C. Model—Rectifier Type
High sensitivity a.c. instruments obtained by using a full-wave copper oxide rectifier with a d.c. movement. Accurate within 5 per cent.

D.C. Voltmeters

Approximate Resistance in Ohms per Volt:
1 to 30 Volts, 62; 50 to 150 Volts, 200; 200 Volts, 250
All ranges listed are self-contained.

Range Volts	Scale Each	Div.	Range Volts	Scale Each	Div.	Range Volts	Scale Each	Div.
1	\$9.00	50	10	\$9.00	50	75	\$9.00	75
1.5	9.00	75	15	9.00	75	100	10.00	50
2	9.00	40	20	9.00	40	130	10.50	65
3	9.00	60	25	9.00	50	150	11.25	75
5	9.00	50	30	9.00	60	200	13.00	40
8	9.00	40	50	9.00	50	.....	.....	.....

Resistance, 1000 Ohms per Volt

Range	Scale	Div.	Range	Scale	Div.
5	\$12.00	50	100	\$12.50	50
8	12.00	40	150	13.25	75
10	12.00	50	200	14.00	40
15	12.00	75	250	14.50	50
25	12.00	50	300	15.00	60
50	12.00	50	*500	17.25	50
75	12.00	75	*750	21.00	75

*Type W.F. instruments. Self-contained wire wound resistors are hermetically sealed for protection against excessive humidity. Supplied in flush bakelite cases.

†Type T.R. instruments, with external tubular resistors.

D.C. Ammeters

Self-contained up to 50 amperes inclusive—drop 50 MV ±5 per cent.

Range	Each	Div.	Range	Each	Div.	Range	Each	Div.
1	\$9.00	50	10	\$9.00	50	2-0-2	\$9.00	40
1.5	9.00	75	15	9.00	75	5-0-5	9.00	50
2	9.00	40	20	9.00	40	10-0-10	9.00	40
3	9.00	60	30	9.00	60	20-0-20	9.00	40
5	9.00	50	50	9.00	50	.....	.....	.....

D.C. Milliammeters

Milliammeters above 30 MA are shunted—drop approximately 100 MV.

Range	Each	Div.	Range	Each	Div.	Range	Each	Div.
1	\$10.00	50	15	\$9.00	75	200	\$9.00	40
1.5	10.00	75	20	9.00	40	300	9.00	60
2	10.00	40	30	9.00	60	500	9.00	50
3	10.00	60	50	9.00	50	†150/15	14.00	75
5	9.00	50	100	9.00	50	†150/30	14.00	60
10	9.00	50	150	9.00	75	.....	.....	.....

‡Double range milliammeters are 3 binding post type, self-contained.

D.C. Microammeters

Range	Each	Div.	Range	Each	Div.
200	\$14.25	40	500	\$14.25	50

Adjusted for use in horizontal or 45° position.

Ohmmeters

These ohmmeters are independent of battery voltage.

Ohm Scale	Each	Battery Voltage	Rheostat Ohms	Ohm Scale	Each	Battery Voltage	Rheostat Ohms
0-1000	\$10.50	1.5	100	0-500000	\$13.50	15	400
0-10000	10.50	4.5	250	0-2000000	15.00	90	400
0-100000	13.50	4.5	400	.....	.....	.....	.....

Rectifier Type Voltmeters

Range Volts	1000 Ohms per Volt	\$2000 Ohms per Volt	Scale Div.	Range Volts	1000 Ohms per Volt	\$2000 Ohms per Volt	Scale Div.
1	.....	\$19.25	50	50	\$17.50	\$19.75	50
1.5	.....	19.25	75	100	17.50	21.50	50
3	\$17.00	19.25	60	150	19.00	23.00	75
5	17.00	19.25	50	300	20.00	.....	60
15	17.00	19.25	75	.....	.....	.....	.....

§Should be used in horizontal or 45° position.

Rectifier Type Milliammeters

Milliampere	Scale Divisions	Each	Milliampere	Scale Divisions	Each
0.5	1	.....	.....
1	2	.....	.....
5	5	.....	.....

A.C. Microammeters

Use in horizontal or 45° positions.
500 Microamperes, 50 Scale Divisions.....each \$19.30
Bakelite cases should be specified for ammeters and milliammeters when used on circuits above 300 volts when it is not possible to connect instrument in grounded side of line. Bakelite case supplied at no additional cost.

Test-O-Lites



The Test-O-Lite contains two electrodes in a neon gas filled bulb, each of which is connected in series with a suitable protecting resistor.

It will indicate voltage—a dim glow is shown when testing 110 volts, and on higher voltages up to 550 volts the glow is brighter in proportion.

Indicates whether a.c. or d.c. If a.c. both electrodes will glow, and if d.c. only one will glow and at the same time indicate the negative pole of the circuit.

Detects the live and ground wires. One can test whether a conductor has tension against ground or not by touching one of the leads with the hand.

Tests resistance leaks. Can be used as a pilot light if connected permanently to any circuit.

Furnished in a bakelite casing. Is no bigger than a fountain pen.

Each..... \$1.50

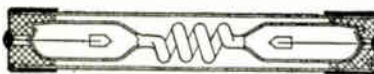
Brach Fixed Neon High Voltage Indicators



TYPE "R"



TYPE "RC"



TYPE "RS"

Consists of a sensitive Neon tube enclosed in a glass protecting case with metal ferrules on each end connected to electrodes of the tube.

Designed for permanent installation. With sufficiently high voltage indicator will give an indication if only one end is attached to line.

Greater brilliance is obtained if a plate or other metal is attached to free end giving greater capacity to electrodes.

Wherever practical the indicator may be placed directly across a high voltage line, provided sufficient resistance is placed in series with tube to limit current to only a few milliamps. Another type of indicator has been developed recently for use across a line (or from line to ground) with a suitable resistance in series.

Also furnished when specified, at \$1.00 extra, with metal strap arranged to act as condenser plate and support one end of tube.

Type R.—Neon tube is a straight tube with electrodes about 3/4-inch apart. Will give an indication on 500 volts.

Type R..... each \$2.50

Type RC.—Neon tube is straight but has a constriction between electrodes. Will give an indication on 500 volts.

Type RC..... each \$2.80

Type RS.—Neon tube is of small bore tubing wound into a spiral. This type gives more illumination than Types R and RC when voltage is sufficiently high to operate same. Requires about 3000 volts for an indication.

Type RS..... each \$3.70

Brach Safe-T-Glow High Tension Detectors



Safe-T-Glow consists of a sensitive Neon tube mounted on cushion supports, the light of this tube being amplified by a mirror reflector. It is sensitive to the presence of high tension current and will start to glow at 2000 volts when exposed terminal is held in contact with high tension wire. With increased voltage the tube will glow at varying distances away from the wire, depending on the voltage.

Model A, with 3-Foot Handle for Circuits 2000 to 35000 Volts..... each

Model B, Same as Model A except with 6-Foot Added Extension to 3-Foot Handle for Circuits from 45000 to 220000 Volts..... each

Minerallac Staticopes

A Safety Device for the Protection of the Electrical Worker

A glow-tube form of electroscope, encased in hard rubber, that will indicate the presence of potential when held in the changing static field such as is found surrounding: alternating current circuits, pulsating direct current, X-Ray equipment, static from belting, high frequency, condenser discharges, automobile ignition, etc.

Pocket Type



The pocket type is intended for all around testing where a sensitive instrument is desired and is specially adapted for use on underground cable work. It is designed to give positive indication on 2000 volts and up in contact with the outside of conductor insulation and at a point several times the flashover distance on non-insulated conductors.

It is understood that materials which destroy or absorb the static field such as the lead on underground cables, metal switch cabinets, grounded framework, etc. should not be between any of the instruments and the conductor being tested.

With this instrument, it is not necessary to touch the conductor carrying high potential.

Each..... \$4.00

Overhead Type



Overhead Type, Extended

The overhead type is a less sensitive instrument, which makes it specially adaptable for overhead lines. It is furnished with a telescopic cover which makes it suitable for direct contact up to and including 2300 volts, when held in the operator's hands.

The red fiber ring is placed on the cover to indicate the handle portion of the instrument.

When closed, this staticope is 7 1/8 inches long and 3/4 inch in diameter; when extended, it is 12 inches long.

Each..... \$6.00

Station Type



The Station Type Staticope is recommended for use in stations, substations and on outdoor high voltage equipment. It is designed to give positive indication on 2000 volts and up.

The breakdown strength of this instrument is well over 75,000 volts. Direct contact is not necessary as the instrument will indicate at a point well over the flashover distance.

Made from hard rubber rod, 24 inches long. Staticope has 12 inches of solid rubber between the handle guard and the internal metal parts. There is no metal exposed.

As the instrument is entirely self-contained and its sensitivity is independent of external capacities, it may be attached to an extension handle to reach inaccessible conductors.

Each..... \$6.00

Periscope Attachment



The periscope attachment is for use with the Station Type Staticope and is recommended when the Staticope is to be used in brightly-lighted places such as outdoors in bright sunshine, when it is difficult to distinguish the glow in the tube.

It can be obtained at a small additional cost, and increases the visibility of the glow considerably.

Each..... \$2.00

G-E Type H Pyranol Distribution Transformers

Single Phase, 60 Cycles, Self-Cooled



This transformer generally affords substantial savings over the total installed cost of oil-filled equipment for all installations indoors or in confined locations.

Filled with Pyranol which is G-E's synthetic insulating and cooling liquid which has all of the desirable characteristics of mineral oil, and in addition is non-inflammable. Pyranol transformers can, therefore, be safely installed indoors or in confined locations without expensive fireproof vaults. They can usually be installed at the load center, giving additional savings by the elimination of long and costly runs of secondary copper,

with improved voltage regulation at the load.

Pyranol transformers have made possible savings on overall installed costs of as high as twenty-three per cent, compared with the cost of oil-filled equipment.

Recognized by the National Electrical Code.

Pyranol is suitable for use only in Pyranol transformers, designed especially for the purpose.

Send for Bulletin GEA-2048 for complete information.

For Nominal 440 and 550-Volt Circuits

APPLICATION.—By connection of the low voltage leads to the bushing terminals inside the tank, transformers are arranged for series or multiple two-wire service or for three-wire service.

SERVICE.—Suitable for outdoor or indoor installation.

Name Plate Voltage Ratings:

Line No. 1—480/456/432 to 120/240
Line No. 2—600/570/540 to 120/240

Line No. 1	Line No. 2	KVA. Cont. 55°C. Rise	Approx. Ship. Wt. Lb. Incl. Pyranol	Line No. 1	Line No. 2	KVA. Cont. 55°C. Rise	Approx. Ship. Wt. Lb. Incl. Pyranol
73X416	73X429	1.5	300	73X423	73X436	37.5	1325
73X417	73X430	3	350	73X424	73X437	50	1650
73X418	73X431	5	450	73X425	73X438	75	1900
73X419	73X432	7.5	475	73X426	73X439	100	2050
73X420	73X433	10	525	73X427	73X440	150	2750
73X421	73X434	15	650	73X428	73X441	200	4100
73X422	73X435	25	975				

For Nominal 2300 and 4000Y-Volt Circuits

APPLICATION.—Transformers in Line No. 1 below are also suitable for operation as follows:

High Voltage Rating—2500/4330Y

Low Voltage Rating—125/250

By connection of the low voltage leads to the bushing terminals inside the tank, transformers having low voltage rating of 120/240 are arranged for series or multiple two-wire service or for three-wire service. Transformers having low voltage rating of 240/480 are suitable for series and multiple service only.

SERVICE.—Suitable for indoor or outdoor installation.

Name Plate Voltage Ratings:

Line No. 1—2400/4160Y to 120/240
Line No. 2—2400/4160Y to 240/480

Line No. 1	Line No. 2	KVA. Cont. 55°C. Rise	Approx. Ship. Wt. Lb. Incl. Pyranol	Line No. 1	Line No. 2	KVA. Cont. 55°C. Rise	Approx. Ship. Wt. Lb. Incl. Pyranol
72X1	72X17	1.5	300	72X 8	72X24	37.5	1325
72X2	72X18	3	350	72X 9	72X25	50	1650
72X3	72X19	5	450	72X10	72X26	75	1900
72X4	72X20	7.5	475	72X11	72X27	100	2050
72X5	72X21	10	525	72X12	72X28	150	2750
72X6	72X22	15	650	72X13	72X29	200	4100
72X7	72X23	25	975				

G-E Type H Pyranol Distribution Transformers

Single Phase, 60 Cycles, Self-Cooled

For Nominal 2300 and 4000Y-Volt Circuits

APPLICATION.—Transformers listed in Line No. 1 below are also suitable for operation as follows:

High Voltage Rating—2500/4330Y/2375/2250

Low Voltage Rating—125/250

By connection of the low voltage leads to the bushing terminals inside the tank, transformers having low voltage rating of 120/240 are arranged for series or multiple two-wire service or for three-wire service. Transformers having low voltage rating of 240/480 are suitable for series and multiple service only.

SERVICE.—Suitable for outdoor or indoor installation.

Name Plate Voltage Ratings:

Line No. 1—2403/4160Y/2280/2160 to 120/240
Line No. 2—2400/4160Y/2280/2160 to 240/480

Line No. 1	Line No. 2	KVA. Cont. 55°C. Rise	Approx. Ship. Wt. Lb. Incl. Pyranol	Line No. 1	Line No. 2	KVA. Cont. 55°C. Rise	Approx. Ship. Wt. Lb. Incl. Pyranol
72X49	72X59	1.5	300	72X56	72X65	37.5	1325
72X50	72X58	3	350	72X57	72X66	50	1650
72X51	72X60	5	450	72X10	72X26	75	1900
72X52	72X61	7.5	475	72X11	72X27	100	2050
72X53	72X62	10	525	72X12	72X28	150	2750
72X54	72X63	15	650	72X13	72X29	200	4100
72X55	72X64	25	975				

For Nominal 2300 and 4000Y-Volt Circuits

SERVICE.—Suitable for outdoor or indoor installation.

Name Plate Voltage Rating: 2400/4160Y to 600

No.	KVA. Cont. 55°C. Rise	Approx. Ship. Wt. Lb. Incl. Pyranol	No.	KVA. Cont. 55°C. Rise	Approx. Ship. Wt. Lb. Incl. Pyranol
72X33	1.5	300	72X40	37.5	1325
72X34	3	350	72X41	50	1650
72X35	5	450	72X42	75	1900
72X36	7.5	475	72X43	100	2050
72X37	10	525	72X44	150	2750
72X38	15	650	72X45	200	4100
72X39	25	975			

For Nominal 2300, 4000Y, 4600 and 8000Y-Volt Circuits

APPLICATION.—Transformers listed in Line No. 1 below are also suitable for operation as follows:

High Voltage Rating—2500/5000/8660Y

Low Voltage Rating—125/250

By connection of the low voltage leads to the bushing terminals inside the tank, transformers having a low voltage rating of 120/240 are arranged for series or multiple two-wire service or for three-wire service. Transformers having low voltage rating of 240/480 are suitable for series and multiple service only.

SERVICE.—Suitable for outdoor or indoor installation.

Name Plate Voltage Ratings:

Line No. 1—2400/4800/8320Y to 120/240
Line No. 2—2400/4800/8320Y to 240/480

Line No. 1	Line No. 2	KVA. Cont. 55°C. Rise	Approx. Ship. Wt. Lb. Incl. Pyranol	Line No. 1	Line No. 2	KVA. Cont. 55°C. Rise	Approx. Ship. Wt. Lb. Incl. Pyranol
72X67	72X83	1.5	300	72X74	72X90	37.5	1350
72X68	72X84	3	350	72X75	72X91	50	1675
72X69	72X85	5	450	72X76	72X92	75	1900
72X70	72X86	7.5	475	72X77	72X93	100	2050
72X71	72X87	10	550	72X78	72X94	150	2750
72X72	72X88	15	650	72X79	72X95	200	4100
72X73	72X89	25	975				

Name Plate Voltage Rating: 2400/4800/8320Y to 600

No.	KVA. Cont. 55°C. Rise	Approx. Ship. Wt. Lb. Incl. Pyranol	No.	KVA. Cont. 55°C. Rise	Approx. Ship. Wt. Lb. Incl. Pyranol
72X 99	1.5	300	72X106	37.5	1350
72X100	3	350	72X107	50	1675
72X101	5	450	72X108	75	1900
72X102	7.5	475	72X109	100	2050
72X103	10	550	72X110	150	2750
72X104	15	650	72X111	200	4100
72X105	25	975			

G-E Type H Pyranol Distribution Transformers

Single Phase, 60 Cycles, Self-Cooled
For Nominal 4000-Volt Circuits

This transformer is to provide service where it is more economical or desirable to connect transformer across phases than between line and neutral on 2300/4000-volt Y circuits. The use of this transformer gives the same service voltages as 10:1 ratio transformers connected between line and neutral.

APPLICATION.—Transformers listed below are also suitable for operation as follows:

High Voltage Rating—4330/4114/3898
Low Voltage Rating—125/250

By connection of the low voltage leads to the bushing terminals inside the tank, transformers are arranged for series or multiple two-wire service or for three-wire service.

SERVICE.—Suitable for outdoor or indoor installation.

Name Plate Voltage Rating:
4160/3952/3744 to 120/240

No.	KVA. Cont. 55°C. Rise	Approx. Ship. Wt. Lb. Incl. Pyranol	No.	KVA. Cont. 55°C. Rise	Approx. Ship. Wt. Lb. Incl. Pyranol
72X298	1.5	300	72X305	37.5	1350
72X299	3	350	72X306	50	1675
72X300	5	450	72X307	75	1900
72X301	7.5	475	72X308	100	2050
72X302	10	550	72X309	150	2750
72X303	15	650	72X310	200	4100
72X304	25	975	.....	.....	.....

For Nominal 6600 and 11000Y-Volt Circuits

APPLICATION.—Transformers listed in Line No. 1 below are also suitable for operation as follows:

High Voltage Rating—7200/12470Y/6875/6545 Kva./6220 Reduced Kva.

Low Voltage Rating—120/240

Transformers listed in Line No. 2 below are also suitable for operation as follows:

High Voltage Rating—7200/12470Y/6875/6545 Kva./6220 Reduced Kva.

Low Voltage Rating—240/480

By connection of the low voltage leads to the bushing terminals inside the tank, transformers having low voltage rating of 115/230 are arranged for series or multiple two-wire service or for three-wire service. Transformers having low voltage rating of 230/460 volts are suitable for series and multiple service only.

SERVICE.—Suitable for outdoor or indoor installation.

Name Plate Voltage Ratings:

Line No. 1—6900/11950Y/6585/6275 Kva./5960 Reduced Kva. to 115/230
Line No. 2—6900/11950Y/6585/6275 Kva./5960 Reduced Kva. to 230/460

Line No. 1 No.	Line No. 2 No.	KVA. Cont. 55°C. Rise	Approx. Ship. Wt. Lb. Incl. Pyranol	Line No. 1 No.	Line No. 2 No.	KVA. Cont. 55°C. Rise	Approx. Ship. Wt. Lb. Incl. Pyranol
72X119	72X135	10	650	72X124	72X140	75	2350
72X120	72X136	15	1000	72X125	72X141	100	2650
72X121	72X137	25	1350	72X126	72X142	150	3100
72X122	72X138	37.5	1625	72X127	72X143	200	4050
72X123	72X139	50	1825	.....	.....	.....	.....

For Nominal 6600 and 11000Y-Volt Circuits

APPLICATION.—Transformers listed below are also suitable for operation as follows:

High Voltage Rating—7200/12470Y/6875/6545

Low Voltage Rating—600

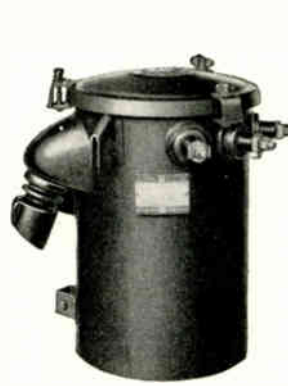
SERVICE.—Suitable for outdoor or indoor installation.

Name Plate Voltage Rating:
6900/11950Y/6585/6275 to 575

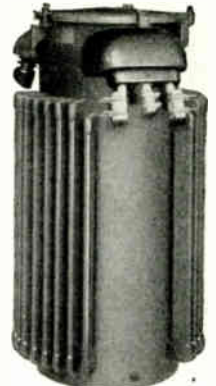
No.	KVA. Cont. 55°C. Rise	Approx. Ship. Wt. Lb. Incl. Pyranol	No.	KVA. Cont. 55°C. Rise	Approx. Ship. Wt. Lb. Incl. Pyranol
72X151	10	650	72X156	75	2350
72X152	15	1000	72X157	100	2650
72X153	25	1350	72X158	150	3100
72X154	37.5	1625	72X159	200	4050
72X155	50	1825	.....	.....	.....

G-E Type H Oil-Immersed Distribution Transformers

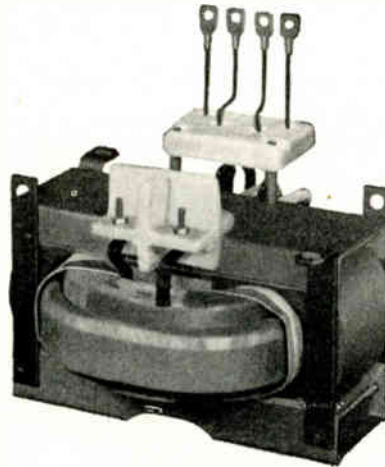
Single Phase, 60 Cycles, Self-Cooled



Small Distribution Transformer with Low Voltage Tank-Wall Bushings



Large Distribution Transformer with Cooling Tubes and Low Voltage Pocket Bushings



Interior Assembly of Spirakore Transformer



Typical Interior Assembly of Larger Transformer Using Distributed Core Construction

The G-E Type H Distribution Transformer offers the highest degree of service reliability, backed by careful attention to all details of manufacture, including the selection and preparation of the raw materials used, the adoption of the most progressive manufacturing processes and the constant improvement of transformer design.

Among the most recent of these improvements is the introduction of the wound-core construction, identified by the G-E trade name Spirakore.

This new design, at present furnished in the smaller sizes, 15,000 volts and below, results in higher efficiency at heavy loads, better voltage regulation at higher power factors, low exciting current, smaller size and lighter weight.

The tanks are of all-welded copper-bearing steel with corrugations or cooling tubes in the larger sizes to provide ample radiating surface for the dissipation of heat. Each tank is given two coats of specially selected Glyptal paint, each coat oven dried, resulting in an attractive and durable finish.

Send for Bulletin GEA-2600 for Complete Information

G-E Type H Oil-Immersed Distribution Transformers

**Single Phase, 60 Cycles, Self-Cooled
For Nominal 440 or 550-Volt Circuits**

APPLICATION.—By connection of the low voltage leads, transformers are arranged for series or multiple two-wire service, or for three-wire service.

SERVICE.—Suitable for outdoor or indoor installation.

SUSPENSION HOOKS.—Hooks are provided with, and included in the weight of all sizes up to 100 kva. inclusive.

Name Plate Voltage Ratings:
Line No. 1—480/455/432 to 120/240
Line No. 2—600/570/540 to 120/240

Line No. 1 No.	Line No. 2 No.	KVA. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt. Lb. Incl. Oil
47X 1	47X14	1.5	3½	165
47X 2	47X15	3	5¼	210
47X 3	47X16	5	6¼	240
47X 4	47X17	7.5	11	315
47X 5	47X18	10	11	380
47X 6	47X19	15	21	545
47X 7	47X20	25	26	805
47X 8	47X21	37.5	32	1020
47X 9	47X22	50	40	1265
47X10	47X23	75	54	1610
47X11	47X24	100	50	1790
47X12	47X25	150	74	2230
47X13	47X26	200	102	3340

For Nominal 1150, 2300 and 4000Y-Volt Circuits

APPLICATION.—Transformers listed below are also suitable for operation as follows:

High Voltage Rating—1250/2500/4330Y

Low Voltage Rating—125/250

By connection of the low voltage leads, transformers are arranged for series or multiple two-wire service, or for three-wire service.

SERVICE.—Suitable for outdoor or indoor installation.

SUSPENSION HOOKS.—Hooks are provided with, and included in weight, of all sizes up to 100 kva., inclusive.

Name Plate Voltage Rating:
1200/2400/4160Y to 120/240

No.	KVA. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt. Lb. Incl. Oil	No.	KVA. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt. Lb. Incl. Oil
47X75	1.5	3½	165	47X81	25	26	805
47X76	3	5¼	210	47X82	37.5	32	1020
47X77	5	6¼	240	47X83	50	40	1265
47X78	7.5	11	315	47X84	75	54	1610
47X79	10	11½	380	47X85	100	50	1790
47X80	15	21	545				

For Nominal 2300 and 4000Y-Volt Circuits

APPLICATION.—Transformers in Line 1 below are also suitable for operation as follows:

High Voltage Rating—2500/4330Y

Low Voltage Rating—125/250

By connection of the low voltage leads, transformers having low voltage rating of 120/240 are arranged for series or multiple two-wire service, or for three-wire service. Transformers having low voltage rating of 240/480 are suitable for series and multiple service only.

SERVICE.—Suitable for indoor or outdoor installation.

SUSPENSION HOOKS.—Hooks are provided with, and included in weight of all sizes up to 100 kva., inclusive.

Name Plate Voltage Ratings:
Line No. 1—2400/4160Y to 120/240
Line No. 2—2400/4160Y to 240/480

Line No. 1 No.	Line No. 2 No.	KVA. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt. Lb. Incl. Oil
47X27	47X43	1.5	3½	165
47X28	47X44	3	5¼	210
47X29	47X45	5	6¼	240
47X30	47X46	7.5	11	315
47X31	47X47	10	11½	380
47X32	47X48	15	21	545
47X33	47X49	25	26	805
47X34	47X50	37.5	32	1020
47X35	47X51	50	40	1265
47X36	47X52	75	54	1610
47X37	47X53	100	50	1790
47X38	47X54	150	74	2230
47X39	.....	200	102	3340
.....	47X55	200	102	3290

G-E Type H Oil-Immersed Distribution Transformers

Single Phase, 60 Cycles, Self-Cooled

For Nominal 2300 and 4000Y-Volt Circuits

APPLICATION.—Transformers listed in Line 1 below are also suitable for operation as follows:

High Voltage Rating—2500/4330Y/2375/2250

Low Voltage Rating—125/250

By connection of the low voltage leads, transformers having low voltage rating of 120/240 are arranged for series or multiple two-wire service, or for three-wire service. Transformers having low voltage rating 240/480 are suitable for series and multiple service only.

SERVICE.—Suitable for outdoor or indoor installation.

SUSPENSION HOOKS.—Hooks are provided with, and included in weight of all sizes up to 100 kva., inclusive.

Name Plate Voltage Ratings:
Line No. 1—2400/4160Y/2280/2160 to 120/240
Line No. 2—2400/4160Y/2280/2160 to 240/480
Line No. 3—2400/4160Y to 600

Line No. 1 No.	Line No. 2 No.	Line No. 3 No.	KVA. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt. Lb. Incl. Oil
47X 97	47X106	47X59	1.5	3½	165
47X 98	47X107	47X60	3	5¼	210
47X 99	47X108	47X61	5	6¼	240
47X100	47X109	47X62	7.5	11	315
47X101	47X110	47X63	10	12	380
47X102	47X111	47X64	15	21	545
47X103	47X112	47X65	25	26	805
47X104	47X113	47X66	37.5	32	1020
47X105	47X114	47X67	50	40	1265
47X 36	47X 52	47X68	75	54	1610
47X 37	47X 53	47X69	100	50	1790
47X 38	47X 54	47X70	150	74	2230
47X 39	.....	.....	200	102	3340
.....	47X 55	47X71	200	102	3290

For Nominal 2300, 4000Y, 4600 and 8000Y-Volt Circuits

APPLICATION.—Transformers listed on line No. 1 below are also suitable for operation as follows:

High Voltage Rating—2500/5000/8660Y

Low Voltage Rating—125/250

By connection of the low voltage leads, transformers having a low voltage rating of 120/240 are arranged for series or multiple two-wire service or for three-wire service. Transformers having low voltage rating of 240/480 are suitable for series and multiple service only.

SERVICE.—Suitable for outdoor or indoor installation.

SUSPENSION HOOKS.—Hooks are provided with and included in weight of all sizes up to 100 kva. inclusive.

Name Plate Voltage Ratings:
Line No. 1—2400/4800/8320Y to 120/240
Line No. 2—2400/4800/8320Y to 240/480
Line No. 3—2400/4800/8320Y to 600

Line No. 1 No.	Line No. 2 No.	Line No. 3 No.	KVA. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt. Lb. Incl. Oil
47X128	47X144	47X160	1.5	3½	165
47X129	47X145	47X161	3	5¼	210
47X130	47X146	47X162	5	6¼	240
47X131	47X147	47X163	7.5	11	315
47X132	47X148	47X164	10	11½	360
47X133	47X149	47X165	15	19½	585
47X134	47X150	47X166	25	33½	860
47X135	47X151	47X167	37.5	36	1085
47X136	47X152	47X168	50	42	1320
47X137	47X153	47X169	75	56	1605
47X138	47X154	47X170	100	52	1770
47X139	.....	.....	150	74	2245
47X140	.....	.....	200	104	3310
.....	47X155	47X171	150	74	2225
.....	47X156	47X172	200	104	3120

G-E Type H Oil-Immersed Distribution Transformers

Single Phase, 60 Cycles, Self-Cooled For Nominal 4000-Volt Circuits

These transformers are to provide service where it is more economical or desirable to connect transformers across phases than between line and neutral on 2300-4000-volt Y circuit. The use of these transformers give the same service voltages as 10:1 ratio transformers connected between line and neutral.

Transformers below, are also suitable for operation as follows:

High Voltage Rating—4330/4114/3898

Low Voltage Rating—125/250

By connection of low voltage leads, transformers are arranged for series, or multiple two-wire service or for three-wire service.

SERVICE.—Suitable for outdoor or indoor installation.

SUSPENSION HOOKS.—Hooks are provided with, and included in weight of all sizes up to 100 kva., inclusive.

Name Plate Voltage Rating: 4160/3952/3744 to 120/240

No.	KVA. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt. Lb. Incl. Oil	No.	KVA. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt. Lb. Incl. Oil
47X115	1.5	3½	165	47X122	37.5	36	1085
47X116	3	5¼	210	47X123	50	44	1320
47X117	5	6¾	240	47X124	75	56	1600
47X118	7.5	11½	315	47X125	100	51	1755
47X119	10	11½	375	47X126	150	74	2230
47X120	15	21	535	47X127	200	104	3310
47X121	25	33½	860				

For Nominal 6600 and 11000Y-Volt Circuits

Transformers listed in Line No. 1 below are also suitable for operation as follows:

High Voltage Rating—7200/12470Y/6875/6545 Kva/6220 Reduced Kva

Low Voltage Rating—120/240

Transformers listed in line 2 below are also suitable for operation as follows:

High Voltage Rating—7200/12470Y/6875/6545 Kva/6220 Reduced Kva

Low Voltage Rating—240/480

By connection of low voltage leads, transformers having low voltage rating of 115/230 are arranged for series or multiple two-wire service, or for three-wire service. Transformers having low voltage rating of 230/460 volts are suitable for series and multiple service only.

SERVICE.—Suitable for outdoor or indoor installation.

SUSPENSION HOOKS.—Hooks are provided with and included in weight of all sizes up to 50 kva., inclusive.

Name Plate Voltage Ratings:

Line No. 1—6900/11950Y/6585/6275 Kva/5960 Reduced Kva to 115/230

Line No. 2—6900/11950Y/6585/6275 Kva/5960 Reduced Kva to 230/460

Line No. 1	Line No. 2	KVA. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt. Lb. Incl. Oil
47X176	47X192	1.5	3½	160
47X177	47X193	3	5¼	205
47X178	47X194	5	7¾	245
47X179	47X195	7.5	10	365
47X180	47X196	10	11½	450
47X181	47X197	15	16	685
47X182	47X198	25	30	980
47X183	47X199	37.5	31	1140
47X184	47X200	50	37	1420
47X185	47X201	75	50	1860
47X186	47X202	100	48	2020
47X187	47X203	150	69	2585
47X188	47X204	200	122	3535

For Nominal 6600 and 11000Y-Volt Circuits

Transformers below, are also suitable for operations as follows:

High Voltage Rating—7200/12470Y/6875/6545 Kva/6220 Reduced Kva

Low Voltage Rating—600.

Name Plate Voltage Rating:

6900/11950Y/6585/6275 Kva/5960 Reduced Kva to 675

No.	KVA. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt. Lb. Incl. Oil	No.	KVA. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt. Lb. Incl. Oil
47X208	1.5	3½	160	47X215	37.5	31	1140
47X209	3	5¼	205	47X216	50	37	1420
47X210	5	7¾	245	47X217	75	50	1860
47X211	7.5	10	365	47X218	100	48	2020
47X212	10	11½	450	47X219	150	69	2585
47X213	15	16	685	47X220	200	122	3535
47X214	25	30	980				

G-E Type H Oil-Immersed Rural-Line Transformers

Single Phase, 60 Cycles, Self-Cooled



Typical of 1½ to 5 KVA. Sizes

This transformer is of the single-high-voltage-bushing design, with one end of the high voltage winding permanently connected to the tank, which in turn is to be solidly grounded by connection to the common system neutral.

This transformer offers the utmost in service reliability as it embodies the same perfection of detail in design and construction as the standard Type H distribution transformer.

Available with or without a support on the tank for mounting a G-E pellet lightning arrester. Sizes 10 kva. and less, without the arrester support, have two sets of mounting brackets on opposite sides of

the tank. Mounting plates for direct bolting to the pole are provided with all sizes and ratings. Sizes 5 kva. and below are of the new wound core construction identified by the G-E trade name Spirakore.

For Nominal 6600 and 11000 Gr-Y-Volt Circuits

APPLICATION.—Transformers listed below are also suitable for operation as follows:

High Voltage Rating—11950 Gr-Y/6900/6585/6275 Kva/5960 Reduced Kva.

Low Voltage Rating—115/230

By connection of the low voltage leads to the bushing terminals inside the tank, transformers are arranged for series or multiple two-wire service or for three-wire service.

SERVICE.—Suitable for outdoor or indoor installation.

MOUNTING PLATES.—Mounting plates are provided with all sizes and are included in the weights given below.

Name Plate Voltage Rating: 12470 Gr-Y/7200/6875/6545 Kva/6220 Reduced Kva to 120/240

No.		KVA. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt. Lb. Incl. Oil
Without Arrester Support	With Arrester Support			
22H 94	72X663	1.5	4½	150
22H 95	72X664	3	5½	190
22H 96	72X665	5	8½	260
22H 97	72X666	7.5	10	380
22H 98	72X667	10	11½	455
72X661	72X668	15	16	665
72X662	72X669	25	31	1030

For Nominal 7620 and 13200 Gr-Y-Volt Circuits

APPLICATION.—Transformers listed below are also suitable for operation as follows:

High Voltage Rating—13750 Gr-Y/7940/7545/7145

Low Voltage Rating—125/250

By connection of the low voltage leads to the bushing terminals inside the tank, transformers are arranged for series or multiple two-wire service or for three-wire service.

SERVICE.—Suitable for outdoor or indoor installation.

MOUNTING PLATES.—Mounting plates are provided with all sizes and are included in the weights below.

Name Plate Voltage Rating: 13200 Gr-Y/7620/7240/6860 to 120/240

No.		KVA. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt. Lb. Incl. Oil
Without Arrester Support	With Arrester Support			
22H101	72X691	1.5	4½	150
22H102	72X692	3	5½	190
22H103	72X693	5	8½	260
22H104	72X694	7.5	10	380
22H105	72X695	10	11½	455
72X689	72X696	15	16	665
72X690	72X697	25	31	1030

Send for Bulletin GEA-2421 for Complete Information

G-E Type HBA Unit-Type Oil-Immersed Distribution Transformers

Single Phase, 60 Cycles, Self-Cooled
1-High-Voltage-Bushing Design



7200 to 120/240 Volts
1-High-Voltage Bushing
Design

For rural line service on solidly-grounded common-neutral circuits.

A thoroughly reliable unit with self-contained lightning protection by means of heavy duty pellet lightning arresters and self-contained over-current protection and indication by means of an oil-immersed low voltage circuit breaker and overload signal lamp.

The following is furnished as standard on sizes 5 kva. and larger: One pellet lightning arrester, low voltage circuit breaker, overload signal lamp, (optional on 1½ and 3 kva. sizes), internal high voltage fuses and through-bolt mounting plates for direct bolting to the pole. The tank must be solidly grounded.

For Nominal 2300 or 4000 Gr-Y-Volt Circuits

APPLICATION.—Transformers listed below are also suitable for operation as follows:

High Voltage Rating—4330 Gr-Y/2500

Low Voltage Rating—125/250

By connection of the low voltage leads to the bushing terminals inside the tank, transformers are arranged for series or multiple two-wire service, or for three-wire service.

SERVICE.—Suitable for indoor or outdoor installation.

MOUNTING PLATES.—Mounting plates are provided with all sizes and are included in the weights given below.

Name Plate Voltage Rating:
4160 Gr-Y/2400 to 120/240

No.	KVA. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt. Lb. Incl. Oil
21H882	1.5	6	220
21H883	1.5	6	220
21H884	3	8¼	275
21H885	3	8¼	275
21H886	5	8	295
21H887	7.5	12	410
21H888	10	11	450
21H889	15	19	610
21H890	25	33	885

For Nominal 2300 or 4000 Gr-Y-Volt Circuits

APPLICATION.—Transformers listed below are also suitable for operation as follows:

High Voltage Rating—4330 Gr-Y/2500/2375/2250

Low Voltage Rating—125/250

By connection of the low voltage leads to the bushing terminals inside the tank, transformers are arranged for series or multiple two-wire service or for three-wire service.

SERVICE.—Suitable for indoor or outdoor installation.

MOUNTING PLATES.—Mounting plates are provided with all sizes and are included in the weights given below.

Name Plate Voltage Rating:
4160 Gr-Y/2400/2280/2160 to 120/240

No.	KVA. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt. Lb. Incl. Oil
21H873	1.5	6	220
21H874	1.5	6	220
21H875	3	8¼	275
21H876	3	8¼	275
21H877	5	8	295
21H878	7.5	12	410
21H879	10	11	450
21H880	15	19	610
21H881	25	33	885

G-E Type HBA Unit-Type Oil-Immersed Distribution Transformers

Single Phase, 60 Cycles, Self-Cooled
1-High-Voltage-Bushing Design

For Nominal 2300, 4000 Gr-Y, 4600 and 8000 Gr-Y-Volt Circuits

APPLICATION.—Transformers listed below are also suitable for operation as follows:

High Voltage Rating—8660 Gr-Y/2500/5000

Low Voltage Rating—125/250

By connection of the low voltage leads to the bushing terminals inside the tank, transformers are arranged for series or multiple two-wire service or for three-wire service.

SERVICE.—Suitable for outdoor or indoor installation.

MOUNTING PLATES.—Mounting plates are provided with all sizes and are included in the weights given below.

Name Plate Voltage Rating:
8320 Gr-Y/2400/4800 to 120/240

No.	KVA. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt. Lb. Incl. Oil
21H891	1.5	6	225
21H892	1.5	6	225
21H893	3	8¼	280
21H894	3	8¼	280
21H895	5	8	300
21H896	7.5	12	415
21H897	10	11½	445
21H898	15	19	630
21H899	25	33	895

For Nominal 6600 and 11000 Gr-Y-Volt Circuits

APPLICATION.—Transformers listed below are also suitable for operation as follows:

High Voltage Rating—11950 Gr-Y/6900/6585/6275 Kva/5960 Reduced Kva.

Low Voltage Rating—120/240

By connection of the low voltage leads to the bushing terminals inside the tank, transformers are arranged for series or multiple two-wire service or for three-wire service.

SERVICE.—Suitable for indoor or outdoor installation.

MOUNTING PLATES.—Mounting plates are provided with all sizes and are included in the weights given below.

Name Plate Voltage Rating:
12470 Gr-Y/7200/6875/6545 Kva/6220 Reduced Kva to 120/240

No.	KVA. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt. Lb. Incl. Oil
21H716	1.5	6¼	235
21H717	1.5	6¼	235
21H718	3	8¼	290
21H719	3	8¼	290
21H720	5	7¾	300
21H721	7.5	14¼	485
21H722	10	13½	520
21H723	15	31½	895
21H724	25	29	1000

For Nominal 7620 and 13200 Gr-Y-Volt Circuits

APPLICATION.—By connection of the low voltage leads to the bushing terminals inside the tank, transformers are arranged for series or multiple two-wire service or for three-wire service.

SERVICE.—Suitable for outdoor or indoor installation.

MOUNTING PLATES.—Mounting plates are provided with all sizes and are included in the weights given below.

Name Plate Voltage Rating:
13200 Gr-Y/7620/7240/6860 to 120/240

No.	KVA. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt. Lb. Incl. Oil
21H725	1.5	6¼	235
21H726	1.5	6¼	235
21H727	3	8¼	290
21H728	3	8¼	290
21H729	5	7¾	300
21H730	7.5	14¼	480
21H731	10	13½	505
21H732	15	31½	890
21H733	25	31	1040

G-E Type HBA Unit-Type Oil-Immersed Distribution Transformers

Single Phase, 60 Cycles, Self-Cooled
2-High-Voltage-Bushing Design



4800 to 120/240 Volts

For Delta circuits, circuits grounded at the substation only, solidly grounded circuits, open Delta circuits, Open Y circuits solidly grounded at the source only and for two-phase, three-wire circuits with grounded neutral.

A thoroughly reliable unit with self-contained lightning protection by means of heavy duty pellet lightning arresters

and self-contained over-current protection and indication by means of an oil-immersed low voltage circuit breaker and overload signal lamp.

Each unit includes two pellet lightning arresters, tank isolating gap, low voltage circuit breaker, overload signal lamp, internal high voltage fuses and suspension hooks for crossarm mounting.

For Nominal 2300 and 4000Y-Volt Circuits

APPLICATION.—Transformers listed below are also suitable for operation as follows:

High Voltage Rating—2500/4330Y
Low Voltage Rating—125/250

By connection of the low voltage leads to the bushing terminals inside the tank, transformers are arranged for series or multiple two-wire service or for three-wire service.

SERVICE.—Suitable for indoor or outdoor installation.

SUSPENSION HOOKS.—Suspension hooks are provided with all sizes and are included in the weights given below.

**Name Plate Voltage Rating:
2400/4160Y to 120/240**

No.	KVA. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt. Lb. Incl. Oil
21H473	1 5	6	235
21H474	3	8 1/4	290
21H475	5	8	310
21H476	7 5	12	425
21H477	10	11	465
21H478	15	19	625
21H479	25	33	900

For Nominal 2300 and 4000Y-Volt Circuits

APPLICATION.—Transformers listed below are also suitable for operation as follows:

High Voltage Rating—2500/4330Y/2375/2250
Low Voltage Rating—125/250

By connection of the low voltage leads to the bushing terminals inside the tank, transformers are arranged for series or multiple two-wire service or for three-wire service.

SERVICE.—Suitable for indoor or outdoor installation.

SUSPENSION HOOKS.—Suspension hooks are provided with all sizes and are included in the weights given below.

**Name Plate Voltage Rating:
2400/4160Y/2280/2160 to 120/240**

No.	KVA. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt. Lb. Incl. Oil
21H480	1 5	6	235
21H481	3	8 1/4	290
21H482	5	8	310
21H483	7 5	12	425
21H484	10	11	465
21H485	15	19	625
21H486	25	33	900

G-E Type HBA Unit-Type Oil-Immersed Distribution Transformers

Single Phase, 60 Cycles, Self-Cooled
2-High-Voltage-Bushing Design

For Nominal 2300, 4000Y, 4600 and 8000Y-Volt Circuits

APPLICATION.—Transformers listed below are also suitable for operation as follows:

High Voltage Rating—2500/5000/8660Y
Low Voltage Rating—125/250

By connection of the low voltage leads to the bushing terminals inside the tank, transformers are arranged for series or multiple two-wire service, or for three-wire service.

SERVICE.—Suitable for outdoor or indoor installation.

SUSPENSION HOOKS.—Suspension hooks are provided with all sizes and are included in the weights given below.

**Name Plate Voltage Rating:
2400/4800/8320Y to 120/240**

No.	KVA. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt. Lb. Incl. Oil
21H487	1 5	6	250
21H488	3	8 1/4	305
21H489	5	8	325
21H490	7 5	12	440
21H491	10	11 1/2	470
21H492	15	19	655
21H493	25	33	920

For Nominal 6600 and 11000Y-Volt Circuits

APPLICATION.—Transformers listed below are also suitable for operation as follows:

High Voltage Rating—7200/12470Y/6875/6545 Kva/6220 Reduced Kva.

Low Voltage Rating—120/240

By connection of the low voltage leads to the bushing terminals inside the tank, transformers are arranged for series or multiple two-wire service or for three-wire service.

SERVICE.—Suitable for outdoor or indoor installation.

SUSPENSION HOOKS.—Suspension hooks are provided with all sizes and are included in the weights given below.

**Name Plate Voltage Rating:
6900/11950Y/6585/6276 Kva/5960 Reduced Kva to 115/230**

No.	KVA. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt. Lb. Incl. Oil
21H354	1 5	10	300
21H355	3	9 1/2	320
21H356	5	9 1/4	335
21H357	7 5	14 1/4	505
21H358	10	13 1/2	540
21H359	15	31 1/2	915
21H360	25	29	1020

For Nominal 7620 and 13200Y-Volt Circuits

APPLICATION.—By connection of the low voltage leads to the bushing terminals inside the tank, transformers are arranged for series or multiple two-wire service or for three-wire service.

SERVICE.—Suitable for outdoor or indoor installation.

SUSPENSION HOOKS.—Suspension hooks are provided with all sizes and are included in the weights given below.

**Name Plate Voltage Rating:
7620/13200Y/7240/6860 to 120/240**

No.	KVA. Cont. 55°C. Rise	Oil Req. Gal.	Approx. Ship. Wt. Lb. Incl. Oil
21H361	1 5	10	300
21H362	3	9 1/2	320
21H363	5	9 1/4	335
21H364	7 5	14 1/4	500
21H365	10	13 1/2	525
21H366	15	31 1/2	910
21H367	25	31	1060

G-E 30,000-Volt 0.5-KVA. Portable Oil Testers



This oil tester affords a compact, convenient, and accurate means for testing oil in the field, as it combines in a single unit, a step-up transformer, a means for gradually raising the test voltage, a voltmeter to measure breakdown values, an automatic circuit breaker, and an oil-testing receptacle.

The successful operation of high voltage oil-insulated apparatus requires that the dielectric strength of the oil be maintained at a high value. Assurance that the oil is always satisfactory dielectrically is possible only by testing oil regularly.

All live parts of the equipment are enclosed and complete safety features assure full protection to the operator.

Furnished complete with 15 feet of 3-conductor attaching cord and plug.

No.	Supply Voltage	Frequency Cycles	Shipping Weight Pounds
63G400	115	50 to 140	100
63G404	115	25 to 60	100
63G401	230	50 to 140	100
63G404	230	25 to 60	100

Send for Bulletin GEA-2935 for complete information.

G-E No. 10-C Oil

G-E No. 10-C Oil is a specially repared insulating and cooling oil for use in transformers, feeder voltage regulators, and oil fuse cutouts.

The development of this oil and the attainment of proper characteristics and uniform quality have required the closest cooperation for many years between G-E engineers and oil refiners and involves a careful selection of proper crude oil, as well as the use and control of special refining processes applicable only to insulating oil.

Refined from selected grades of crude oil by refiners experienced in producing oil for this highly special application, this oil has the characteristics which provide both the cooling and insulating factors essential to transformer operation; it does not affect the transformer insulation, and is unaffected by these insulating materials. An important quality in transformer oil is long service life, the inherent resistance to sludge formation. Only oil known to have such properties should be used for this purpose.

G-E Air-Cooled Transformers

Type M—For Indoor and Outdoor Service

Type D—For Indoor Service Only



Type M



Type D

G-E Air-Cooled Transformers have a wide range of applications on circuits 600 volts and below. Such applications include supplying the proper voltage for special lamps, tools, bells, buzzers, airport lights, brazing, welding, testing and industrial heating equipment. They are also used for insulating circuits to promote safety, operating lights and portable tools from power circuits, boosting voltage, phase changing and many other unusual applications.

In transformers rated 15 kva. and below, as well as auto-transformers of equivalent physical size, the Type M construction is used. It forms a solid, compact unit which dissipates heat from its external surfaces by radiation. In the larger sizes, the Type D, natural-draft construction is used. The transformer is effectively cooled by air currents which enter ventilating louvers in the housing and circulate around the core and coils.

These transformers are built in standard ratings up to 50 kva. and 600 volts, 60 cycles. Special transformers, up to 200 kva. for 60-cycle circuits, are built from an extensive line of standardized parts, economically and for quick delivery. They are applicable to circuits of 600 volts and below.

Type M transformers include a built-in junction box designed for conduit connection or for open wiring. For conduit connection, knockouts are provided in the sides, end, and back of the compartment. For open wiring, a fiber bushing is used in place of the bottom cover of the compartment.

Type D transformers have leads brought out for open wiring, through bushed holes in the side plates. For enclosed wiring, conduits can be run directly into these side plates, or when desired, 90° junction boxes may be used.

Type D transformers are normally arranged for floor mounting, but when desired they can be wall mounted by the use of angle iron brackets.

Send for Bulletin GEA-897 for complete description.

Standard Junction Boxes for Type D Transformers

No.	Each	Conduit Size, In.	Dimensions Inches	Ship. Wt. Lb.
2105285	\$2.00	1½	5½x4½x4¾	3¾
2105286	2.00	2	6½x5¾x5¾	4¾

Wall Brackets for Type D Transformers

For mounting single phase Type D transformers.

Wall Hanger No.	Each	For Transformer KVA.	Ship. Wt. Lb.
4255370G2	\$5.00	25	8
4255370G3	5.00	37.5	9
4255370G4	5.00	50	9½

G-E Type M Service Auto-Transformers

To Supply 115 and 230-Volt Circuits
For Indoor or Outdoor Service
For General Light and Power Service

Single Phase, 60 Cycles, Air-Cooled
Primary 220—230—240 Volts
Secondary 110—115—120—2-Wire or 220/110—230/115—
240/120—3-Wire

Auto-transformers are more economical and smaller than a transformer designed to carry the same load. Within their voltage limitations, they will perform the same function as service transformers with the exception of insulating two circuits. They may be used to obtain 115 volts from a 230-volt circuit, to derive a neutral on a 230-volt 2-wire circuit, or to balance a 115/230-volt 3-wire circuit. They also may be used in banks on polyphase circuits.

Care should be exercised in ordering auto-transformers that the installation will meet local electrical inspector's requirements.

No.	Each	KVA. Output Cont. 55°C. Rise	Depth In.	Wall Space Inches	Approx. Ship. Wt. Lb.
64G2	\$23.00	.500	4 $\frac{5}{8}$	4 $\frac{7}{8}$ x 8 $\frac{3}{8}$	17
64G3	28.00	.750	4 $\frac{5}{8}$	4 $\frac{7}{8}$ x 9 $\frac{5}{8}$	23
64G4	32.00	1	4 $\frac{5}{8}$	4 $\frac{7}{8}$ x 10 $\frac{5}{8}$	27
64G5	40.00	1.5	6 $\frac{1}{8}$	6 $\frac{7}{8}$ x 13	43
64G6	48.00	2	6 $\frac{1}{8}$	6 $\frac{7}{8}$ x 13 $\frac{3}{4}$	51
64G7	60.00	3	6 $\frac{1}{8}$	6 $\frac{7}{8}$ x 15 $\frac{1}{4}$	65
64G8	84.00	5	7 $\frac{3}{4}$	8 $\frac{3}{4}$ x 18 $\frac{1}{4}$	103
64G9	112.00	7.5	7 $\frac{3}{4}$	8 $\frac{3}{4}$ x 20	127
64G10	140.00	10	9 $\frac{7}{8}$	11 $\frac{3}{8}$ x 20 $\frac{1}{4}$	205
64G111	193.00	15	9 $\frac{7}{8}$	11 $\frac{3}{8}$ x 22 $\frac{1}{2}$	255
65G592	291.00	25	12 $\frac{3}{8}$	14 $\frac{3}{8}$ x 26 $\frac{1}{4}$	445

G-E Type M Air-Cooled Transformers

For 32-Volt Applications
For Indoor or Outdoor Service

Single Phase, 60 Cycles
Primary 110/220—115/230—120/240 Volts
Secondary 30.6—32—33.4 Volts

These transformers derive 32-volt circuits from 115 or 230-volt lighting or power circuits; 32-volt portable lamps and portable tools are frequently used in mines, steel plants, meat packing plants and in damp locations to prevent injury in case of accidental grounding of the circuit through the operator's body. The 32-volt lamps are often more economical and have longer life than those rated at higher voltages.

These transformers can also be used as auto-transformers to boost the voltage of circuits. When so connected, the kva. output of each transformer will equal the kva. output listed below, multiplied by $\left(\frac{H.V.}{H.V.-L.V.}\right)$ and the kva. output of a 3-phase bank will be three times that of each unit.

No.	Each	KVA. Output Cont. 55°C. Rise	Depth In.	Wall Space Inches	Approx. Ship. Wt. Lb.
*71G97	\$10.00	.100	3 $\frac{3}{8}$	3 $\frac{5}{8}$ x 4 $\frac{3}{8}$	6 $\frac{1}{2}$
*71G98	13.50	.150	3 $\frac{3}{8}$	3 $\frac{5}{8}$ x 4 $\frac{7}{8}$	8
*71G99	17.00	.200	3 $\frac{3}{8}$	3 $\frac{5}{8}$ x 5 $\frac{1}{4}$	10
61G59	25.00	.250	4 $\frac{5}{8}$	4 $\frac{7}{8}$ x 8 $\frac{1}{2}$	17
61G60	35.00	.500	4 $\frac{5}{8}$	4 $\frac{7}{8}$ x 10 $\frac{3}{8}$	26
61G61	44.00	.750	4 $\frac{5}{8}$	4 $\frac{7}{8}$ x 12 $\frac{5}{8}$	36
61G62	53.00	1	6 $\frac{1}{8}$	6 $\frac{7}{8}$ x 13 $\frac{3}{8}$	46
61G63	66.00	1.5	6 $\frac{1}{8}$	6 $\frac{7}{8}$ x 14 $\frac{3}{4}$	57
61G64	79.00	2	6 $\frac{1}{8}$	6 $\frac{7}{8}$ x 16 $\frac{1}{8}$	73
61G65	106.00	3	7 $\frac{3}{4}$	8 $\frac{3}{4}$ x 18 $\frac{5}{8}$	108
61G66	154.00	5	7 $\frac{3}{4}$	8 $\frac{3}{4}$ x 21 $\frac{1}{2}$	158

*These units are for open wiring and do not have the built-in wiring compartment.

G-E Transformers and Auto-Transformers for Phase Changing

Air-Cooled, 3 to 2, or 2 to 3-Phase, 60 Cycles

Type M—For Indoor or Outdoor Service
Type D—For Indoor Service Only

Phase-changing transformers and auto-transformers are primarily of use when a phase change is made on a distribution system. They permit the economical use of motors and other polyphase equipment which would otherwise become obsolete.

The two lines of auto-transformers are not interchangeable and it is necessary to determine whether the 2-phase circuit is 3-wire or 4-wire in order to select the proper unit. These auto-transformers cannot be used on a 4-wire circuit having the mid-points of the two phases connected together. For this application, the 2-winding transformer is recommended, although especially designed auto-transformers can be furnished.

Type M Transformers

3-Phase—220—230—240 Volts
2-Phase—220—230—240 Volts—3 or 4-Wire

No.	Each	KVA. Output Cont. 55°C. Rise	Depth In.	Wall Space Inches	Approx. Ship. Wt. Lb.
61G77	\$78.00	1	4 $\frac{5}{8}$	4 $\frac{7}{8}$ x 18 $\frac{7}{8}$	57
61G78	144.00	3	6 $\frac{1}{8}$	6 $\frac{7}{8}$ x 25 $\frac{1}{8}$	115
61G79	192.00	5	7 $\frac{3}{4}$	8 $\frac{3}{4}$ x 29 $\frac{3}{4}$	195
61G80	252.00	7.5	7 $\frac{3}{4}$	8 $\frac{3}{4}$ x 32 $\frac{3}{4}$	250
61G81	309.00	10	9 $\frac{7}{8}$	11 $\frac{3}{8}$ x 32 $\frac{3}{8}$	330
63G82	420.00	15	9 $\frac{7}{8}$	11 $\frac{3}{8}$ x 38 $\frac{3}{8}$	490
*63G13	627.00	25	12 $\frac{3}{8}$	14 $\frac{3}{8}$ x 27 $\frac{3}{4}$	925

Type D Transformers

3-Phase—220—230—240 Volts
2-Phase—220—230—240 Volts—3 or 4-Wire

63G14	\$873.00	37.5	†30	†20 x 36	850
63G15	1107.00	50	†30	†22 x 40	1050

§Type M Auto-Transformers for 2-Phase 4-Wire

3-Phase—220—230—240 Volts
2-Phase—220—230—240 Volts—4-Wire

64G43	\$41.00	1	4 $\frac{5}{8}$	4 $\frac{7}{8}$ x 12 $\frac{3}{8}$	23
64G44	66.00	3	4 $\frac{5}{8}$	4 $\frac{7}{8}$ x 15 $\frac{3}{8}$	37
64G45	81.00	5	4 $\frac{5}{8}$	4 $\frac{7}{8}$ x 19 $\frac{1}{4}$	57
64G46	99.00	7.5	6 $\frac{1}{8}$	6 $\frac{7}{8}$ x 20 $\frac{3}{4}$	67
64G47	116.00	10	6 $\frac{1}{8}$	6 $\frac{7}{8}$ x 22 $\frac{1}{8}$	82
64G48	147.00	15	6 $\frac{1}{8}$	6 $\frac{7}{8}$ x 25 $\frac{1}{8}$	127
64G49	198.00	25	7 $\frac{3}{4}$	8 $\frac{3}{4}$ x 29 $\frac{1}{8}$	180
64G50	264.00	37.5	7 $\frac{3}{4}$	8 $\frac{3}{4}$ x 33 $\frac{1}{8}$	260
65G675	321.00	50	9 $\frac{7}{8}$	11 $\frac{3}{8}$ x 33 $\frac{3}{8}$	380

§Type M Auto-Transformers for 2-Phase 3-Wire

3-Phase—220—230—240 Volts
2-Phase—220—230—240 Volts—3-Wire

64G52	\$45.00	1	4 $\frac{5}{8}$	4 $\frac{7}{8}$ x 12 $\frac{3}{8}$	25
64G53	72.00	3	4 $\frac{5}{8}$	4 $\frac{7}{8}$ x 16 $\frac{1}{8}$	45
64G54	92.00	5	6 $\frac{1}{8}$	6 $\frac{7}{8}$ x 20	58
64G55	114.00	7.5	6 $\frac{1}{8}$	6 $\frac{7}{8}$ x 22 $\frac{1}{4}$	83
64G56	137.00	10	6 $\frac{1}{8}$	6 $\frac{7}{8}$ x 23 $\frac{3}{8}$	100
64G57	171.00	15	7 $\frac{3}{4}$	8 $\frac{3}{4}$ x 27	140
64G58	240.00	25	7 $\frac{3}{4}$	8 $\frac{3}{4}$ x 30 $\frac{3}{8}$	200
64G59	320.00	37.5	9 $\frac{7}{8}$	11 $\frac{3}{8}$ x 32 $\frac{3}{8}$	320
65G676	395.00	50	9 $\frac{7}{8}$	11 $\frac{3}{8}$ x 35 $\frac{3}{8}$	415

*Separate main and teaser (weight per bank, dimensions per unit).

†Height.

‡Floor space.

§Care should be exercised in ordering auto-transformers so that the installation will meet local electrical inspector's requirements.

G-E Type AIRS Induction Voltage Regulators

For Indoor Service

Single Phase, 60 Cycles, Air-Cooled



Large Automatic

This is an indoor-type, natural-draft, air-cooled, induction voltage regulator for secondary circuit regulation and for testing and industrial service.

Automatic regulators can be used where lighting and power are both supplied from the same source; the regulator will maintain illumination at correct levels by compensating for voltage drop due to changes in lighting loads, or changes in load on the power feeders.

Hand operated or manually controlled motor operated regulators can be used wherever a convenient source of variable voltage is required for various industrial processes. Send for Bulletin GEA-3057 for complete information.

A complete line of larger voltage regulating equipment for every point in the distribution or transmission circuit is offered. Send for Bulletin GEA-2762 for complete information on this line.



Small Hand Operated



Small Motor Operated

**For Secondary Circuit Regulation
Continuous Rated, Automatically Operated**

10% Raise and 10% Lower Regulation
120 Volts

No.	Each	KVA. Cont. 55°C. Rise	Load Amp. at ±10% Regulation	Ship. Wt. Lb.
73X766	\$588.00	1.2	100	*135
73X767	656.00	2.4	200	*200
73X768	722.00	3.6	300	*250
73X769	1494.00	6	500	500
73X770	1632.00	9	750	660
73X771	1770.00	12	1000	860
1240 Volts—5/10%; or 240/120 Volts, 3-Wire—10%				
73X772	\$588.00	1.2	50/50	*130
73X773	656.00	2.4	100/100	*200
73X774	722.00	3.6	150/150	*250
73X775	1494.00	6	250/250	500
73X776	1632.00	9	375/375	660
73X777	1770.00	12	500/500	860
480 Volts				
73X778	\$588.00	1.2	25	*130
73X779	656.00	2.4	50	*200
73X780	1440.00	4.8	100	500
73X781	1550.00	7.2	150	660
73X782	1660.00	9.6	200	860
73X783	1770.00	12	250	860

*Weights do not include control panel which is separately mounted. Shipping weight of control panel is 30 pounds.

†These regulators have 2 series windings, each of which will carry 50% of the rated kva.

‡Require an extra potential transformer for contact-making voltmeter. For 480-volt regulators, standard potential transformer No. 70X147 can be supplied at \$35.00 each.

Any of the above regulators can be supplied equipped for line-drop compensation at a price addition of \$132.00 each.

G-E Type AIRS Induction Voltage Regulators

For Indoor Service

Single Phase, 60 Cycles, Air-Cooled

**For Secondary Circuit Regulation
Continuous Rated, Automatically Operated**

10% Raise and 10% Lower Regulation
600 Volts

No.	Each	KVA. Cont. 55°C. Rise	Load Amp. at ±10% Regulation	Ship. Wt. Lb.
73X784	\$606.00	1.5	25	*165
73X785	690.00	3	50	*250
73X786	1494.00	6	100	660
73X787	1632.00	9	150	860
73X788	1770.00	12	200	860

*Weights do not include control panel which is separately mounted. Shipping weight of control panel is 30 pounds.

‡Require an extra potential transformer for the contact-making voltmeter. For 600-volt regulators, standard potential transformer No. 70X148 can be supplied at \$36.00 each.

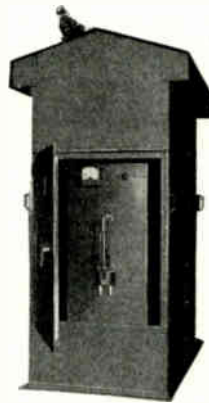
Any of the above regulators can be supplied equipped for line-drop compensation at a price addition of \$132.00 each.

**For Testing and Industrial Service
Rated for Intermittent (1 Hr.) Service**

100% Raise and 100% Lower Regulation
Hand Operated—120/240 Volts

No.	Each	KVA. Cont. 55°C. Rise	LOAD AMP. AT ±100% REGULATION	Ship. Wt. Lb.
			120 V.	240 V.
73X761	\$250.00	1.2	10	5
73X762	284.00	2.4	20	10
73X763	334.00	4.2	35	17.5
73X764	386.00	6	50	25
73X765	1082.00	12	100	50
Motor Operated—120/240 Volts				
73X803	\$292.00	1.2	10	5
73X804	326.00	2.4	20	10
73X805	376.00	4.2	35	17.5
73X806	428.00	6	50	25
73X807	1190.00	12	100	50

G-E Pyranol Capacitors for Power-Factor Improvement



Large Outdoor Rack-Type

Pyranol capacitors are used to counteract low power-factor caused by heavy inductive loads, and are especially suitable on systems having low power-factor where attention and maintenance needed for a synchronous condenser is scarcely warranted.

Pyranol is non-inflammable; therefore, Pyranol capacitors afford maximum degree of safety.

Built for 230 up to 13800 volts in standard equipment, and for higher voltages for special applications.

Capacitors range in size from .5 up to 1260 kva.—from the small enclosed units especially suited for connection to motor terminals, up to units for pole mounting; also large rack-type capacitors for either indoor or outdoor service.

Rack-type capacitors consist of standard single phase units arranged in racks, complete with fuses and discharge devices. Fusible switches are supplied for connecting and disconnecting the smaller capacitors, and cut outs and circuit breakers are supplied for the larger capacitors.

Send for Bulletins GEA-2742 and GEA-2860 for complete information.

G-E Pyranol Capacitors

For Low Voltage Industrial Applications

Enclosed Dust-Tight Capacitor Units, Class EDT

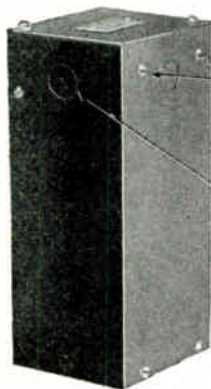
Single-Phase or Polyphase, 60 Cycles

230 Volts, .5 to 7.5 Kva.; 460 and 575 Volts, 1 to 15 Kva.

This capacitor unit, Class EDT, is for indoor service where it is desired to improve power-factor directly at individual motors or other small loads. Group installations consisting of a small number of enclosed units can be made if the kva. required exceeds that of a single unit.

G-E enclosed capacitor units, while applicable to all small loads, are particularly suited for use with individual motors. Connected directly across the motor terminals, the capacitors can be installed without separate switches.

For larger loads, or for connection to a plant feeder, enclosed units may be grouped in a bank. However, if an application requires a group of individual units, a small rack-type equipment (Class SR or Class DTSR) is recommended. The latter, at about the same price, presents a neater and more compact installation.



Small Rack-Type Capacitor Equipment, Class SR and DTSR

Single-Phase or Polyphase

230 Volts, 15 to 90 Kva.; 460 and 575 Volts, 30 to 180 Kva.

For use where small blocks of improvement capacity, requiring a group of individual units, are desired. These equipments are available for: indoor service, outdoor service; or in dust-tight designs for use in textile mills, grain elevators, feed mills, etc.

In the improvement of plant power-factor, it is very often desired to locate capacitor equipment in one group on the low-voltage circuit, or perhaps in several smaller groups, governed by the particular plant arrangement and engineering considerations. The total kva. rating generally exceeds the output of a single individual capacitor unit. For

Dust-Tight Design
Class DTSR

such applications, a group of units is mounted in a rack, and provided with buses for the connection of the individual units to one another, and to the line. An important adjunct to the rack and individual unit is a switch which must be selected not only as a means of disconnecting, but also as a circuit-interrupting device adequate for the fault current obtainable at the point of installation of the capacitor equipment.

Large Rack-Type Capacitor Equipments, Class LR

230 Volts, 135 to 630 Kva.; 460 and 575 Volts, 270 to 1260 Kva.

Large rack-type capacitor equipments, Class LR, afford a means of applying large blocks of power-factor improvement capacity as, for example, in substations or large industrial plants. These equipments are available for either indoor or outdoor service.

The individual capacitor units used are essentially the same in details of design and construction as those furnished with the small rack-type equipments, Class SR and Class DTSR.

Complete Information and Prices Furnished on Application

G-E Pyranol Capacitors

For High Voltage Industrial Applications

Small Rack-Type Capacitor Equipments, Class SR

Single-Phase or Polyphase

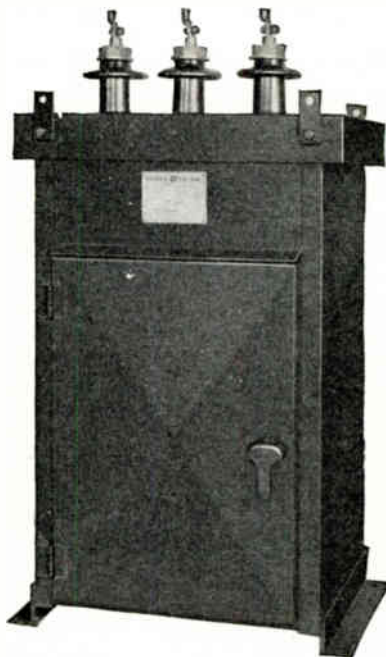
2400 to 4800 Volts, 30 to 180 Kva.; 7200 to 13,800 Volts, 90 and 180 Kva.

For use on indoor circuits where small blocks of improvement capacity are desired.

In the application of capacitors on circuits 2300 volts and higher in small industrial plants, ratings 180 kva. and less are often desired. The small rack-type equipments (Class SR) are ideal for this purpose, and in large plants a number of these installed at various load centers may prove more advantageous than one large equipment.

Pole-Type Capacitor Equipments, Class PT

2400 to 4800 Volts, 30 to 180 Kva.; 7200 to 13,800 Volts, 90 and 180 Kva.



For use on outdoor circuits where small blocks of improvement capacity are desired.

In applying capacitors on outdoor primary circuits for small industrial plants, ratings 180 kva. and less are often desired for either pole or platform mounting. This is especially the case where the power is metered on the primary side of the transformer bank. The pole-type equipments (Class PT) are ideal for this purpose, and in larger plants, a number of these installed at various points may prove more advantageous than one large equipment.

The Class PT equipments for this service have been designed after careful consideration of the general practices throughout the country in the construction and voltage rating of outdoor overhead distribution systems.

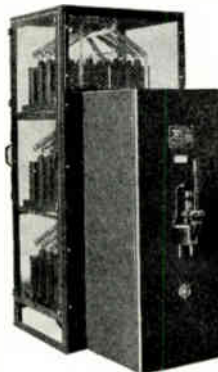
Large Rack-Type Capacitor Equipments, Class LR

Single-Phase or Polyphase

2400 to 13,800 Volts, 270 to 1260 Kva.

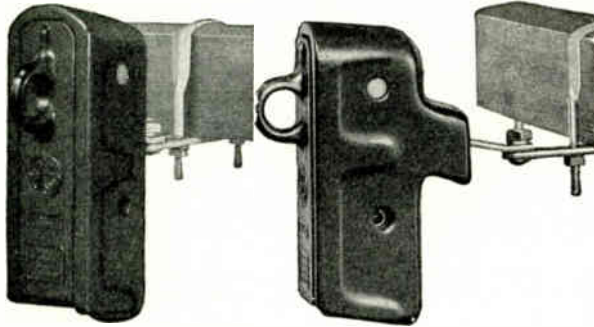
Large rack-type capacitor equipments (Class LR) afford a means of applying large blocks of improvement capacity which are frequently desirable in substations or large industrial plants. These equipments are available for either indoor or outdoor service.

The illustration shows a completely assembled capacitor equipment with oil circuit breaker enclosed in steel cubicle.



Complete Information and Prices Furnished on Application

G-E Enclosed Indicating and Drop-Out Fuse Cutouts



5000 Volts, 50 Amperes

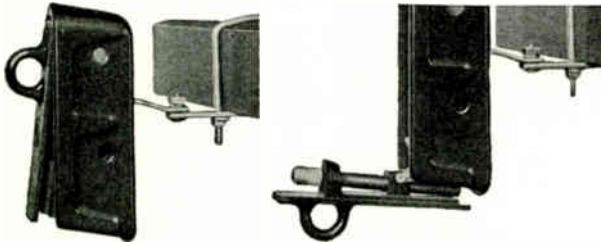
7500/12, 500 Gr-Y Volts, 50 Amperes

Indicating and Drop-Out Fuse Cutouts, with Clamp-Type Crossarm Hangers

This cutout provides for positive indication of outages in either of two ways, depending on preference:

AS AN INDICATING CUTOUT. When a fuse link melts, the door opens at the bottom sufficiently to give a visual indication that the circuit is open.

WHEN USED AS A DROP-OUT CUTOUT. The door opens to a horizontal position. This not only gives indication that the circuit is open, but also removes the fuse holder from the circuit. In this position, the door and fuse holder are isolated, and the open end of the fuse holder is protected from even a driving rain.



Cutout In Indicating Position

Cutout In Drop-Out Position

The change from the indicating to drop-out operation is easily and quickly made. All current transfer contacts are silver plated.

Exclusive features are: complete interchangeability of three doors—indicating and drop-out door with single fuse holder, automatic reclosing door with two fuse holders, and disconnecting-blade door; the same doors can be used with either 5000-volt or 7500/12,500 Gr-Y volt cutouts in the same ampere rating.

Cutout Complete with Fuse Holder

No.	Each	*Voltage Rating	†Current Rating, Amperes	Type of Hanger	Ship. Wt. Lb.
9F6A14	\$11.30	5000	50	Clamp	11
9F6A104	11.30	5000	50	Unit Mounting	11
9F6A114	11.30	5000	50	Hook	11
9F6A154	11.30	5000	50	Comb. Crossarm	11
9F6A24	14.25	7500/12,500 Gr-Y	50	Clamp	12
9F6A22	14.25	7500/12,500 Gr-Y	50	Combination Pole	12
9F6A204	14.25	7500/12,500 Gr-Y	50	Unit Mounting	12
9F6A214	14.25	7500/12,500 Gr-Y	50	Hook	12
9F6A254	14.25	7500/12,500 Gr-Y	50	Comb. Crossarm	12
9F6A26	14.25	7500/12,500 Gr-Y	50	Pole	12
9F6A3	25.00	5000	100	Clamp	26
9F6A4	30.00	7500/12,500 Gr-Y	100	Clamp	33

*Cutouts rated 7500/12,500 Gr-Y volts may be used on grounded neutral circuits where the voltage that an individual cutout has to interrupt does not exceed 8 kv. and where the insulation to ground meets operating requirements.

†The interrupting capacity of 50-ampere cutouts is 1200 rms. amperes at 60 cycles; 100-ampere cutouts, 3000 rms. amperes at 60 cycles.

Send for Bulletin GEA-3448 for Complete Description

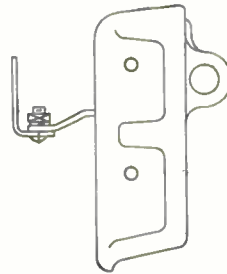
G-E Enclosed Indicating and Drop-Out Fuse Cutouts

Hangers

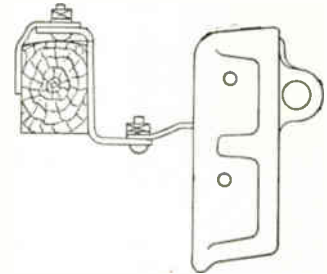
The clamp-type crossarm hanger for the 50-ampere fuse cutout provides for mounting the cutout either in a vertical position or at an angle. In either position, the cutout can be turned to any desired horizontal angle.

The 100-ampere cutout, being heavier than the 50-ampere cutout, is arranged for vertical mounting only. Its hanger is identical with that of the smaller cutouts except that the arm has only one hole, and the parts are proportionately stronger.

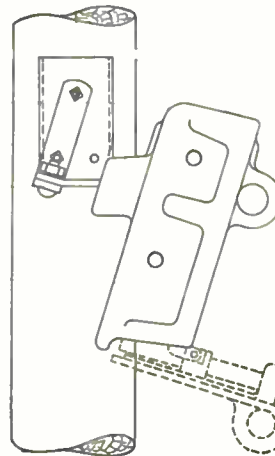
In addition to the clamp-type crossarm hanger, 50-ampere indicating and drop-out fuse cutouts are available with hangers for different types of mounting, as shown in the sketches below.



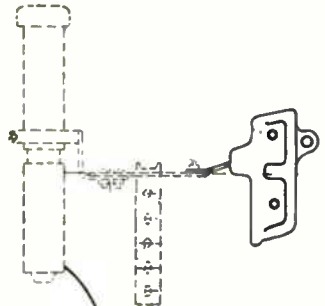
Unit Mounting Hanger



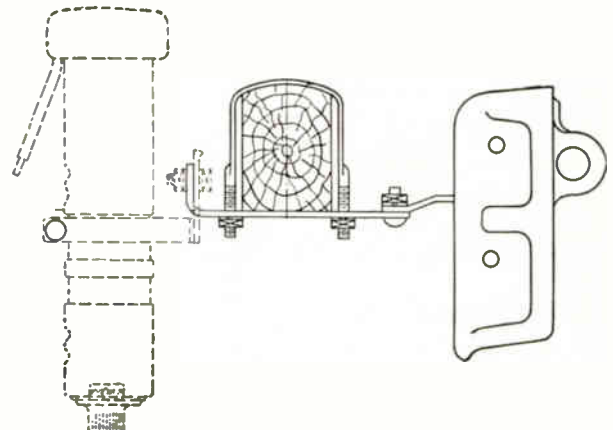
Hook-Type Crossarm Hanger



Pole-Mounting Hanger



Combination Pole Hanger
(T-Bracket Not Included with Cutout)



Combination Crossarm Hanger

G-E Enclosed Indicating and Drop-Out Fuse Cutouts

With Disconnecting-Blade Door



No. 3995930G1 100-Ampere Disconnecting-Blade Door, for 50-Ampere Cutouts

G-E enclosed indicating and drop-out fuse cutouts can easily be converted into disconnecting switches by substituting a disconnecting-blade door, complete with a flexible copper connector, for the door and fuseholder. These disconnecting doors are not designed to open the circuit while carrying load current, but will interrupt the transformer exciting current.

A disconnecting door installed in a 50-ampere cutout permits the cutout to be used as a 100-ampere disconnecting switch. One installed in the 100-ampere cutout can be used as a 200-ampere disconnecting switch. Where the circuit is to remain disconnected for a period of time, the flexible connector is uncoupled from the upper terminal on the door, pulled down and then the spring-actuated contact arm is pushed back and securely hooked to the door so that it is completely out of the circuit when the door is closed. The flexible connector then protrudes from the bottom of the cutout, giving positive visual indication that the circuit is disconnected.

Cutout with Disconnecting Blade Instead of Fuse Holder

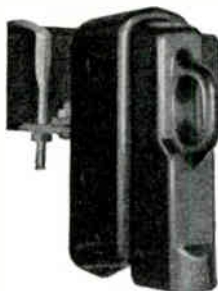
No.	Each	*Voltage Rating	Current Rating, Amperes	Type of Hanger	Ship. Wt. Lb.
9F6A13	\$10.30	5000	100	Clamp	11
9F6A23	13.25	7500/12,500 Gr-Y	100	Clamp	12
9F6A33	24.00	5000	200	Clamp	26
9F6A43	29.00	7500/12,500 Gr-Y	200	Clamp	33

*Cutouts rated 7500/12,500 Gr-Y volts may be used on grounded neutral circuits where the voltage that an individual cutout has to interrupt does not exceed 8 kv. and where the insulation to ground meets the operating requirements.

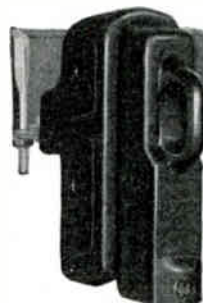
Parts for Enclosed Indicating and Drop-Out Fuse Cutouts

No.	Each	Description	Cutout Voltage Rating	Cutout Current Rating, Amperes
3993462G1	\$1.50	Fuse Tube Including Metal Sleeve and Cap Assembled...	5000 or 7500/12,500 Gr-Y	50
3993462G2	2.50			100
2928558G4	6.00	Door Complete with Toggle Mechanism and Fuse Holder.	5000 or 7500/12,500 Gr-Y	50
3906372G2	10.00			50
3995930G1	5.00	Door Complete with Disconnecting Blade, Rated 100 Amperes.....	5000 or 7500/12,500 Gr-Y	50
3995924G1	9.00	Door Complete with Disconnecting Blade, Rated 200 Amperes.....	5000 or 7500/12,500 Gr-Y	100

G-E Reclosing Fuse Cutouts



5000 Volts, 50 Amperes



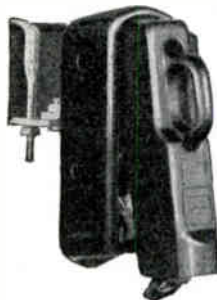
7500/12,500 Gr-Y Volts, 50 Amperes

Reclosing Fuse Cutouts with Clamp-Type Crossarm Hangers
The G-E reclosing fuse cutout restores service within one second after a temporary fault, by a second fuse link which is connected in the circuit after the first fuse link blows. This interruption is so brief that motors and other devices will continue in service.

If the line is patrolled after a storm, and a cutout found that indicates the first fuse has blown, this fuse link can be easily renewed by the use of a jumper, without interrupting service.

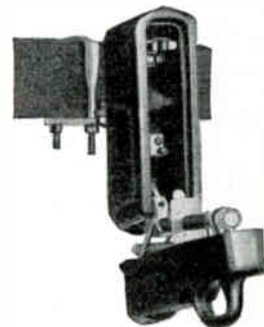
When the first fuse link is blown, positive visual indication is given by a red indicator which projects below the door and is readily visible from the ground. In addition, the door of the 50-ampere cutout is pushed out at bottom.

When the second fuse link is blown, the reclosing door drops out to a horizontal position, indicating that the circuit is open. All current transfer contacts are silver plated.



Cutout in Indicating Position

The cutout is entirely sleet-proof and will restore service after a temporary fault by connecting the second fuse link into the circuit under the most severe sleet conditions, with the door firmly frozen shut.



Cutout in Drop-Out Position

Cutout Complete with Two Fuse Holders and †Clamp-Type Crossarm Hanger

No.	Each	*Voltage Rating	†Current Rating Amperes	Ship. Wt. Lb.
9F6R100	\$27.00	5000	50	13
9F6R200	30.25	7500/12,500 Gr-Y	50	14
9F6R300	55.00	5000	100	32
9F6R400	60.00	7500/12,500 Gr-Y	100	36

*Cutouts rated 7500/12,500 Gr-Y volts may be used on grounded neutral circuits where the voltage that an individual cutout has to interrupt does not exceed 8 kv. and where the insulation to ground meets the operating requirements.

†The interrupting capacity of 50-ampere cutouts is 1200 rms. amperes at 60 cycles; 100-ampere cutouts, 3000 rms. amperes at 60 cycles.

‡These cutouts in 50-ampere ratings can be supplied on order with any of the special hangers listed for the enclosed indicating and drop-out fuse cutouts.

Complete Reclosing Door for Use with G-E Indicating and Drop-Out Fuse Cutout, 5000 or 7500/12,500 Gr-Y Volts

The same housing is used as with the standard G-E enclosed indicating fuse cutouts. Therefore, the reclosing door can be installed on any 50 or 100-ampere indicating and drop-out cutout now in service.

No. 73X710, for 50-Ampere Cutout..... each \$22.00
No. 73X854, for 100-Ampere Cutout..... each 40.00

Send for Bulletin GEA-3448 for Complete Description

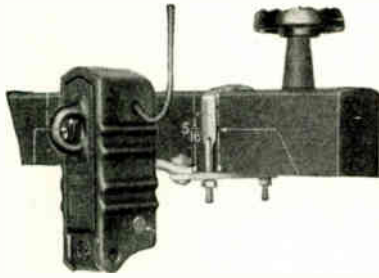
G-E Porcelain-Enclosed Non-Indicating Fuse Cutouts

The G-E porcelain-enclosed fuse cutout provides a high degree of overcurrent protection under all conditions.

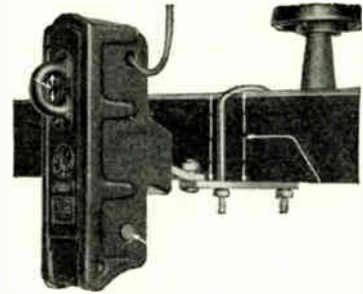
Housing is made of G-E wet-process porcelain. Barriers, which mesh with barriers on the door, prevent hot conducting gases from bridging the space between the contacts. Textolite door.

Full floating contact clips and terminals are self-aligning. All current carrying contacts are silver plated.

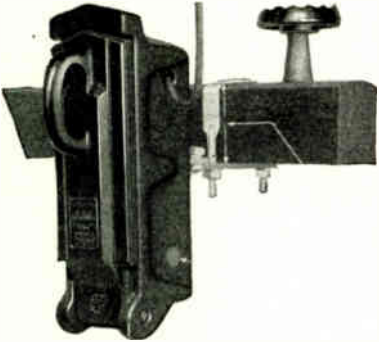
The fuse-holder tube consists of a vulcanized fiber tube over which is wound laminated Textolite having a linen-fabric base. In this way, a strong, dense, and homogeneous tube without molding seams is produced.



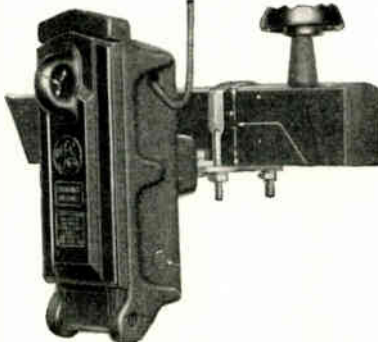
No. 6X2433A, 50-Ampere, 5000 Volts



No. 6X242A, 50-Ampere, 7500/12500 GR-Y Volts



No. 6X241A, 100-Ampere, 5000 Volts



No. 6X240A, 100-Ampere, 7500/12500 GR-Y Volts

Cutout Complete with Fuse Holder

No.	Each	*Voltage Rating	†Current Rating Amperes	Type of Hanger	Shp. Wt. Lb.
6X2433A	\$11.30	5000	50	Clamp	10
6X2436A	11.30	5000	50	Unit Mounting	10
6X2435A	11.30	5000	50	Hook	10
6X24313A	11.30	5000	50	Comb. Crossarm	10
6X242A	14.25	7500/12,500 Gr-Y	50	Clamp	13
6X2426A	14.25	7500/12,500 Gr-Y	50	Pole	13
6X241A	25.00	5000	100	Clamp	30
6X240A	30.00	7500/12,500 Gr-Y	100	Clamp	31

Cutout with Disconnecting Blade Instead of Fuse Holder

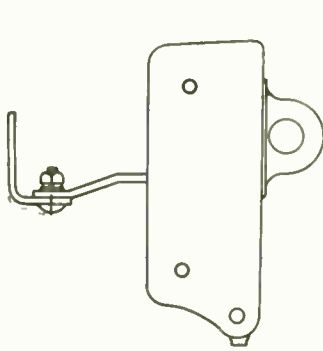
6X2432A	\$10.30	5000	100	Clamp	11
6X2422A	13.25	7500/12,500 Gr-Y	100	Clamp	14
6X2412A	24.00	5000	200	Clamp	32
6X2402A	29.00	7500/12,500 Gr-Y	200	Clamp	33

†The interrupting capacity of 50-ampere cutouts is 1200 rms. amperes at 60 cycles; 100-ampere cutouts, 3000 rms. amperes at 60 cycles.

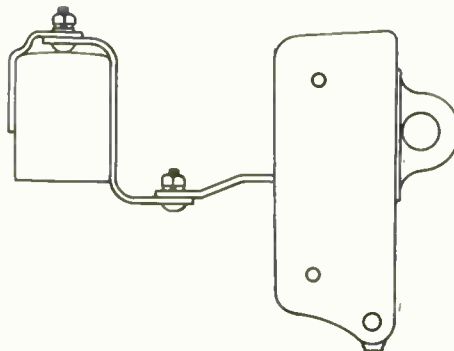
*Cutouts rated 7500/12,500 Gr-Y volts may be used on grounded neutral circuits where the voltage that an individual cutout has to interrupt does not exceed 8 kv. and where the insulation to ground meets operating requirements.

Hangers

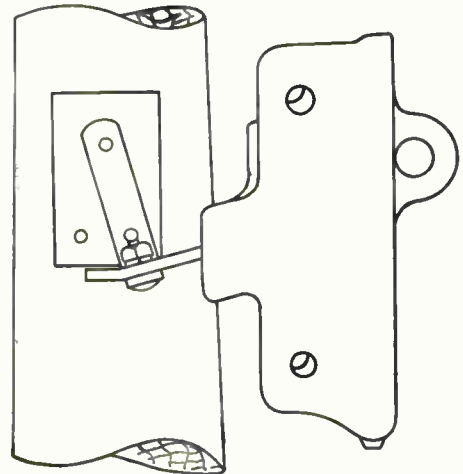
In addition to the clamp-type crossarm hanger illustrated above, 50-ampere porcelain enclosed non-indicating fuse cutouts are available with hangers for different types of mounting as shown in the sketches below.



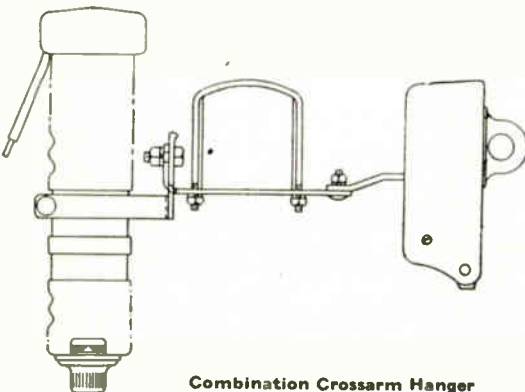
Unit Mounting Hanger



Hook-Type Crossarm Hanger



Pole-Mounting Hanger



Combination Crossarm Hanger

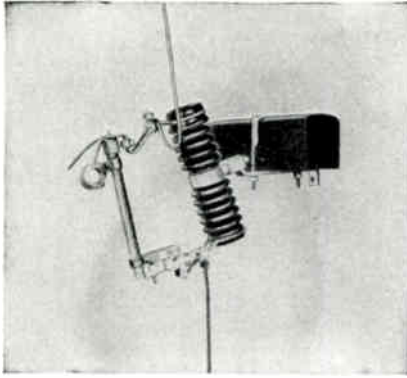
The clamp-type crossarm hanger for the 50-ampere fuse cutout provides for mounting the cutout either in a vertical position or at an angle. In either position, the cutout can be turned to any desired horizontal angle. The 100-ampere cutout, being heavier than the 50-ampere cutout, is arranged for vertical mounting only. Its hanger is identical with that of the smaller cutouts except that the arm has only one hole, and the parts are proportionately stronger.

Parts for Porcelain-Enclosed Non-Indicating Fuse Cutouts

No.	Each	Description	Cutout Voltage Rating	Cutout Current Rating, Amperes
9F4A3	\$3.00	Fuse Holder	5000	50
9F4A2	3.00		7500/12,500 Gr-Y	50
9F4A1	5.00		5000	100
9F4A1	5.00		7500/12,500 Gr-Y	100
29X843	2.00	100-Ampere Disconnecting Blade	5000	50
29X842	2.00	200-Ampere Disconnecting Blade	7500/12,500 Gr-Y	50
29X841	4.00		5000	100
29X841	4.00		7500/12,500 Gr-Y	100

Send for Bulletin GEA-2390 for Complete Description

G-E Open Fuse Cutouts



The G-E open fuse cutout gives a positive indication that the circuit is open, whenever a fuse link is blown, by causing the fuse holder to drop to a horizontal position.

The cone on the fuse-holder cap maintains contact for sufficient time after the fuse link melts to assure complete interruption of the short-circuit current within the fuse-holder tube.

An automatic latch incorporated in the toggle mechanism prevents the fuse holder from falling out of the support during the recoil resulting from expulsion action.

The switch-hook socket permits the use of any standard switch hook. The fuse holder need not be touched by hand until it is completely removed from the fuse support.

Fuse-holder tube can easily be replaced without renewing the switch-hook socket or toggle mechanism. This tube is a combination tube similar to that used with a porcelain-enclosed cutout and will withstand the direct action of the weather. In the open position, the tube is not under electrical stress.

Cutout Complete with Fuse Holder

No.	Each	*Voltage Rating	†Current Rating, Amperes	Type of Hanger	Ship. Wt. Lb.
9F3B5	\$14.20	5000	100	Clamp	13
9F3B1	19.00	7500/12,500	50	Clamp	15
9F3B7	19.00	7500/12,500	50	Pole	15
9F3B9	19.00	7500/12,500	50	Comb. Pole	15
9F3B3	19.00	7500/12,500	100	Clamp	15
9F3B6	19.00	7500/12,500	100	Pole	15
9F3B2	23.60	15,000	50	Clamp	18
9F3B8	23.60	15,000	50	Pole	18
9F3B10	23.60	15,000	50	Comb. Pole	18
9F3B4	23.60	15,000	100	Clamp	18
9F3B11	23.60	15,000	100	Pole	18

*Cutouts rated 7500/12,500 Gr-Y volts may be used on grounded neutral circuits where the voltage that an individual cutout has to interrupt does not exceed 8 kv. and where the insulation to ground meets operating requirements.

†The interrupting capacity of 50-ampere cutouts is 1200 rms. amperes at 60 cycles; 100-ampere cutouts, 2000 rms. amperes at 60 cycles.

Fuse Holder Only for Open Fuse Cutouts

No.	Each	Cutout Voltage Rating	Cutout Current Rating, Amperes
9F4B5	\$7.00	5000	100
9F4B1	8.00	7500/12,500 Gr-Y	50
9F4B3	8.00	7500/12,500 Gr-Y	100
9F4B2	9.00	15,000	50
9F4B4	9.00	15,000	100

Switch Hook

A malleable iron switch hook mounted on a 42-inch treated maple pole. Suitable for the operation of open or enclosed fuse cutouts.

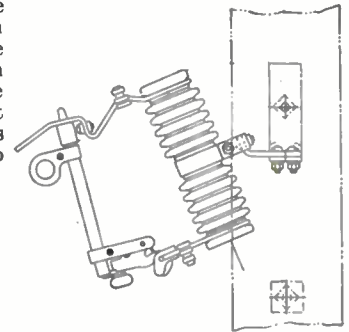
No.	2928531G2
Each.	\$5.00
Shipping Weight.	3 pounds

Send for Bulletin GEA-1816 for Complete Description

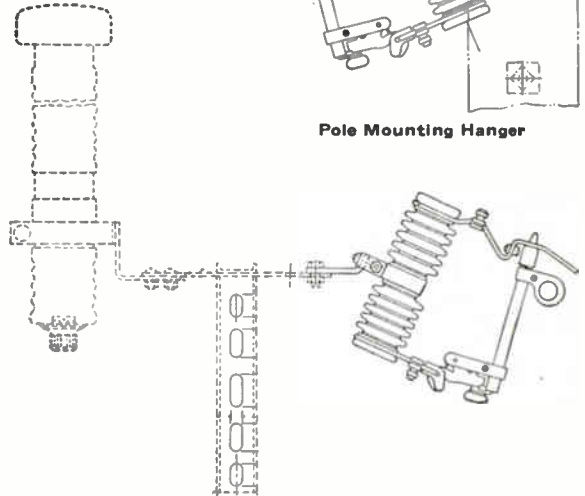
G-E Open Fuse Cutouts

Hangers

In addition to the clamp-type crossarm hanger illustrated in the preceding column, open fuse cutouts are available with hangers for different types of mounting as shown in these two sketches.



Pole Mounting Hanger



Combination Pole Hanger
(T-Bracket Not Included with Cutout)

G-E Indicating Secondary Fuses

Outdoor Type

The G-E indicating secondary fuse is an outdoor cartridge-type, non-renewable fuse designed to permit transformer secondary banking, transformer secondary protection, and the isolating of service entrance faults at the minimum initial expense.

The fuse element is totally enclosed and protected from the weather and cannot be twisted when swayed by the wind.

It can easily be installed with any type of overhead secondary construction by means of conventional solderless connectors.

For circuits 600 volts and below.

Packed 25 fuses in a carton, 200 Amp. and less.

Packed 5 fuses in a carton, 250 and 300 Amp.



No.	Each	Amperes	Ship. Wt. Lb. per Ctn.
9F13A1	\$.90	5	3
9F13A2	.90	8	3
9F13A3	.90	10	3
9F13A4	.90	15	3
9F13A5	.90	20	3
9F13A6	.90	25	3
9F13A7	.90	30	3
9F13A8	.90	40	3
9F13A9	.90	45	3
9F13A10	.90	50	3
9F13A11	1.00	75	4 1/2
9F13A12	1.00	85	4 1/2
9F13A13	1.00	95	4 1/2
9F13A14	1.00	100	4 1/2
9F13A17	2.00	125	10 1/2
9F13A15	2.00	150	10 1/2
9F13A16	2.00	200	10 1/2
9F13A18	4.25	250	6 1/4
9F13A19	4.25	300	6 1/4

G-E Fast-Blowing Universal Cable-Type Fuse Links

For Use with All G-E Reclosing, Enclosed Indicating and Drop-Out, Enclosed Non-Indicating, and Open Type Fuse Cutouts

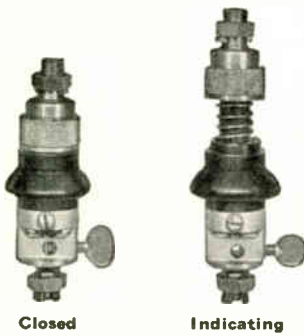
These fuse links are rated on the 100 per cent basis and are designed to carry their rated current without blowing, and to blow at not over 230 per cent rating within five minutes. All G-E fast-blowing universal cable-type fuse links may be operated safely and continuously at 100 per cent rating, with a maximum temperature rise of 30°C. for conducting parts of the fuse holder above an ambient temperature of 40°C.

Packed 25 in a carton.

No.	Each	Ampere Rating "N" (100%) Basis	Ship. Wt. Lb. per Carton	No.	Each	Ampere Rating "N" (100%) Basis	Ship. Wt. Lb. per Carton
9F1C16	\$.50	1	2 1/2	9F1C24	\$.50	25	3 1/2
9F1C17	.50	2	2 1/2	9F1C25	.50	30	3 1/2
9F1C18	.50	3	2 1/2	9F1C26	.50	40	4 1/2
9F1C19	.50	5	2 1/2	9F1C27	.50	45	4 1/2
9F1C20	.50	8	2 1/2	9F1C28	.50	50	4 1/2
9F1C21	.50	10	2 1/2	9F1C29	.60	75	7
9F1C22	.50	15	2 1/2	9F1C30	.60	85	7
9F1C23	.50	20	2 1/2	9F1C31	.60	95	7
				9F1C32	.60	100	7

Send for Bulletin GEA-1994 for complete description.

G-E Secondary Indicating Fuse Cutouts



The G-E Secondary Fuse Cutout gives positive indication that the circuit is open whenever a fuse link is blown, by pushing the Textolite housing down from the upper terminal cap and displaying the red fuse holder tube which is readily visible from the ground. This secondary cutout makes transformer secondary banking, transformer secondary protection, and the isolating of service entrance faults economically possible.

The fuse link is protected from the weather; in this way, maintenance is minimized. The small size and light weight of the cutout enable it to be mounted in the space between secondary lines, attached directly to the line conductor, or mounted directly on the clamp terminals of a distribution transformer (using an adapter). Cutout can be easily and safely refused.

No.	Each	Voltage Rating	*Current Rating, Amperes	Ship. Wt. Lb.
9F7A1	\$4.00	250	100	16

*Rated interrupting capacity, 3000 rms. amperes at 60 cycles.

Send for Bulletin GEA-2261 for complete description.

G-E Secondary Fuse Links

For Use with No. 9F7A1 Secondary Fuse Cutouts

The time-current characteristics of these links are identical with those of the G-E fast-blowing cable-type fuse links designed for coordination with motor-starting currents, with primary or secondary fuse links of other ratings, and with relays.

Packed 25 in a carton.

No.	Each	Ampere Rating 100% Basis	Ship. Wt. Lb. per Carton	No.	Each	Ampere Rating 100% Basis	Ship. Wt. Lb. per Carton
9F1S1	\$.35	5	1 1/2	9F1S8	\$.37	40	2
9F1S2	.35	8	1 1/2	9F1S9	.37	45	2
9F1S3	.35	10	1 1/2	9F1S10	.37	50	2
9F1S4	.35	15	1 1/2	9F1S11	.40	75	3
9F1S5	.35	20	1 1/2	9F1S12	.40	85	3
9F1S6	.35	25	1 1/2	9F1S13	.40	95	3
9F1S7	.37	30	2	9F1S14	.40	100	3

G-E Fuse Links

For D & W Type Oil Fuse Cutouts

Carton, 10 links; standard half package, 50 links; standard package, 100 links.

Plain Type

CUTOUT NUMBERS				
9F2A1	9F2A2	9F2A3	9F2A4	9F2A5
9F2A6	9F2A7	9F2A8	9F2A15	9F2A9
	9F2C7	9F2C8		
	9F2A10	9F2A12		
	9F2A11	9F2A13		
4X101	4X108	*4X104	4X105	4X106
4X110	4X121	*4X122	230008	4X123
230002	230000	230001		230009
246103	230003	230004	For	230010
230005	246104	246105	2500	
230011	230006	*230007	volts	
230014	230012	*230013	only	
	246107	*246108		

FUSE LINK NUMBERS

RATED CAP. OF LINKS, AMP.	295544	295552	295561	295571
10	295545	295553	295562	295572
15	295546	295554	295563	295573
20	295547	295555	295564	295574
25	295548	295556	295565	295575
30	295549	295557	295566	295576
40	295550	295558	295567	295577
50	295551	295559	295568	295578
60	No larger link made for these cutouts	295560	295569	295579
75	No larger link made for these cutouts	295561	295570	295580
100	No larger link made for these cutouts	295562	295571	295581
125	No larger link made for these cutouts	295563	295572	295582
150	No larger link made for these cutouts	295564	295573	295583
175	No larger link made for these cutouts	295565	295574	
200	No larger link made for these cutouts	295566	295575	
250	No larger link made for these cutouts	295567	295576	
300	No larger link made for these cutouts	295568	295577	

Ship. Wt. of Carton lb.	1	2	3	4	2
Up to 100 Amperes . . . each	\$1.25	\$1.25	\$1.50	\$1.50	\$1.50
Over 100 Amperes . . . each			2.00	2.00	

*The plain type links for 100 amperes and below listed for these cutouts will operate satisfactorily on 5000 volts.

Reactive Type

CUTOUT NUMBERS				
9F2A2	9F2A3	9F2A3	9F2A4	9F2A5
9F2A7	9F2A8	9F2A8	9F2A15	9F2A9
9F2C7	9F2C8	9F2C8		
9F2A10	9F2A12	9F2A12		
9F2A11	9F2A13	9F2A13		
4X108	4X104	4X104	4X105	4X106
4X121	4X122	4X122	230008	4X123
230000	230001	230007		230009
230006	230007	230013	For	
230003	230004	246108	2500	
246104	246105		volts	
230012	230013		only	
246107	246108			

FUSE LINK NUMBERS

RATED CAP. OF LINKS, AMP.	295584	295591	295601	295615
10	295585	295592	295602	295616
15	295586	295593	295603	295617
25	295587	295594	295604	295618
30	295588	295595	295605	295619
40	295589	295596	295606	295620
50	No larger link made for these cutouts	295597	295607	295621
75	No larger link made for these cutouts	295598	295608	295622
100	No larger link made for these cutouts	295599	295609	295623
125	No larger link made for these cutouts	295600	295610	295624
150	No larger link made for these cutouts	295601	295611	295625
175	No larger link made for these cutouts	295602	295612	295626
200	No larger link made for these cutouts	295603	295613	295627
250	No larger link made for these cutouts	295604	295614	295628
300	No larger link made for these cutouts	295605	295615	295629

Ship. wt. of Carton lb. 3 4 4 6 4
 Up to 100 Amperes . . . each \$2.75 \$2.75 \$2.75 \$2.75 \$2.75
 Over 100 Amperes . . . each 3.25 3.25

†When these cutouts are used on 5000-volt circuits where reactive type fuse links are required, use links Nos. 295601 to 295605. Links Nos. 295591 to 295600 are only good for 2500-volt circuits.

Copper Disconnecting Blades

With Notched Ends Formed Up and Insulated with Herkoltite Sleeve for Use with Oil Fuse Cutouts

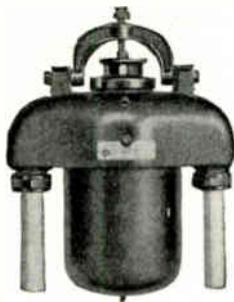
No.	Each	For Use in Oil Fuse Cutouts, Nos.
2576194G1	\$2.00	9F2A2, 9F2A5, 9F2C7, 9F2A10, 9F2A11
2576194G2	2.25	9F2A3, 9F2C8, 9F2A12, 9F2A13
2576194G3	2.50	9F2A4, 9F2A15

†When cutouts are equipped with these disconnecting blades, they will not exceed a temperature rise of 55°C. The rated load may be opened or closed without pitting or burning of the contacts.

G-E D & W Type Oil Fuse Cutouts



Pole Type,
100 to 300 Amperes



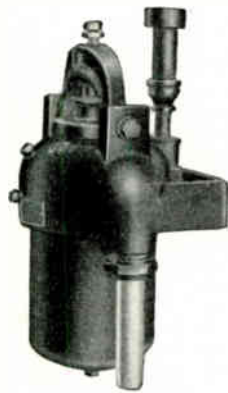
Subway Type,
100 to 200 Amperes, 2500 Volts;
Also 100 Amperes, 5000 Volts



Pothead Type,
100 to 300 Amperes



No. 73X705 Expansion Chamber for Subway Type Cutouts



No. 294258 Subway Type Cutout with Pellet Vent

The G-E D & W type oil fuse cutout is completely metal-enclosed, with a fusible element under oil, by which the circuit is broken safely and rapidly. Standard oil fuse cutouts are available in three designs for pole, subway, or pothead service on circuits up to 7500 volts and 300 amperes.

The fuse link is surrounded by a Textolite sleeve which prevents mechanical damage or accidental electric contact, while carrier is being inserted in cutout. All live parts are enclosed. Fuse carrier is locked in place before circuit is closed.

Flame from arc is confined within housing, and prevents ignition of explosive gases and external damage.

Fuse link is under oil—this prevents deterioration from oxidation or electrolysis. Gases are released, but oil is confined. Subway fuse cutouts have operated for years while submerged in water.

Fuse links are quickly and easily replaced. Oil level can be maintained without removing cutouts from service.

Heavy self-aligning contacts make possible repeated opening under load.

Cutouts may be fused closely to load, providing simultaneously, protection against overload and heavy short circuits.

G-E oil fuse cutouts are particularly applicable for subway service, for replacement of potheads, and for installations where high current-interrupting ability is required and where high-speed operation is essential. Other locations in which they can be used to advantage are:

Where quiet operation is desirable.

Where the cutouts are exposed to smoke, corrosive fumes, salt-air, explosive gases, or inflammable dust. All indoor installations.

Where it is desired to have no exposed live parts, whether the cutout is in the open or the closed position.

They are ideal for indoor industrial applications. As no flame is expelled, and as all live parts are completely enclosed, the oil fuse cutout best meets the requirements of the National Electrical Code.

Pole Type

No.	Each	*Volts	Rated Capacity Amperes	INTERRUPTING CAP., AMP., AT 60 CYCLES		SHIPPING WEIGHT (POUNDS) Cutout Oil
				Plain Links	Reactive Links	
9F2A1	\$48.00	2500	5 to 50	2000	.....	51 6
9F2A2	58.00	2500	10 to 100	4000	5000	62 9
					3000	
9F2A3	82.00	2500	10 to 200	8000	10000	113 21
					5000	
9F2A4	178.00	2500	100 to 300	8000	10000	205 31
9F2A5	178.00	7500	10 to 100	3000	3750	200 31

*Subway Type

9F2A6	\$65.00	2500	5 to 50	2000	.....	61 6
9F2C7	75.00	2500	10 to 100	4000	5000	70 9
					3000	
9F2C8	100.00	2500	10 to 200	8000	10000	127 21
					5000	
†9F2A15	225.00	2500	100 to 300	8000	10000	200 26
†9F2A9	225.00	7500	10 to 100	3000	3750	200 26

Pothead Type

†9F2A10	\$68.00	2500	10 to 100	4000	5000	64 9
§9F2A11	68.00	5000	10 to 50	2500	3000	64 9
†9F2A12	85.00	2500	10 to 200	8000	10000	116 21
§9F2A13	85.00	5000	10 to 100	4000	5000	116 21

*The 2500-volt cutouts are suitable for operation on 4000-volt Y-connected circuits with dead grounded neutral. In all cases, two cutouts are required between lines.

†The bushings on Nos. 9F2A9 and 9F2A15 cutouts are not the separable-sleeve type, but are designed for connection to the cables using standard splicing material.

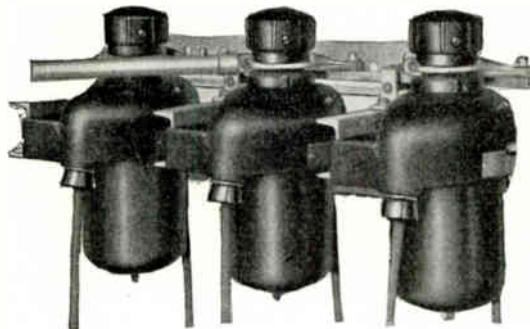
‡With right-hand subway sleeve bushings.

§With left-hand subway sleeve bushings.

¶Venting. Subway-type cutouts usually require accessories for venting, either by means of an expansion chamber or pellet vent. Prices above do not include venting accessories which should be selected as follows:

No. 73X705 Expansion Chamber, for Use Where Complete Submersion Is Possible..... each \$14.00
No. 294258 Pellet Vent, for Use Where Cutouts Are Not Subjected to Flooding..... each 14.00

Gang Operation of G-E Oil Fuse Cutouts



Pole Type Cutouts Arranged for Three-Phase Operation

A simple and low cost, gang operated, three-phase assembly of standard G-E oil fuse cutouts can readily be made by the addition of a mounting rack and lever-operated mechanism for safely opening or closing the full-rated current on all three phases simultaneously.

For Pole or Pothead Type Cutouts

—RACK AND MECHANISM ONLY—			—FOR CUTOUTS—		
No.	Each	Ship. Wt. Lb.	No.	Amperes	Volts
79X2	\$19.75	50	9F2A2	100	2500
79X3	27.50	60	9F2A3	200	2500
				100	5000
79X4	38.00	75	9F2A4	300	2500

For Subway Type Cutouts

79X5	\$26.00	50	9F2C7	100	2500
79X6	30.00	60	9F2C8	200	2500
				100	5000
79X7	45.00	75	9F2A15	300	2500

Send for Bulletin GEA-732 for Complete Description

G-E Pellet Type Distribution Lightning Arresters

For Circuits 1 to 15 Kv.



6 Kv. Maximum Permissible Line-to-Ground Voltage and with Standard Hanger

The electric elements consist of a column of pellets and a series-gap assembly. The pellet column forms the valve element, preventing the flow of system current following discharge, while the series gap isolates the valve element from the line until it is sparked over by a surge.

The pellets are made of lead peroxide, with a thin, porous coating of litharge and are assembled in a porcelain-tube container with metal electrodes in contact with each end of the pellet column. The length of the column is proportional to the arrester voltage rating.

The series gap assembly is sealed within a gap chamber, which is entirely isolated from the pellet valve column. This sealed gap chamber prevents the entrance of moisture and makes the arrester independent of atmospheric conditions, thereby assuring permanent freedom from current leakage and corrosion.

The elements of the arrester are contained in a porcelain tube with corrugated exterior. A porcelain cap is mechanically secured by weatherproof compound of high flow point.

This compound, however, is not depended on for sealing the arrester.

Well-glazed, wet-process porcelains are used in pellet arresters of all ratings. A flexible lead, securely soldered, provides for line connection.

The clamp-type ground terminal permits either one or two solid or stranded ground wires to be clamped to the arrester, eliminating connectors, splicing, soldering, and taping. In this way, both labor and materials are saved.

After gap breakdown, discharge current begins to flow, and the resistance of the pellet valve column decreases as long as the current increases. When the current begins to decrease, the resistance increases, and to such an extent that, at the end of a discharge, the normal system voltage is unable to maintain a current flow through the arrester. This valve action prevents any arc or short-circuit attending discharge and thereby avoids tripping of line breakers and blowing of sectionalizing fuses from lightning.



9 Kv. Maximum Permissible Line-to-Ground Voltage and Above with Standard Hanger

Hangers and Mountings

Altitude, 0 to 6000 Feet

The standard and special hangers which are available for pellet arresters will satisfy virtually all desired mountings of the arresters—alone, in combination with primary fuse cut-outs, or on transformer tanks. It will be seen that the pellet-arrester porcelain has two mounting grooves providing for alternate positions of the arresters in either standard or special hangers, making it possible to balance either the clearances or the appearance of the installation. The arrester can be inserted in any hanger either before or after the hanger has been mounted.

Pellet Type Arresters with Standard Hangers

Table 4—For Protection of Load Side of A.C. Series Lighting Transformers

No.	Each	Kw. Rating of Transformers Secondary Amperes (6.6 and 7.5)	Approx. Ship. Wt. Lb.
9LA10A1	\$12.00	1, 2, 3	8
9LA10A2	14.00	5, 7.5, 10, 15	11
9LA10A4	26.00	20, 25, 30	17
9LA10A5	30.00	35, 40	26
9LA10A6	46.00	50	31
9LA10A7	60.00	60, 70	37

Pellet Type Arresters with Standard Hangers

Table 1—For Systems with Ungrounded Neutral

No.	Each	CIRCUIT VOLTAGE CONSTANT POTENTIAL		Maximum Permissible Line-to-Ground Voltage, Rms.	Ship. Wt. Lb.
		Min.	Max.		
9LA10A1	\$12.00	300	1000	1000	8
9LA10A2	14.00	1000	3000	3000	11
9LA10A4	26.00	3000	6000	6000	17
9LA10A5	30.00	6000	9000	9000	26
9LA10A6	46.00	9000	12000	12000	31
9LA10A7	60.00	12000	15000	15000	37

Table 2—For Systems with Solidly Grounded Neutral

No.	Each	3000	5000	3000	11
9LA10A2	\$14.00	5000	9000	6000	17
9LA10A4	26.00	9000	12800	9000	26
9LA10A5	30.00	12800	15000	12000	31
9LA10A6	46.00	15000	18000	15000	37

Table 3—For Single-Phase Circuits with One Conductor Solidly Grounded at Source and Multigrounded along Line

No.	Each	Primary Circuit Operating Voltage	Maximum Permissible Line-to-Ground Voltage, Rms.	Ship. Wt. Lb.
9LA10A2	\$14.00	2400-2500	3000	11
9LA10A4	26.00	4800-5000	6000	17
9LA10A5	30.00	6900-7200	9000	26
9LA10A98	30.00	7620-7940	10000	37

Number of Arresters Required at Installation

For Table 1. Use two arresters at each single-phase installation. Use three arresters at each 3-phase installation.

For Table 2. Use one arrester on phase wire at a single-phase installation made between phase wire and neutral. Use also on neutral wire, a neutral gap if voltage to ground is not over 300 volts; if because of unbalancing, voltage is between 300 and 1000 volts, use No. 9LA10A1 Arrester. Use two arresters at a single-phase installation between outside phase wires. Use three arresters at each 3-phase installation.

For Table 3. Use one arrester at each installation.

Pellet Type Arresters with Special Hangers

Table 5

Arrester No. with Standard Hanger	Arrester No. with Special Hanger	*Type of Hanger
	9LA10A22	Clamp Type, Style D
	9LA10A32	Clamp Type, Style C
9LA10A2	9LA10A52	Hook Type, Style F
	9LA10A82	Combination Pole
	9LA10A14	Hook Type, Style G
	9LA10A24	Clamp Type, Style D
9LA10A4	9LA10A34	Clamp Type, Style C
	9LA10A54	Hook Type, Style F
	9LA10A84	Combination Pole
	9LA10A194	Bolt Type, Style B
	9LA10A15	Hook Type, Style G
	9LA10A25	Clamp Type, Style D
9LA10A5	9LA10A35	Clamp Type, Style C
	9LA10A61	Bolt Type, Style A
	9LA10A65	Direct Pole
	9LA10A85	Combination Pole
	9LA10A185	Clamp Type, Style E
	9LA10A16	Hook Type, Style G
	9LA10A26	Clamp Type, Style D
9LA10A6	9LA10A36	Clamp Type, Style C
	9LA10A66	Direct Pole
	9LA10A86	Combination Pole
	9LA10A17	Hook Type, Style G
	9LA10A27	Clamp Type, Style D
9LA10A7	9LA10A37	Clamp Type, Style C
	9LA10A67	Direct Pole
	9LA10A68	Direct Pole
	9LA10A88	Combination Pole
9LA10A98	9LA10A97	Bolt Type, Style A
	9LA10A188	Clamp Type, Style E

*See the following page for sketches of special hangers.

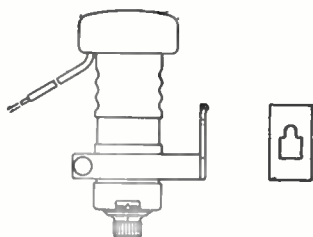
Send for Bulletin GEA-2975 for Complete Description

G-E Pellet Type Distribution Lightning Arresters

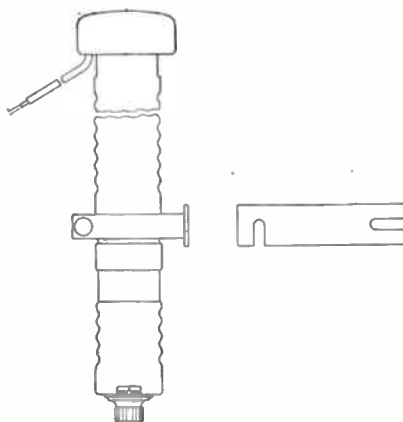
For Circuits 1 to 15 Kv.

Special Hangers

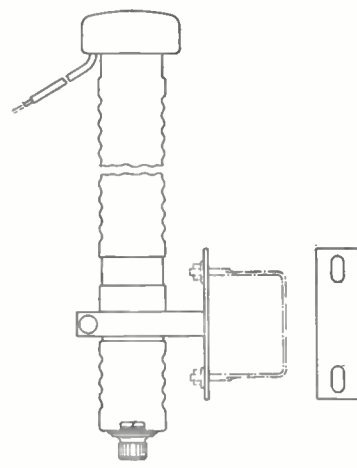
In addition to the standard hangers shown on the preceding page, pellet arresters are available with special hangers as shown in the following sketches. Arresters with special hangers have the same price as arresters of the same rating, with standard hangers. To determine the number of an arrester with a special hanger, first select the standard arrester from Tables 1, 2, 3 or 4, and then refer to Table 5 for the number of the corresponding arrester with the special hanger desired.



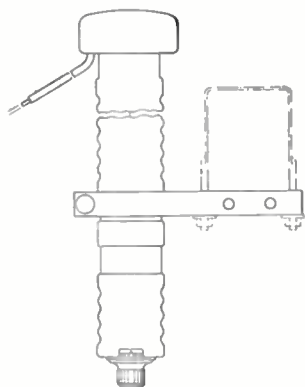
Bolt Type Crossarm Hanger, Style A



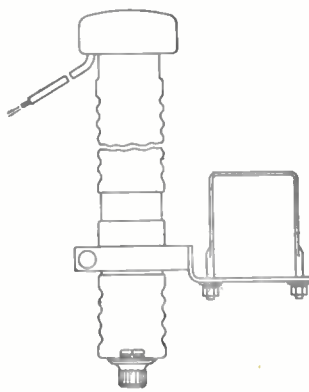
Bolt Type Crossarm Hanger, Style B



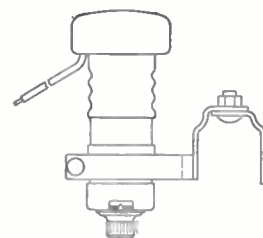
Clamp Type Crossarm Hanger, Style C



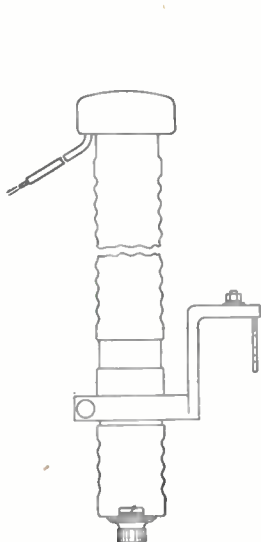
Clamp Type Crossarm Hanger, Style D



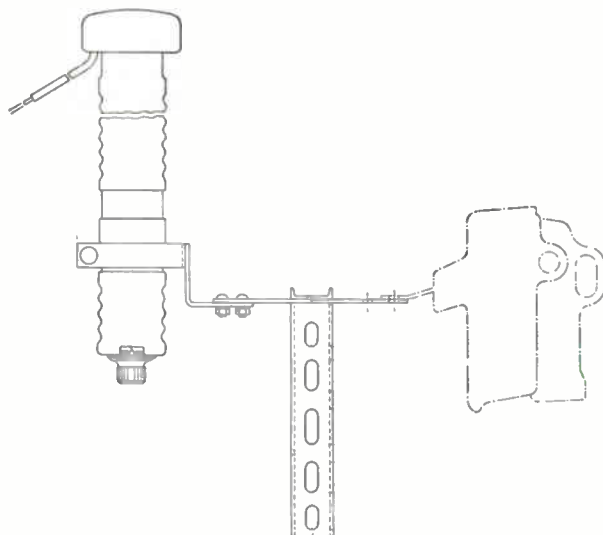
Clamp Type Crossarm Hanger, Style E



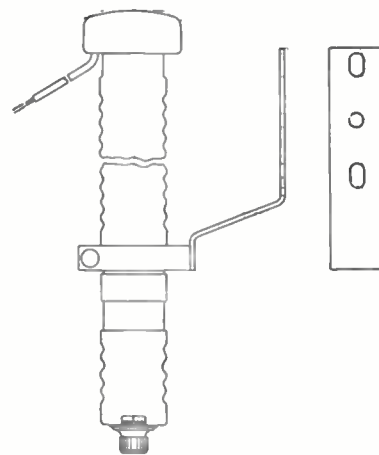
Hook Type Crossarm Hanger, Style F



Hook Type Crossarm Hanger, Style G

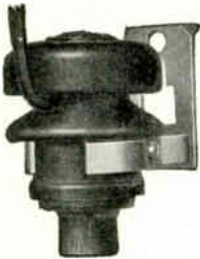


Combination Pole Hanger



Direct Pole Hanger

G-E Neutral Gaps
Altitude, 0 to 6000 Feet



No. 9LA11A1



No. 146187

These neutral gaps are plain gaps having an impulse spark-over voltage of about 15 kv. crest on the A.I.E.E. standard impulse test, and embody no valve element. They are for application on the neutral wire of the usual ground-neutral 3-phase, 4-wire primary systems, where the neutral wire voltage to ground does not exceed 300 volts rms.

No. 9LA11A1 embodies the same desirable features of construction and mounting that are incorporated in the standard pellet arresters for protection of the phase wires.

No. 146187, being less expensive, does not possess the refinements of No. 9LA11A1. Unit has a ground lead similar to the line lead, and is mounted on crossarm by wood screws.

*No.	Each	Ship. Wt. Lb., Each
9LA11A1	\$5.50	4
146187	3.50	1 $\frac{3}{16}$

*Use on neutral wire of 3-phase, 4-wire circuits having the neutral solidly grounded only at the substation, if voltage of neutral wire to ground is not over 300 volts rms. If, because of unbalancing, voltage of neutral wire is between 300 and 1000 volts, use No. 9LA10A1 pellet arrester. Use standard pellet arresters on phase wires.

Send for Bulletin GEA-2975 for complete description.

G-E Isolating Gaps

For Distribution Circuits 15 Kv. and Below

G-E porcelain-enclosed isolating gaps effect efficient interconnection through a gap, where it is desired to isolate the primary lightning-arrester ground from the secondary neutral. These gaps can also be used wherever distribution-transformer tanks are to be grounded through a gap.



Nos. 9LA11A1, A2, and A3 with Mounting Hanger

Standard spark-potential ratings have been established at 6, 11 and 15 kv. rms. These ratings are average values subject to about 10% tolerance, plus or minus.



Nos. 9LA11A5, A7, and A9 with Mounting Hanger

Nos. 9LA11A1, A2 and A3 gaps are sturdily constructed, and have no exposed live parts. Nos. 9LA11A5, A7 and A9 gaps are smaller, and designed for mounting on a pole, crossarm, transformer tank, or for suspension from a line conductor.

No. 9LA11A1 gap (6-kv. spark potential) is recommended as a primary-neutral arrester for protecting the neutral side of distribution transformers operating on grounded-neutral systems with the system neutral grounded only at the substation, and where the neutral potential does not exceed 300 volts rms.

No.	Each	Primary-Circuit Voltage	60 Cy. Rms. Spark Potential Kv.	Impulse Spark Potential Kv.
9LA11A1	\$5.50	†2400	6	11
9LA11A2	5.50	{ †6900, †8320 and Higher Voltage Circuits }	15	25
9LA11A3	5.50	†4160 and †4800	11	17.5
9LA11A5	4.40	†2400	6	11
9LA11A7	4.40	†4160 and †4800	11	17.5
9LA11A9	4.40	{ †6900, †8320 and Higher Voltage Circuits }	15	25

†Isolated neutral. ‡Grounded neutral.

Send for Bulletin GEA-2976 for complete description.

G-E High Voltage Thyrite Distribution Lightning Arresters

For Circuits 20 to 73 Kv.



Nos. 9LA2D59 to 9LA2D62 Inclusive

The G-E Thyrite distribution arresters, frequently called "line-type," afford economical lightning protection for small substations and apparatus on systems in the voltage range from 20 to 73 kv. Their low cost, small physical size, light weight, good impulse protective characteristics, new features of mechanical design for flexibilities of applications, and a variety of mountings make these arresters particularly adaptable to, and commensurate with, the numerous small or medium-sized substations where the economic considerations do not justify the larger and more expensive station-type Thyrite arresters. While not possessing the large cross-sectional area of discharge path, heat-storage capacity, endurance, and overall reliability of the station-type arresters, the line-type arresters do possess refinements of construction and performance characteristics not before available in high-voltage distribution arresters.

The impulse breakdown voltage to start discharge and the IR voltage drop during discharge are about equal and are well below impulse basic-insulation levels or standard impulse test levels of modern transformers and other apparatus. On A.I.E.E. standard impulse test, the arresters will limit the impulse voltage to about 2.5 times the crest value or reseat rating of the arrester.

Thyrite shunted series gaps, combined with the Thyrite shunted series gaps, result in limiting both magnitude and duration of power follow-current after discharge. The excellent valve characteristics interrupt the small power follow-current in not more than a half cycle.

Some of the distinctive features of these arresters are:

- Good impulse protective characteristics.
- Thyrite shunted and shielded gap construction.
- Interchangeable line and ground connections.
- Liberal discharge capacity.
- Interchangeable unit construction.
- Sealed from moisture and atmospheric influences.
- Simplified mounting.
- Small physical size and light weight.
- No service maintenance.

The standard arresters are designed for direct base mounting either on foundations or on substation steel members.

By the addition of mounting brackets, the arresters are easily mounted on a single crossarm, on a substation wall, or on structure cross members.

The addition of an eyebolt-cap casting permits suspension mounting.

See the following page for specifications and arrester mounting accessories.

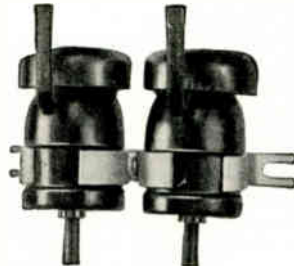
Send for Bulletin GEA-2978 for Complete Description

G-E Low Voltage Pellet Type Lightning Arresters

0 to 650 Volts—Altitude, 0 to 6000 Feet



No. 9LA10A202 Single-Pole Pellet Arrester with Mounting Bracket



No. 9LA10A204 Double-Pole Pellet Arrester with Mounting Bracket

For outdoor service, crossarm or pole mounting, on railway signal lines or secondary power lines, for protection of railway signal transformers, distribution-transformer secondaries, autotransformer boosters, cables, and other line apparatus in the 0 to 650-volt class.

The single-pole arrester unit consists of a series gap and a pellet valve column completely housed in a wet-process porcelain container. The series gap has two electrodes, separated by a porcelain spacer and sealed within a gap chamber completely isolated from the pellet valve column. This sealed gap chamber in the upper part of the container prevents the entrance of moisture and makes the arrester operation independent of atmospheric conditions. The pellet valve column in the lower part of the container prevents the flow of system power current following discharge.

The double-pole arrester consists of two single-pole units mounted in a single hanger. This arrester is economically advantageous on single-phase, 2-wire circuits.

No.	Each	No. of Poles	Circuit Voltage Rating Rms.	Maximum Permissible Line-to-Ground Voltage, Rms.	Ship. Wt. Lb.
*9LA10A202	\$6.00	1	0-650	650	2
†9LA10A204	12.00	2	0-650	650	4

*Use two arresters at each single-phase installation and three arresters at each 3-phase installation.

†Use one arrester at each single-phase installation.

G-E Thyrite Meter or Service Protectors

0 to 650 Volts—Altitude, 0 to 6000 Feet



No. 9LA12B3 Three-Pole Thyrite Protector for Indoor Installation



No. 9LA12B6 Three-Pole Thyrite Protector for Outdoor Installation

For protection of watt-hour meters, industrial power service entrances, or consumer apparatus and appliances on single or polyphase secondary circuits or services in the 0 to 650-volt class.

The case of the protector is of drawn aluminum. Each single-pole assembly has a series gap and a Thyrite disk valve element 3 inches in diameter and 5/16 inch thick. These single-pole elements are mounted in a Textolite container, and one, two, or three of these assemblies (for single, double or three-pole protectors respectively) are sealed within the outer aluminum case. The bottom of the case bears complete nameplate data.

Indoor Service—For Mounting to Knockout Hole

The indoor design is arranged for mounting directly in a knockout hole in the meter case or connection box.

No.	Each	No. of Poles	Circuit Voltage Rating Rms.	Maximum Permissible Line-to-Ground Voltage, Rms.	Ship. Wt. Lb.
9LA12B1	\$14.00	1	0-650	650	3
9LA12B2	19.00	2	0-650	650	3½
9LA12B3	22.00	3	0-650	650	4

Outdoor Service—For Separate Bracket Mounting

The outdoor design is provided with a conduit weather cap and mounting bracket as illustrated.

9LA12B4	\$16.00	1	0-650	650	3½
9LA12B5	21.00	2	0-650	650	4
9LA12B6	24.00	3	0-650	650	4½

Number of Arresters Required at Installation

Use two single-pole arresters at each single-phase installation. Use three single-pole arresters at each 3-phase installation. Use one 2-pole arrester at each single-phase installation. Use one 3-pole arrester at each 3-phase installation.

G-E Pellet Meter or Service Protectors

115/230 Volts—Altitude, 0 to 6000 Feet



No. 9LA15A1 Pellet Protector for Direct Metal-Clad Mounting to Bottom Knockout Hole



No. 9LA15A3 Pellet Protector with Bracket for Separate Mounting

For 115-volt, single-phase, 2-wire; or 115/230-volt, single phase 3-wire grounded neutral, secondary services. For indoor or outdoor service.

Pellet protector is a two-pole device having two line leads and one ground lead, as required for typical 115/230-volt, single-phase, three-wire secondary services. The protector has a porcelain interior containing the two single-pole pellet valve elements, all housed within a cylindrical drawn-aluminum case with threaded nipple. Each pole of the protector has a pellet column designed to give valve action up to 175 volts rms. line-to-ground. This provides a sizable margin in rating above the normal 115 volts or 120 volts phase-to-ground on this class of secondary circuits.

The indoor protector is designed to permit direct mounting in the knockout holes of a service switch, fuse box, meter-connection cabinet, or meter case. In some applications it may be preferable to locate the protector on the building wall at the point where the exposed secondary circuit enters the conduit gooseneck or the service cap of the enclosed service wiring. Therefore, another design is provided for such separate outdoor mounting.

No.	Each	Maximum Permissible Line-to-Ground Voltage, Rms.	Type of Mounting	Net Wt. Lb. Each
9LA15A1	\$5.50	175	{ Mounting to Bottom Knockout Hole Mounting to Side Knockout Hole Separate Bracket Mounting }	2
9LA15A2	6.50	175		2½
9LA15A3	6.00	175		2½

Send for Bulletin GEA-2977 for Complete Description

G-E Station Type Thyrite Lightning Arresters Altitude, 0 to 6000 Feet

The G-E Form E station-type Thyrite lightning arrester combines refinements of mechanical construction and improved electrical characteristics which establish a new standard of protective efficiency and over-all dependability.

Designed for protection of service continuity as well as apparatus insulation, the Thyrite arrester provides excellent valve performance which prevents system disturbances or outages as the result of lightning discharges.

The Thyrite arrester can be applied indoors or outdoors for the protection of either large or small generating or substation equipment, on either grounded or ungrounded neutral systems, and over a voltage range of 2.3 to 287 kv.

The simplicity of design and the small space requirement make this arrester ideal for mounting directly on power transformers and unit substations or for mounting on substation steel structures, as well as on concrete foundations or piers.

Possessing every mechanical and electrical feature known to the art for reliability, endurance, fidelity of protective performance, and economies of application, the Thyrite station-type arrester should be applied at generating stations and substations where either the investment in equipment to be protected or the importance of service continuity warrants the highest degree of protection.

The unexcelled protection record established by Thyrite station type arresters in service operation over the past nine years, and the demonstrated economies of their interchangeable unit construction, are notable evidence of the soundness of investing in this class of protection.

Distinctive features of these Thyrite station type arresters include:

- Excellent protective efficiency.
- Enormous discharge capacity.
- Thyrite-shunted and shielded gap construction.
- Interchangeable unit construction.
- Freedom from moisture or atmospheric influences.
- Ease of installation.

The following information applies to single-pole arresters. For 3-phase circuits, use three single-pole arresters.

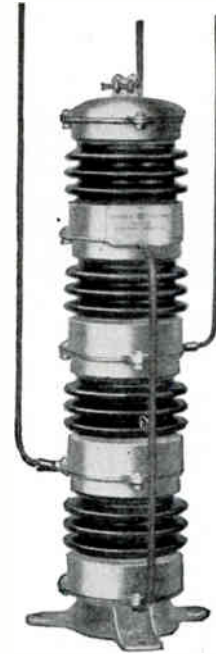
Send for Bulletin GEA-1304 for complete description.



No. 9LA1E30 One-Pole Thyrite Arrester for 34.5-Kv. Grounded Neutral System



No. 9LA1E17 One-Pole Thyrite Arrester, Max. Rated 3 Kv. for 4160-Volt Grounded or 2400-Volt Ungrounded Neutral Systems (Half Unit Shown)



Three-Phase Thyrite Arrester, 3 or 6 Kv. Maximum Arranged in a Single Stack



No. 9LA1E35 One-Pole Thyrite Arrester for 69-Kv. Ungrounded Neutral System

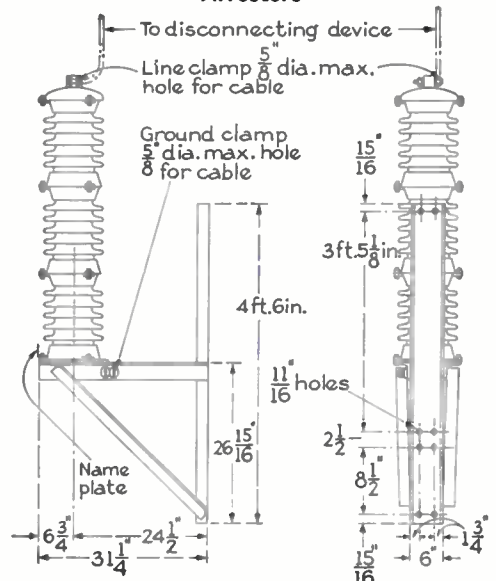
Single-Pole Arrester No.	Each	For Ungrounded Neutral Circuits		*For Grounded Neutral Circuits		†Max. Valve Rating and Maximum Permissible Line-to-Ground Voltage, Rms.	Approx. Ship. Wt. Lb., Single-Pole Arrester
		Circuit Voltage Rating Rms.	Arrester Voltage Rating Rms.	Circuit Voltage Rating Rms.	Arrester Voltage Rating Rms.		
9LA1E17	\$120.00	2,400	2,400	4,160	4,160	13,000	115
9LA1E18	146.00	4160 & 4800	4,800	4800 & 6900	6,900	16,000	120
9LA1E19	180.00	6,900	6,900	11,500	11,500	19,000	130
9LA1E20	211.00	11,500	11,500	13,800	13,800	21,000	140
9LA1E27	297.00	13,800	13,800	18,000	18,000	25,000	225
9LA1E28	357.00	18,000	18,000	23,000	23,000	30,000	230
9LA1E29	388.00	23,000	23,000	28,500	28,500	37,000	245
9LA1E30	500.00	28,500	28,500	34,500	34,500	40,000	335
9LA1E31	565.00	34,500	34,500	46,000	46,000	50,000	380
9LA1E32	651.00	46,000	46,000	57,500	57,500	60,000	425
9LA1E33	742.00	57,500	57,500	69,000	69,000	73,000	450
9LA1E34	919.00	69,000	69,000				560
9LA1E35	1096.00						660

*Use only when the system neutral is solidly grounded.

†Select arrester according to "Circuit Voltage." However, the "Maximum Permissible Line-to-Ground Voltage" denotes the margin for rises above the normal line-to-ground system voltage, and should be considered for poorly regulated systems or for doubtful reliability of system neutral grounding, or any other operating conditions by which the line-to-ground voltage might exceed this "Maximum Permissible" rating.

‡Arresters of these ratings can be supplied for mounting in a 3-phase single-stack assembly as shown. If the 3-phase, single-stack mounting is desired, order by the following numbers which include one base casting, one special insulating unit, three single-pole arrester units, and one cap casting:

Parts for Station Type Thyrite Arresters



No. 2981434G7 Bracket for Mounting from One to Four Thyrite Units

Low Voltage Arresters for Mounting in 3-Phase Single-Stack Assembly

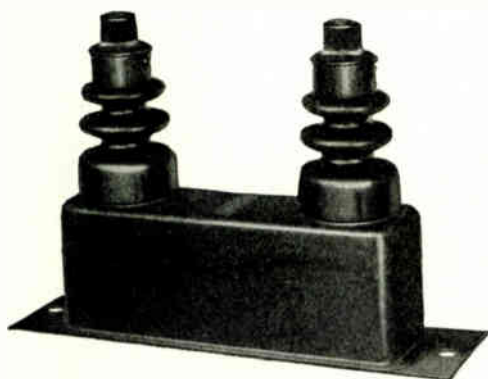
3-Phase Arrester No.	Each	CIRCUIT VOLTAGE RATING		Arrester Voltage Rating, Rms.
		Ungrounded Neutral	Grounded Neutral	
9LA1E22	\$360.00	2,400	4,160	3,000
9LA1E23	438.00	4160 & 4800	4800 & 6900	6,000
9LA1E24	540.00	6,900	11,500	9,000
9LA1E25	633.00	11,500	13,800	12,000

No.	Each	Description	Max. Kv. Rating Rms.	Ship. Wt. Lb. Each
9LA1E4	\$177.00	Full Unit	12	105
9LA1E3	146.00	Three-Quarter Unit	9	100
9LA1E2	112.00	Half Unit	6	90
9LA1E1	86.00	Quarter Unit	3	85
3974570G1	10.00	Cap Casting Only	12	12
3964958G1	24.00	Base Casting Only	12	25
2981434G7	24.00	Mounting Bracket	9,000	75

§ Does not include cap or base castings.
¶ Can be supplied instead of standard base.

G-E D.C. Capacitor Type Arresters

For D.C. Railway Circuits



751-2000-Volt D.C. Capacitor Type Arrester

The protection of d.c. electric transportation systems involves principally the protection of d.c. generators or motors. This necessitates the reduction of

turn-to-turn stresses as well as major insulation stresses from line to ground. D.c. capacitor type arresters, because of their inherent characteristics in sloping off the lightning-wave front as well as reducing the amplitude of the wave, provide a high degree of protection for such systems.

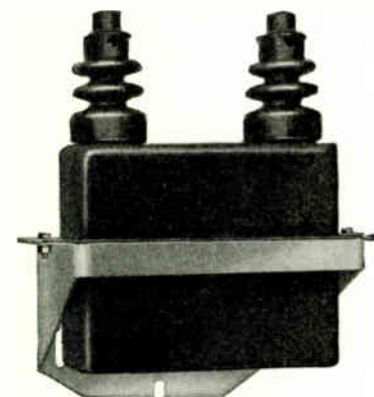
As with any lightning protective device, the d.c. capacitor type arresters should be installed from line to ground in close shunt relation to the insulation of the apparatus being protected. At generating stations or substations, an arrester should preferably be installed on each outgoing d.c. feeder in addition to an arrester on the generator or converter bus.

An arrester should also be installed on each locomotive, multiple-unit car, trolley car, or trolley coach, for protection of motor propulsion equipment and lighting and control circuits. In the case of equipment operated on steel rails, the arrester should be connected from line to the steel frame of the equipment and may be located on the roof close to the pantograph or trolley pole, or under the locomotive or car. When used on trackless trolley coaches, the arrester

should be connected from positive to negative trolley poles, without any connection to the frame of the coach, because the latter is isolated from ground by the pneumatic tires.

Where radio frequency choke coils are present on any rolling stock, the arrester should always be connected on the line side of such choke coils.

When arresters are applied directly on a generating station or substation bus, suitable provision for disconnecting and for



2001-3900-Volt D.C. Capacitor Type Arrester

short-circuit protection should be included. Similar protection by external series fuse may also be desired with arresters installed on locomotives or cars. D.c. fuses are available for circuit voltages up to 3000 volts.

If a fuse is used in series with the arrester, it should have low internal resistance (less than 1 ohm) and should not be less than 15-ampere rating to avoid unnecessary fuse blowing by lightning current passing through the fuse.

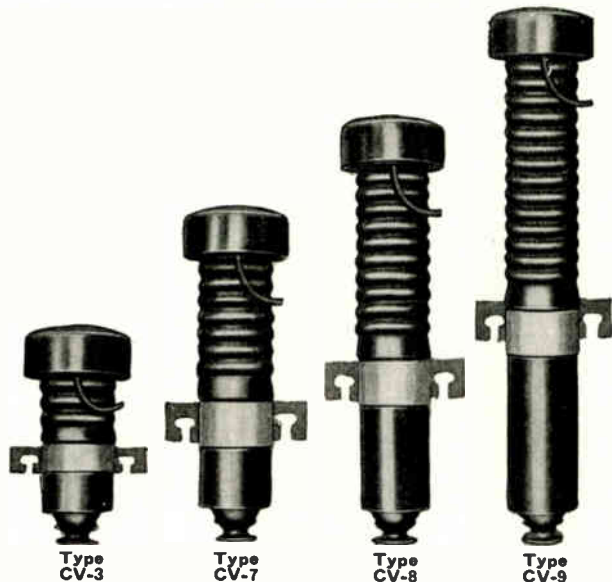
The arrester should be placed so as to obtain the minimum physical length of connecting leads between the arrester and the apparatus, and the ground lead should take the most direct path to ground.

No.	Each	Circuit Voltage Permissible Rating Rms.	Maximum Permissible Line-to-Ground Voltage, Rms.	Ship. Wt. Lb. Each
25F29	\$28.75	0-750	750	20
25F35	65.00	751-2000	2000	25
*18F34	206.00	2001-3900	3900	62

*Includes mounting bracket.

Crystal Valve Lightning Arresters

Distribution Types—300 to 25,000 Volts A.C.



Crystal valve lightning arresters are regularly supplied with line leads of No. 6 B & S gage stranded cable 18 inches long and with stud terminals for ground connection. They may also be obtained with line Stud-Ground Lead, Line Stud-Ground Stud or Line Lead-Ground Lead construction.

Arresters listed are fitted with standard cross arm mounting brackets as illustrated. Various other types of brackets for special conditions will be supplied at no extra cost.

For altitude 0 to 6,000 feet.

Table 1
For Systems with Ungrounded Neutral

No.	Each	CV Arrester Form No.	CIRCUIT VOLTAGE (PHASE TO PHASE)		Arrester Max. Permissible Line to Ground Voltage-RMS	Std. Pkg. Qty.	Approx. Ship. Wt. Lb. Each
			Min.	Max.			
60927	\$7.00	3	1,000	3,000	3,000	12	12
60931	13.00	7	3,000	6,000	6,000	12	17
60932	15.00	8	6,000	9,000	9,000	6	21
60933	23.00	9	9,000	12,000	12,000	6	25
60934	30.00	10	12,000	15,000	15,000	6	29
56787	54.00	12	15,000	20,000	20,000	3	87
51001	84.00	11	20,000	25,000	25,000	1	120
Line Lead-Ground Stud Construction—Glass Body							
60920	\$7.00	3	1,000	3,000	3,000	12	10

Table 2
For Systems With Solidly Grounded Neutral

No.	Each	CV Arrester Form No.	CIRCUIT VOLTAGE (PHASE TO PHASE)		Arrester Max. Permissible Line to Ground Voltage-RMS	Std. Pkg. Qty.	Approx. Ship. Wt. Lb. Each
			Min.	Max.			
60927	\$7.00	3	3,000	5,000	3,000	12	12
60931	13.00	7	5,000	9,000	6,000	12	17
60932	15.00	8	9,000	12,800	9,000	6	21
60933	23.00	9	12,800	15,000	12,000	6	25
60934	30.00	10	15,000	18,000	15,000	6	29
56787	54.00	12	18,000	25,000	20,000	3	87
51001	84.00	11	25,000	30,000	25,000	1	120
Line Lead-Ground Stud Construction—Glass Body							
60920	\$7.00	3	3,000	5,000	3,000	12	10

Table 3
For Single Phase Circuits With One Conductor Solidly Grounded at Source and Multigrounded Along the Line

No.	Each	CV Arrester Form No.	CIRCUIT VOLTAGE (PHASE TO PHASE)		Arrester Max. Permissible Line to Ground Voltage-RMS	Std. Pkg. Qty.	Approx. Ship. Wt. Lb. Each
			Min.	Max.			
60927	\$7.00	3	2,400	2,500	3,000	12	12
60931	13.00	7	4,800	5,000	6,000	12	17
60932	15.00	8	6,900	7,200	9,000	6	21
69268	15.00	8-A	7,620	7,940	10,000	6	21
Line Lead-Ground Stud Construction—Porcelain Body							
60920	\$7.00	3	2,400	2,500	3,000	12	10

Crystal Valve A.C. Lightning Arresters

All voltages specified are maximum phase to phase voltages.

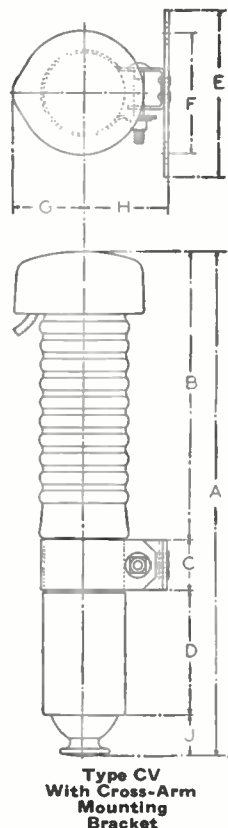
For straight single phase circuits use arresters recommended in Table No. 1.

Treat single-phase circuits split from 2-phase, and single and 2-phase circuits split from 3-phase circuits in accordance with the recommendations covering the particular type of circuit from which they are split.

For 2-phase 4-wire ungrounded circuits use arresters recommended in Table No. 1. For 2 phase 3-wire circuits with ungrounded neutral use arresters recommended in Table No. 1 for the phase wires; for the neutral wire use arresters rated at 71 per cent of the phase to phase voltage.

For neutral wire of 3-phase 4-wire ungrounded Y circuits use arresters rated at 58 per cent of the phase to phase voltage.

For neutral protection on either 2 or 3-phase circuits where the neutral is solidly grounded, use Types T-300, N or NS arresters. If due to unbalancing, the voltage between neutral and ground is between 350 and 750 volts, use type CV Form D arrester.



Type CV
With Cross-Arm
Mounting
Bracket

Form 11 arrester is designed for application to systems having phase to phase voltages of from 15,000 to 25,000; these include Delta systems, Y systems with solidly grounded neutral, and Y systems with ungrounded neutral. On a 4-wire ungrounded Y system form 11 arrester should be used on the phase wires while the form 10 arrester should be used on the neutral. On 4-wire Y systems with solidly grounded neutral, for neutral protection use Type T-300, N or NS arresters. If, due to unbalancing, the voltage between neutral and ground is above 350, use any of the listed Crystal Valve Arresters rated for the maximum voltage existing between neutral and ground.

Dimensions for CV Arresters

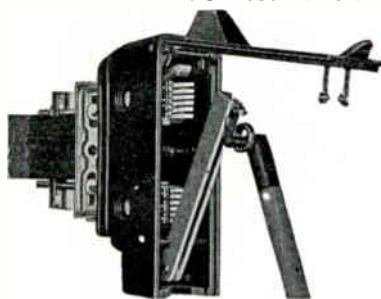
With Line Lead and Ground Stud

No.	CV Arrester Form No.	DIMENSIONS, INCHES				
		A	B	C	D	E
60927	3	10 1/8	5 7/16	1 1/4	1 7/8	6 5/8
60920	3	8 3/16	4 5/8	1 1/4	3/4	6 3/8
60931	7	15 1/2	9 1/16	1 1/4	3 5/8	6 3/4
60932	8	19 13/16	11 5/16	2	4 15/16	6 3/4
60933	9	25 1/4	14 5/16	2	7 3/8	6 3/4
60934	10	30 3/8	18 1/16	2	8 1/2	6 3/4
69268	8-A	19 13/16	11 5/16	2	4 15/16	6 3/4
56787	12	50 1/2	....	....	....	6 3/4
51001	11	61 1/4	....	....	....	6 3/4

No.	CV Arrester Form No.	DIMENSIONS, INCHES			
		F	G	H	J
60927	3	4 3/4	2 13/16	3 3/8	1 1/16
60920	3	4 3/4	2 15/16	3 5/16	1 1/16
60931	7	4 3/4	2 13/16	3 3/8	1 1/16
60932	8	4 3/4	2 13/16	3 3/8	1 1/16
60933	9	4 3/4	2 13/16	3 3/8	1 1/16
60934	10	4 3/4	2 13/16	3 3/8	1 1/16
69268	8-A	4 3/4	2 13/16	3 3/8	1 1/16
56787	12	....	2 13/16	12 1/16	....
51001	11	....	2 13/16	15 1/16	....

Matthews Porcelain Housed Disconnecting Switches

For 7500 Volts or Less



Efficient, enclosed disconnecting switch.

Excellent grade cast porcelain housing with ample dielectric and mechanical strength. Compact with no excessive weight.

Can be furnished with silver contacts and quick break blades.

No. 275, 200-Ampere Rating.....	each	\$9.25
No. 475, 400-Ampere Rating.....	each	10.25
No. 675, 600-Ampere Rating.....	each	13.75

Three-E Clamp Insulator Supports



Type CIL
Pipe Mounting



Type CIL
Flat Mounting



Type MIL
Flat Mounting

Consists of porcelain spools held by metal clamps. The lower half is made of heavy pressed steel and the top half of heavy pressed non-ferrous metal. Also available with a heavy cast malleable base instead of pressed steel.

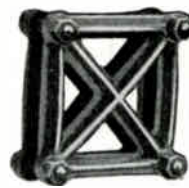
Can be used on either a.c. or d.c. service. Available for conductor sizes ranging from 3/16 to 3 1/2 inches.

Three-E Bus Clamps

Heavy Duty



Type AD



Type HD

Available for all sizes of bus bars used commercially. The extra heavy duty type is recommended where a large number of bars is used to carry currents of high amperage.

Medium Duty



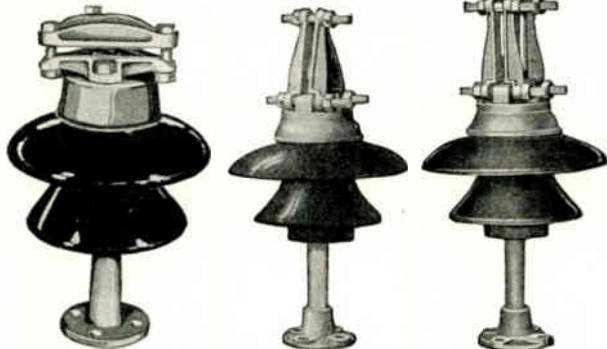
Type AM



Type HM

For average conditions in central station and industrial plant work. Both heavy and medium duty clamps are available for a.c. or d.c. service. Type of service should be specified when ordering.

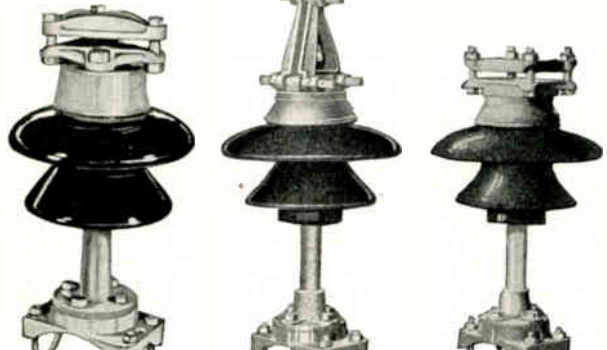
Three-E Outdoor Bus Supports



Type BFU

Type AFU

Type HFU



Type BPU

Type APU

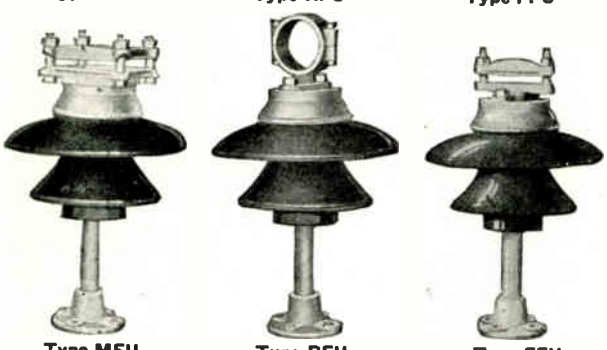
Type MPU



Type HPU

Type RPU

Type FPU



Type MFU

Type RFU

Type FFU

The Three-E line of Outdoor Bus Supports is complete in every respect. It includes upright and underhung types for carrying: flat bars in vertical or horizontal positions or round conductors. Fittings are available for pipe mounting. Adjustable adaptors can be supplied to permit 90° adjustment on bus clamps. Three-E Bus Supports use outdoor insulating units which meet N.E.M.A. Standards for dimensions and performance, supplied in all ratings to 69,000 volts.

Three-E Form A-1 Indoor Bus Supports

For Flat Vertical Bus Bar



Type HF



Type AF



Type HP



Type AP

All bus supports illustrated are the Form A-1. Heavy pressed steel mounting bases are used on this form of bus support.

These supports are available for voltages from 5000 to 34,500 and the cantilever strength at insulator cap. of 6000 inch pounds.

Indoor bus supports are also furnished in what is known as Form A. This form uses heavy cast malleable bases.

For Round Buses



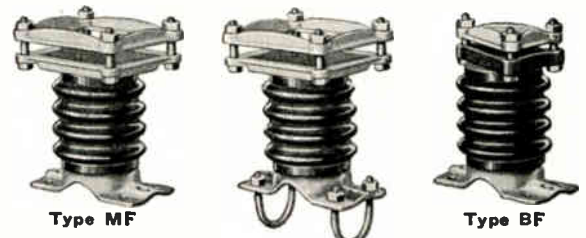
Type RF

Type RP

Type FF

Type FP

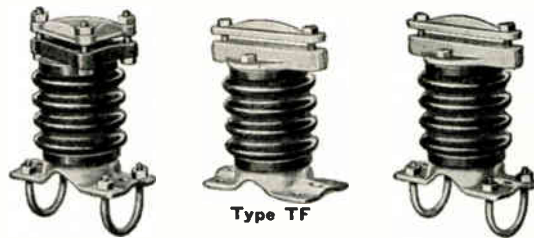
For Flat Horizontal Bus Bar



Type MF

Type MP

Type BF



Type BP

Type TF

Type TP

Ask for Bulletin Giving Complete Information

Three-E Potheads Indoor Types



A complete line of Three-E indoor potheads is available in both open bushing and capnut styles. Aerial lugs, pothead bodies and entrance flanges can be supplied in all shapes and sizes to fit almost every installation requirement. Furnished as standard in 1, 2, 3, and 4 conductor units in all commercial ratings. Special potheads are also available.

Disconnect Potheads



Disconnect heads and dummy caps and studs are available as standard units to fit Three-E Capnut style Potheads shown.

Flexibility of these disconnect heads in fitting standard pothead studs has proved to be a very economical means of converting regular potheads into the disconnect type.

Outdoor Capnut Potheads



Suitable for either indoor or outdoor service these potheads feature one piece bodies with clamped bushings and front inspection plate. Construction is air and oil tight. Can be supplied as standard with many body styles and various types of entrance fittings to fit all requirements.

Outdoor Open Bushing Potheads

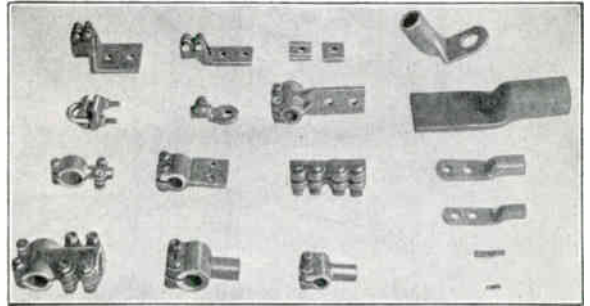


Available in 1, 2, 3, and 4 conductor units in voltages of from 2300 to 34,500.

Bushings inverted for full weather protection. Ideal for pole mounting.

Three-E Electrical Copper Fittings

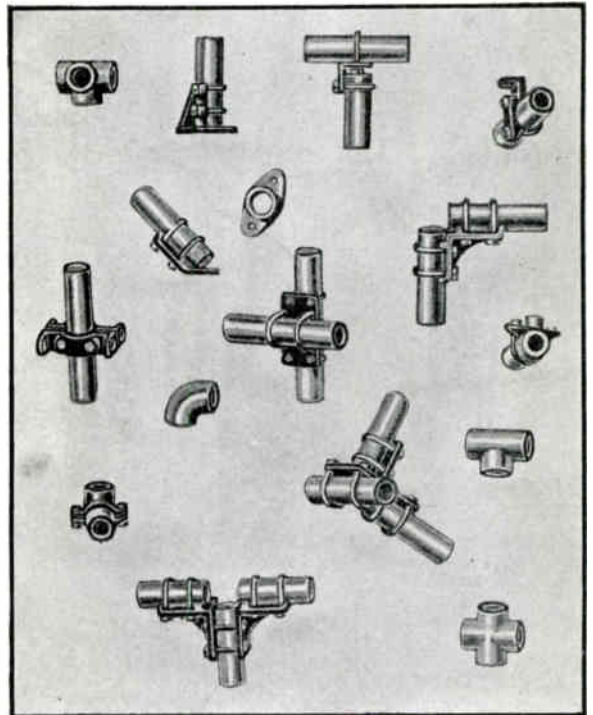
For Wire, Cable, Rod, Tubing and Bar



Only a very small portion of the Three-E line of copper fittings is shown in the above illustration. Clamp and solder types are available to meet practically every requirement in connecting wires, cables, rods, tubing and bars.

Only the best grade of electrolytic copper is used in Three-E connectors and careful machining is a major feature.

Three-E Iron Pipe Fittings

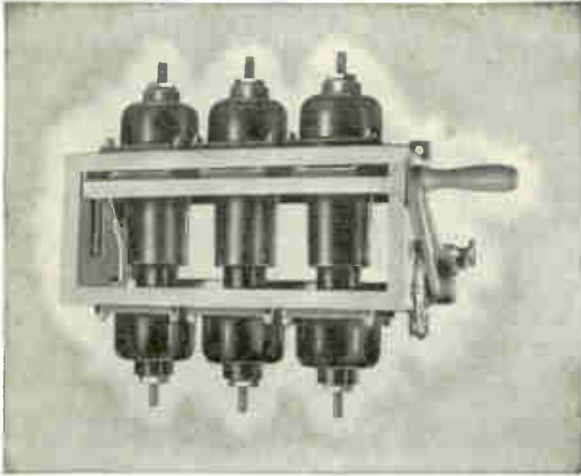


The above illustrations show but a small portion of the Three-E line of pipe fittings. Fittings can be supplied for the commercial pipe sizes in all manner of shapes to meet most any condition.

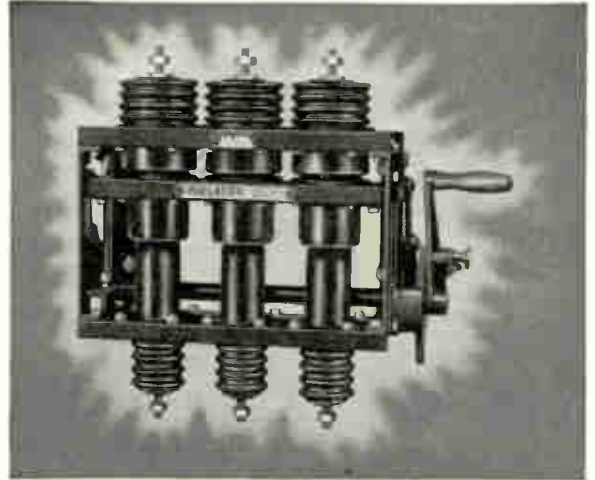
Ask for Bulletin Giving Complete Information



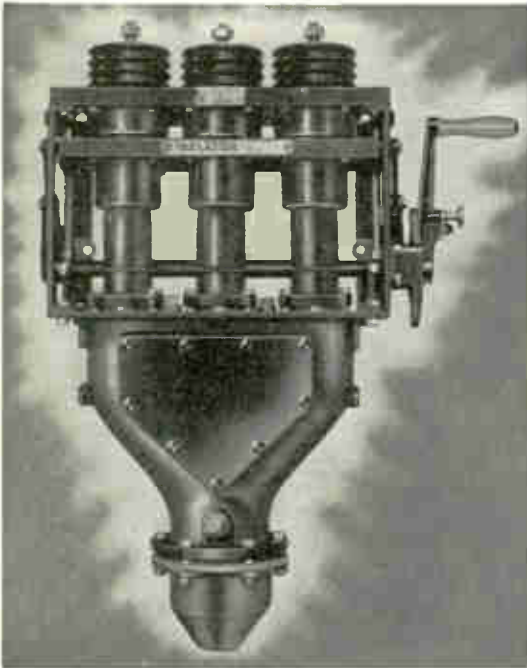
Three-E Isolators



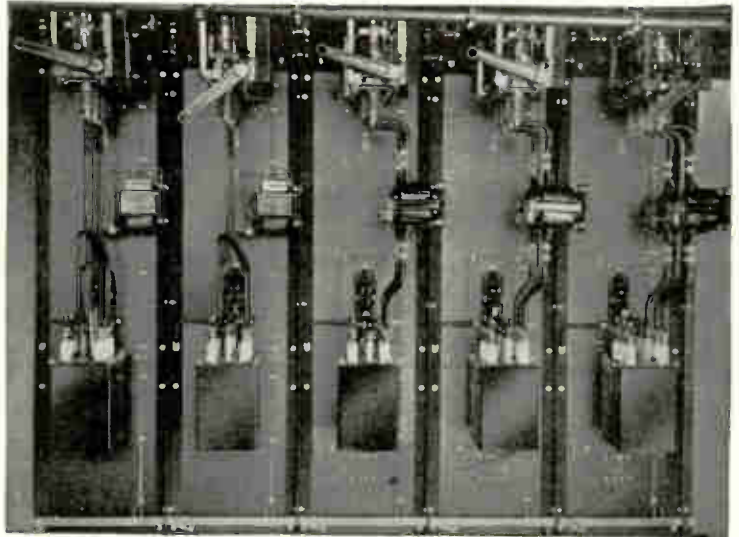
5 K.V. Telescoping Isolator



15 K.V. Telescoping Isolator



15 K.V. Cable Isolator



Typical Installation of Telescoping Isolators

Three-E Isolators have completely revolutionized disconnecting methods and cubicle design. Isolators consist of telescoping tubular current carrying parts operating within telescoping insulating bushings. Unique and compact design permits great savings to be made in space requirements, steel enclosures, etc., since Isolators occupy no more space in open position than in closed position while still maintaining proper clearances. Bushings are arranged for easy taping and live parts are fully enclosed, making accidental contact by the operator an impossibility.

Isolators are built in many forms to meet any installation problems and for interlocking with other equipment. Isolators are furnished in 1, 2, 3, and 4 pole units ratings of 200 to 2,000 amperes, and 5,000 to 15,000 volts.

Three-E Indoor Type Disconnecting Switches

The double blade type of construction is used throughout, giving the advantages of low temperature rise, self-aligning contacts, etc. The clips are cast copper.

Built for voltages from 110 to 34,500 and ampere capacity from 100 to 5,000.

Switches can be supplied in all combinations of front and back connection, of the single throw, double throw, and transfer types with or without blade locks, for flat or pipe mounting on steel, slate, marble, ebony asbestos and alberene stone.

Insulating barriers, blade stops, and terminals can be supplied for all switches.

Single Throw and Double Throw Types



Type W-1



Type W-2



Type W-5



Type W-6



Type W-7



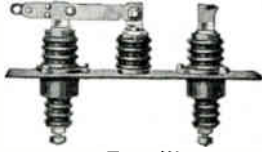
Type W-25



Type W-26



Type W-27



Type W-28



Type W-29

Transfer Types



Type W-30



Type W-31



Type W-32



Type W-33



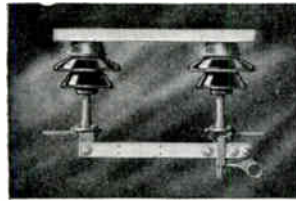
Type W-34



Type W-35

Ask for Bulletin Giving Complete Information

Three-E Outdoor Disconnects



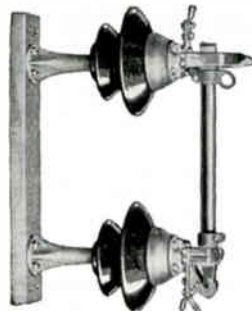
Available in single and double throw. Tandem transfer and double blade transfer in upright, vertical and underhung mountings, rating from 400 to 2000 amperes, and 7500 to 69,000 volts.

Equipped with horn type locks and N.E.M.A. standard insulators.

Distribution and Rural Line Disconnects are furnished in standard sizes of 200 to 400 amperes and from 7.5 to 34.5 K.V.

The 400 and 600 ampere Line Suspension Switches for all spans supplement a very complete and high quality line of Three-E Outdoor Disconnects.

Three-E Outdoor Fuse Disconnects



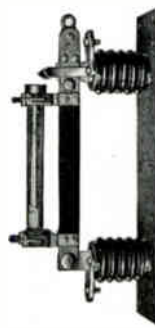
Type F.V.H.

Available as expulsion Fuses or arranged for use with S & C liquid fuses.

Furnished in all standard ratings and mountings for stick operation.

Features simplicity and easy fuse replacement.

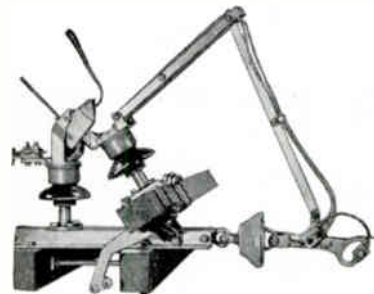
Three-E Indoor Fuses and Fuse Mountings



Available in disconnect type as shown or in permanent mounting styles.

Furnished in all standard ratings and mounting—Styles with or without locks.

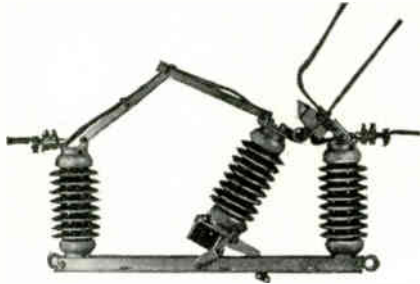
No. 8900-L Type Three-E Air Break Switches



A rural line switch for pole top mounting features ease and flexibility of mounting. Arranged for cross arm or steel structure mounting and equipped with forged rings for strain insulators.

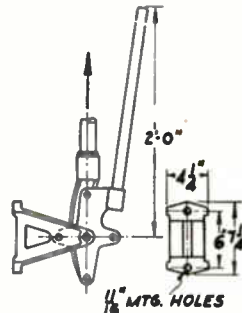
Used with Wood or steel shafts and Pivot sleet hoods for easy operation 7500 to 34,500 volts sizes in 3 and 4 pole units.

No. 8900-U Type Three-E Air Break Switches

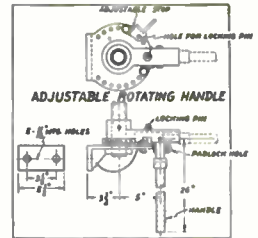


Same as No. 8900-L Type except supplied with three insulators per pole. Features simplicity of design, high quality materials, and careful construction. Pivot sleet-hoods, snap-break arcing horns, double clamp terminals furnished as standard equipment.
Available from 7500 to 34,500 volts.

Three-E Hand Control Mechanisms



Reciprocating



Torsional

Hand operating mechanisms for remote control of switches are available in rotating or reciprocating types and furnished with locking pins. These handles are very flexible in design and can be used to advantage wherever remote control is desired.

No. 6600 Type Three-E Sidebreak Switches

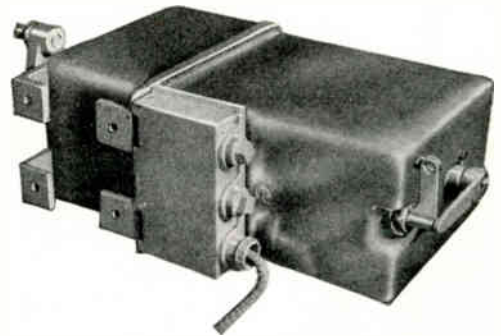


Furnished for rural service as pole units or for stations.

Pivot sleethoods standard on station types. Also available in No. 6200 style with three insulators and double break.

Standard ratings from 200 to 1200 amperes, and voltages to 161,000.

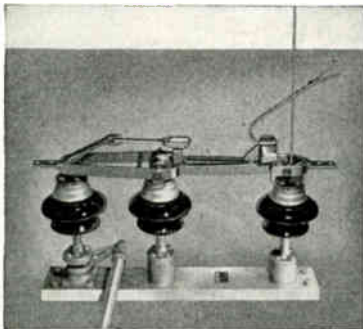
Three-E Motor Control Mechanisms



Automatic motor control of either torsional or reciprocating action for correct operation of all Three-E gang operated switches is available in the OM-100 motor mechanism.

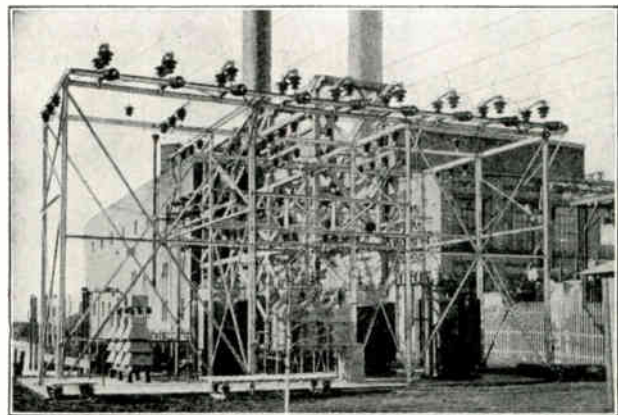
Equipped with auxiliary hand operating handle and completely sealed against dust and moisture. Internal heating unit keeps inside parts dry and always in condition for instantaneous operation

No. 8400 Three-E High Pressure Switches

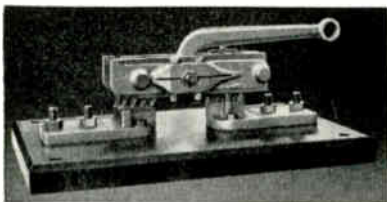


Features balanced high pressure. Unusually fine design remarkably easy to operate in all weather conditions. Pressure is predetermined and does not vary. Contact surfaces are self-cleaning. Patented limiting sleeve removes 90% of the strain on current carrying parts. A long-life switch for heavy duty service at low maintenance cost. Operated by hand or motor mechanism. Ratings to 161 K.V. standard.

Three-E Complete Substations



Type PH Three-E Indoor High Pressure Switches



A simple yet dependable pressure switch for stick operation individually or in gangs. Uses left and right hand threaded stud principle to establish high pressure.

Contacts are self-cleaning.

Furnished in ratings of 1200 to 6000 amperes from 5 to 15 K.V. Also available in outdoor types for stick or gang operation.

More than thirty years of designing and building substations of all sizes and types, both indoor and outdoor, have equipped Three-E engineers to give you the utmost in modern, correct substations that will prove to be economical and require a minimum in the way of maintenance costs.

Three-E engineers are always available to help you with your designing, building, or operation problems.

G & W Potheads

Unusually high factors of safety, generous clearances, liberal designs and accurate fit of separate parts are general characteristics of G & W Potheads.



Type T Capnut

Type T Capnut Style is a logical choice for general installations—indoors as well as outdoors. The positive seal against entrance of moisture also prevents leakage of compound and cable impregnating oil. Capnut potheads will withstand appreciable internal pressure and will provide the necessary protection to paper insulated cables. Available as standard for all voltages and conductor sizes, single and multiple conductor. Specify Type T for outdoors and Type NT for indoors.

Type ES is used wherever the disconnecting feature will add to the convenience of system operation. Inasmuch as all live parts are enclosed in porcelain, they provide a desirable protection in close quarters, indoors or outdoors. This pothead provides hermetically sealed protection to single and multiple conductor cables. Available in three ampere ratings, 100, 250, and 500; and in three voltage ratings, 5,000, 7,500, and 15,000. Gang operated disconnecting potheads are a further convenience for quick isolation of circuits.

Type ES Disconnecting



Type N Straight Through

Types N, P, and L are for varnished cambric and rubber insulated cables; these are straight through style potheads and can be used indoors (or outdoors up to 600 volts). The conductors pass through the pothead without splicing and no sealing connectors are used. Hence, this style should not be used on paper insulated cables if there is an appreciable static pressure head, because taped up bushings and asphalt base compound will not seal cable oil under pressure.



Type P Porcelain Lid, 6600 Volts Indoor



Type L, 600 Volts Outdoor



Type C Flexible Band Cable Support



Type T



Type ES



Type A

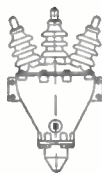


Type B

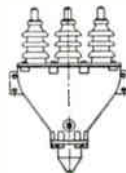
Control Cable Heads

With or without conduit fittings on top end. Bakelite lids are furnished with proper number and size of holes for conductors. Also suitable for motor connections.

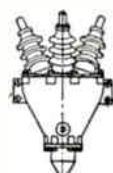
Standard Shapes of Multiple Conductor Potheads



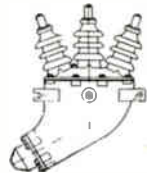
Shape B



Shape C



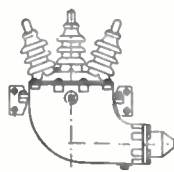
Shape D



Shape BY



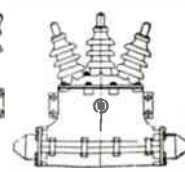
Shape BW



Shape BK



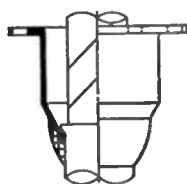
Shape BU



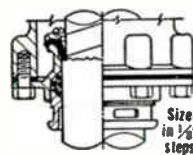
Shape BT

When ordering potheads, specify type of pothead (and whether outdoor or indoor); No. of conductors and size of conductors; voltage rating of pothead (or circuit voltage); shape of pothead, if multiple conductor; cable diameters (also style of base fittings); and whether G & W Novoid compound is wanted.

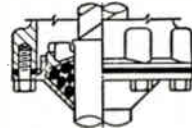
Interchangeable Base Fittings



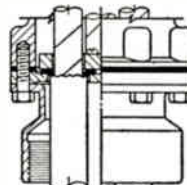
Wiping Sleeve—"WS"



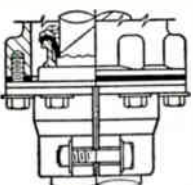
Clamp ring and stuffing box. Invert when used with CC. Symbol—"CR-SB"



Plain stuffing box. Can be drilled on job to cable size. Uses cord packing. Symbol—"SB"



Symbol—"PB" & conduit coupling "CC"



Symbol—"CR-SB" & armor clamp "AC"



Conduit Bell for Closing Top of Conduit and Supporting Cables



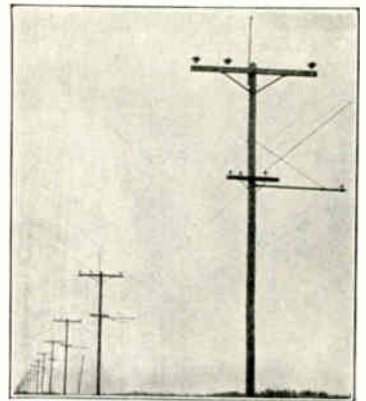
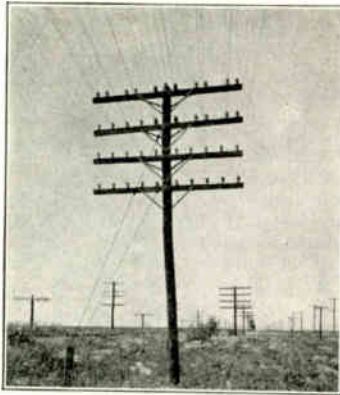
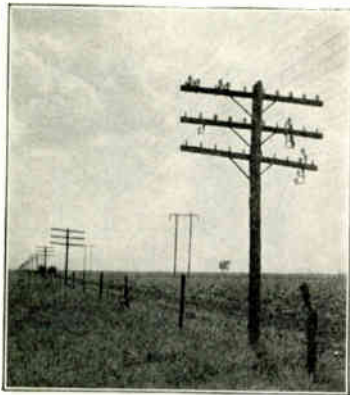
Type D Straight Splice Boxes



Type D 3-Way (Tee) Splice Boxes

Information regarding complete line of G & W Specialties furnished on request.

International Creosoted Pine Poles



Old Lines of International Creosoted Pine Poles—25 Years in Service
In Above Lines—6712 Poles— $\frac{1}{2}$ of 1 Per Cent Replaced to Date (1933)

General

Graybar Electric Company brings to the utility trade the highest quality in creosoted pine poles and offers for support of this statement the fact that its supplier has more long-time service records of poles without failures than any creosoting concern. Low annual cost, reliability, the fact that in times of financial stress or weather hazard the utility company *needs lines that will stand without failure*, all of these have dominated us in our creosoted pine pole policy.

International As A Supplier

Our supplier, International Creosoting and Construction Company, organized in 1875 and one of the largest commercial creosoting concerns in the business, has an outstanding record and a dominant place in the treating industry. We call special attention to the records of old and new lines cited in this concern's photographs here shown. They are typical, and a few of the many available.

Operating in one of the finest timber-producing areas in the South-West, International has added to its advantages of location and natural resources the skill of graduate chemical engineers and treating operators whose work is conducted in modern plants and well equipped laboratories. Pioneered and trained by a background of 65 years experience, International timbermen select the cream of the timber area (surpassing even the quality of the lumber logging operations) for the manufacture of Graybar-International poles. This production moves to conditioning yards at the treating plants by means of a highly developed and well organized concentrating system. The yards themselves have been built in conformity with Government seasoning recommendations.

Always using only one grade, and that the best grade of creosote in the treatment of its poles, and standing against every tendency towards departures in quality or reduction in quantity of the preservative that would make of the user's line an experimental laboratory, Graybar-International creosoted pine poles have gone to almost every state of the Union and without exception have given outstanding service.

Reasons For The Standing Of The International Pine Pole

- | | |
|--------------------|---------------------|
| 1—Long Life | 5—Cleanliness |
| 2—Low Annual Cost | 6—Fire Resistant |
| 3—Great Strength | 7—Bird Resistant |
| 4—Lasting Strength | 8—Termite Resistant |

The utilities of the United States use more creosoted pine than all other treated poles put together. Only briefly need their qualifications be given to account for this preference. The tall straight pine trees of the South are natural poles. They grow with a gradually tapering stem, practically without branches, and when sheared of their bark and browned as the result of treatment, they present a stately appearance in the line. Their wood is the strongest of the poles commonly used in line construction. Fortunately pine is a wood into which creosote goes very deeply during the course of scientifically controlled and proper treating operation, and the depth of this protection is the reason for the exceedingly long life of the pine pole. It is the explanation also of pine's resistance to termite attacks, for the checks which open in

every wood and expose it to the ravages of these insects do not go past the deep creosote penetration in the pine pole. Modern methods and advances in the science of wood preservation now makes available the creosoted pine pole so well manufactured in appearance, and with surface so clean that they are in use on the streets of New York, Detroit, Los Angeles, St. Louis, Baltimore, Boston, San Francisco, and thousands of other cities.

American Standards Association
Specifications for Southern Pine Poles

Approved June 20, 1931



Introduction

These specifications cover southern pine poles which are to be given a preservative treatment. The poles are to be classified in accordance with the American Standard Dimensions of Creosoted Southern Pine Poles (05e2-1931), which is a part of these specifications.

The length and class of poles wanted and full details of the framing desired shall be stated in the orders.

The details of any marking, including length and class marks, to be placed on the poles shall be in accordance with instructions from the purchaser.

Complete detailed instructions shall be given the supplier in all cases where modifications are to be made in these specifications to meet special requirements.

1.—Material Requirements

1.1—Species

All poles shall be cut from live southern pine timber: Longleaf Pine (*Pinus palustris*), Shortleaf pine (*Pinus echinata*), Loblolly Pine (*Pinus taeda*), Slash Pine (*Pinus caribaea*), and Pond Pine (*Pinus rigida serotina*).

1.2—Prohibited Defects

All poles shall be free from decay, red heart, cracks, plugged holes, and bird holes. Nails, spikes, and other metal shall not be present in the poles unless specifically authorized by the purchaser.

1.3—Permitted Defects

1.31 BLUE SAP STAIN.—Blue sap stain that is not accompanied by softening or other disintegration of the wood (decay) is permitted under these specifications.

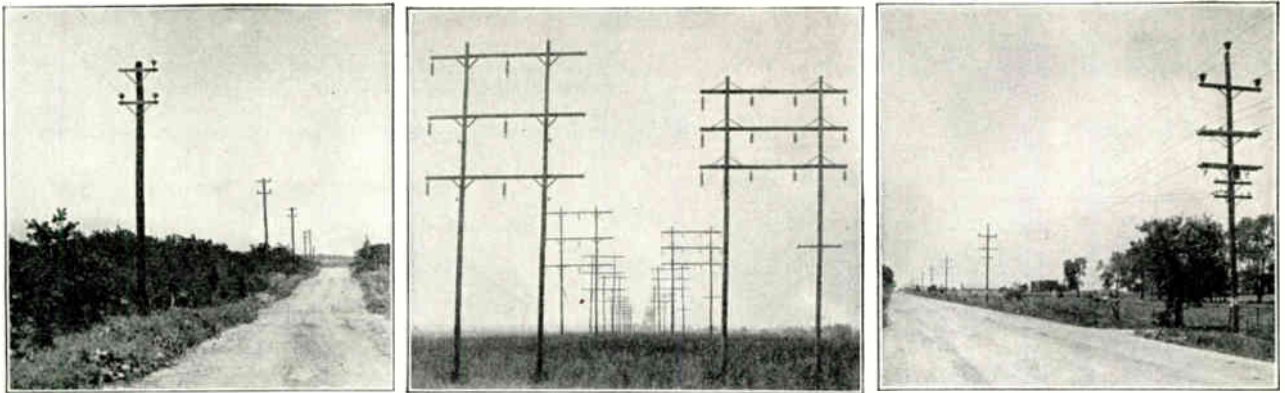
1.32 HOLLOW PITH CENTERS.—Hollow pith centers in the tops or butts of poles and in knots are permitted.

1.4—Limited Defects

1.41 CHECKS.—The top and side surfaces of poles shall be free from injurious checks.

1.42 SHAKES.—Shakes in the butt surface extending over not more than one-quarter ($\frac{1}{4}$) of the circumference are permitted provided they are at least one (1) inch distant from the edge of the butt. Shakes extending over more than one-quarter ($\frac{1}{4}$) of the circumference are permitted when they are inside of a circle whose center corresponds to the center of the butt surface and whose diameter equals one-half ($\frac{1}{2}$) of the average butt diameter.

International Creosoted Pine Poles



New Lines of International Creosoted Pine Poles—18 Years in Service
In Above Lines—4026 Poles—No Replacements to Date (1941)

Specifications for Southern Pine Poles

Continued

Shakes in the top surface whose width does not exceed one-sixteenth ($\frac{1}{16}$) of an inch are permitted provided they do not extend over more than one-half ($\frac{1}{2}$) of the top circumference.

1.43 SPLITS.—Splits are prohibited in the top surfaces of poles. Splits in butt surfaces are permitted provided that their height from the butt along the side surfaces does not exceed two (2) feet.

1.44 GRAIN.—No pole shall have more than one (1) complete twist of grain in any twenty (20) feet of length.

1.45 INSECT DAMAGE.—Insect damage consisting of holes less than one sixteenth ($\frac{1}{16}$) of an inch in diameter is permitted.

1.46 KNOTS.—The diameter of any single knot or knot cavity, or the sum of the diameters of all knots and knot cavities in any one (1) foot section shall not exceed the limits set up in the following table. Knots and knot cavities one-half ($\frac{1}{2}$) of an inch or under in diameter shall be ignored in applying the limitations for sum of diameters.

Limitations of Knot Size

Length of Pole	MAXIMUM SIZES PERMITTED, INCHES		
	DIAMETER OF ANY SINGLE KNOT OR KNOT CAVITY	Sum of Diameters of All Knots and Knot Cavities in Any 1 Foot Section	All Classes
	Classes 1-3	Classes 4-10	
45 Ft. and Under	4	3	8
50 Ft. and Over	5	5	10

Knots one (1) inch or over in diameter, showing discoloration or softness of fibre, indicating possible decay, shall be neatly gouged to a depth of not more than one-fifth ($\frac{1}{5}$) of the diameter of the pole at the point where the knot is located, to permit determination of the character and extent of decay. The gouging shall be done without unnecessary removal of sound wood, and in such a manner as to insure drainage of water from the hole when the pole is set. Where such gouging does not completely remove the decay (heart rot), the pole shall be rejected.

Knots under one (1) inch in diameter need not be gouged unless after trimming the presence of decay is revealed and upon further examination the decay is found to extend to a depth of more than two (2) inches.

When more than one (1) cavity is present in a pole, the sum of the depths of all cavities in the same six (6) inch longitudinal section of the pole shall not exceed one-third ($\frac{1}{3}$) of the mean diameter of that section.

1.47 SCARS.—No pole shall have a turpentine face or other scar located within two (2) feet of the ground line.

In other sections of the pole, scars which have been smoothly trimmed so as to remove all bark and all surrounding or overhanging wood that is not completely intergrown with the wood of the body of the pole are permitted, provided

(a) that such trimming does not result in abrupt changes in the contour of the pole surface and that trimmed scar does not have a depth of more than one (1) inch, except that where the diameter of the pole at the location of the scar is more than ten (10) inches the depth may be one-tenth ($\frac{1}{10}$) of the diameter; and

(b) that the circumference of the pole at any point on trimmed surfaces located between the butt and a point two (2) feet below the ground line is not less than the circumference of the pole at the ground line.

1.48 SHAPE.—Poles shall be free from short crooks.

A pole may have sweep subject to the following limitations:

(a) Where sweep is in one (1) plane and one (1) direction only, a straight line joining the surface of the pole at the ground line and the edge of the pole at the top shall not be distant from the surface of the pole at any point by an amount greater than one (1) inch for each six (6) feet of length between these points.

(b) Where sweep is in two (2) planes (double sweep) or in two (2) directions in one (1) plane (reverse sweep), a straight line connecting the mid-point at the ground line with the mid-point at the top shall not at any intermediate point pass through the external surface of the pole.

2.—Dimensions

2.1—Length

Poles under fifty (50) feet in length shall not be over three (3) inches shorter or six (6) inches longer than nominal length. Poles fifty (50) feet or over in length shall not be over six (6) inches shorter or twelve (12) inches longer than nominal length.

Length shall be measured between the extreme ends of the pole.

2.2—Circumference

Poles shall be classified in accordance with the American Standard Dimensions of Creosoted Southern Pine Poles. Minimum allowable circumferences at six (6) feet from the butt (except for Classes 8, 9, and 10), and at the top, for each length and class of pole listed, are shown in this standard. Poles having circumferences which are greater, at the same points of measurement, than those shown for the length and class desired, shall be acceptable, provided that the six (6) foot from butt circumference is less than the minimum given for the second larger class pole of the same length. The top dimensional requirement shall apply at a point corresponding to the minimum length permitted for the pole.

International Creosoted Pine Poles
Specifications for Southern Pine Poles

Continued

Dimensions of Creosoted Southern Pine Poles

Lgth. of Pole Ft.	Dist. from Butt Feet	CLASS									
		MINIMUM TOP CIRCUMFERENCE, INCHES					MINIMUM CIRCUMFERENCE AT 6 FEET FROM BUTT, INCHES				
		1	2	3	4	5	6	7	8	9	10
16	3½	27	25	23	21	19	17	15	18	15	12
18	3½	27	25	23	21	19	17	15	18	15	12
20	4	31.5	29.5	27.5	25.5	23.5	22.0	20.0	21.0	19.0	17.0
22	4	33.0	31.0	29.0	26.5	24.5	23.0	21.0	22.0	20.0	18.0
25	5	34.5	32.5	30.0	28.0	26.0	24.0	22.0	23.0	21.0	19.0
30	5½	37.5	35.0	32.5	30.0	28.0	26.0	24.0	25.0	23.0	21.0
35	6	40.0	37.5	35.0	32.0	30.0	27.5	25.5	26.5	24.5	22.5
40	6	42.0	39.5	37.0	34.0	31.5	29.0	27.0	28.0	26.0	24.0
45	6½	44.0	41.5	38.5	36.0	33.0	30.5	28.5	29.5	27.5	25.5
50	7	46.0	43.0	40.0	37.5	34.5	32.0	29.5	30.5	28.5	26.5
55	7½	47.5	44.5	41.5	39.0	36.0	33.5	31.0	32.0	30.0	28.0
60	8	49.5	46.0	43.0	40.0	37.0	34.5	32.0	33.0	31.0	29.0
65	8½	51.0	47.5	44.5	41.5	38.5	36.0	33.5	34.5	32.5	30.5
70	9	52.5	49.0	46.0	42.5	39.5	37.0	34.5	35.5	33.5	31.5
75	9½	54.0	50.5	47.0	44.0	41.0	38.5	36.0	37.0	35.0	33.0
80	10	55.0	51.5	48.5	45.0	42.0	39.5	37.0	38.0	36.0	34.0
85	10½	56.5	53.0	49.5	46.0	43.0	40.5	38.0	39.0	37.0	35.0
90	11	57.5	54.0	50.5	47.0	44.0	41.5	39.0	40.0	38.0	36.0

*No butt requirement on Classes 8, 9 and 10.

3.—Manufacturing Requirements

3.1—Bark Removal

Outer bark shall be completely removed from all poles. No patch of inner bark left on the pole surface shall be more than one quarter (¼) of an inch in width or more than four (4) inches long.

3.2—Sawing

All poles shall be neatly sawed at the butt along a plane which shall not be out of square with the axis of the pole by more than two (2) inches per foot of diameter of the sawed surface. Beveling at the edge of the sawed butt surface not more than one-twelfth (1/12) of the butt diameter in width, or an equivalent area unsymmetrically located, is permitted.

3.3—Trimming

Branch stubs, partially overgrown knots, and completely overgrown knots rising more than one (1) inch above the pole surface shall be trimmed close. Completely overgrown knots less than one (1) inch high need not be trimmed.

3.4—Framing

All poles shall be framed in accordance with the terms of the order before they are subjected to the preservative treatment.

Gains on poles showing sweep or curvature shall be located on the concave side in the plane of the greatest curvature.

All gains on the same pole shall be cut so that their flat surfaces are approximately parallel. Conformance to this requirement may be tested by placing straight edges thirty (30) inches long on the faces of the finished gains so that the ends of the straight edges extend fifteen (15) inches on either side of the center line of the pole. The straight edges in any two (2) gains, when sighted in the direction of the longitudinal axis of the pole, shall not be out of parallel at their ends by more than one-sixteenth (1/16) of an inch. Bolt holes shall be bored perpendicular to the faces of the gains.

4.—Storage and Handling

4.1—Storage

When it is necessary for any reason to hold in storage poles offered under these specifications, they shall be stacked on creosoted or non-decaying skids of such dimensions and so arranged as to support the poles without producing noticeable distortion of any of them. Poles shall be piled in such a manner as to permit free circulation of air and they shall be supported at all points at least one (1) foot above the general ground level, or any vegetation growing thereon. No decayed or decaying wood shall be permitted to remain underneath stored poles.

4.2—Handling

Pole tongs, cant hooks, and other pointed tools capable of producing indentations of more than one (1) inch in depth shall not be used on poles furnished under these specifications.

5.—Definitions of Terms

The following definitions shall apply in these specifications:

5.1—Fungous Defects

5.11 BLUE SAP STAIN.—Blue sap stain is a bluish coloration in the sapwood, caused by the action of certain molds and fungi, that is not accompanied by softening or other disintegration of the wood.

5.12 DECAY.—Decay is disintegration of wood substance due to the action of wood-destroying fungi. Rot and Dote mean the same as Decay.

5.13 RED HEART.—Red heart is the incipient stage of a destructive heart rot caused by *Trametes pini* that occurs in the living tree. It is characterized by a reddish or brownish color in the heartwood.

5.2—Insect Defects

5.21 INSECT DAMAGE.—Insect damage is the result of boring in the pole by insects or their larvae. Scoring or channeling of the pole surface is not classed as insect damage.

5.3—Timber Defects

5.31 CHECKS.—Checks are lengthwise separations of the wood in a generally radial direction.

Heart checks are checks which extend from the pith center of the pole toward but not to the periphery of the pole.

5.32 CRACKS.—Cracks are breaks or fractures across the grain of the wood.

5.33 SCARS.—Scars or cat faces are depressions in the surface of the pole, generally elliptical in shape, resulting from wounds where healing has not re-established the normal cross section of the pole.

5.34 SHAKES.—Shakes are separations of the wood, generally parallel with the annual rings.

5.35 SPLITS.—Splits are separations between the fibers of the wood extending from surface to surface through the pole.

5.4—Shape

5.41 SHORT CROOK.—A short crook is a localized deviation from straightness which, within any section of five (5) feet or less in length, is more than one-half (½) the mean diameter of the crooked section. (See Diagram 3 of the subsidiary drawing entitled "Measurement of Sweep and Short Crook in Poles.")

5.42 SWEEP.—Sweep is the deviation of a pole from straightness. (See diagrams 1 and 2 of the subsidiary drawing entitled "Measurement of Sweep and Short Crook in poles.")

5.5—Miscellaneous

5.51 KNOT DIAMETER.—The diameter of a knot is its diameter on the surface of the pole measured in a direction at right angles to the lengthwise axis of the pole.

5.52 LIVE TIMBER.—Live timber is that cut from a tree which was standing and living at the time of cutting.

6.—Subsidiary Drawing

The following drawing is subsidiary to the text of these specifications:

Measurement of Sweep and Short Crook in Poles.

7.—Subsidiary Standard

The foregoing dimension table is subsidiary to the text of these specifications: It is designated as:

American Standard Dimensions of Creosoted Southern Pine Poles (05e2-1931).

International Creosoted Pine Poles

Measurement of Sweep and Short Crook in Poles

Diagram 1—Measurement of Sweep in One Plane and One Direction

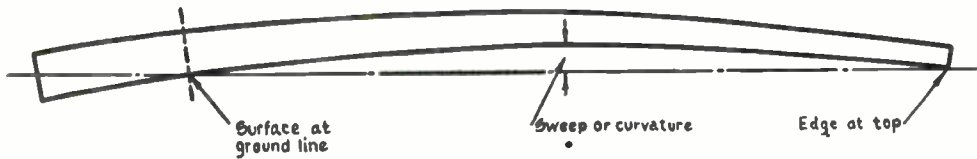


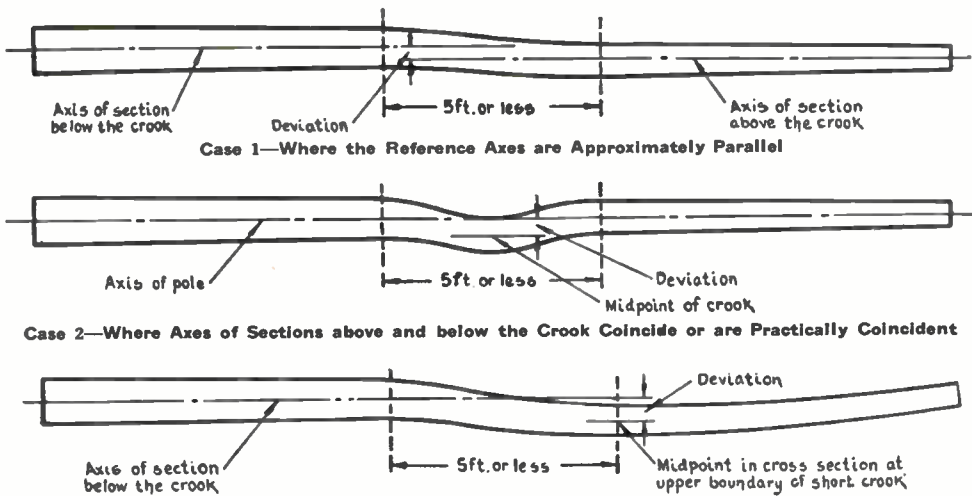
Diagram 2—Measurement of Sweep in 2 Planes (Double Sweep) or in 2 Directions in One Plane (Reverse Sweep)



NOTE: Diagram No. 2 applies to the measurement of double sweep in Western Red Cedar and Southern Pine

Poles. For measurement of double sweep in Northern White Cedar and Chestnut Poles, see text.

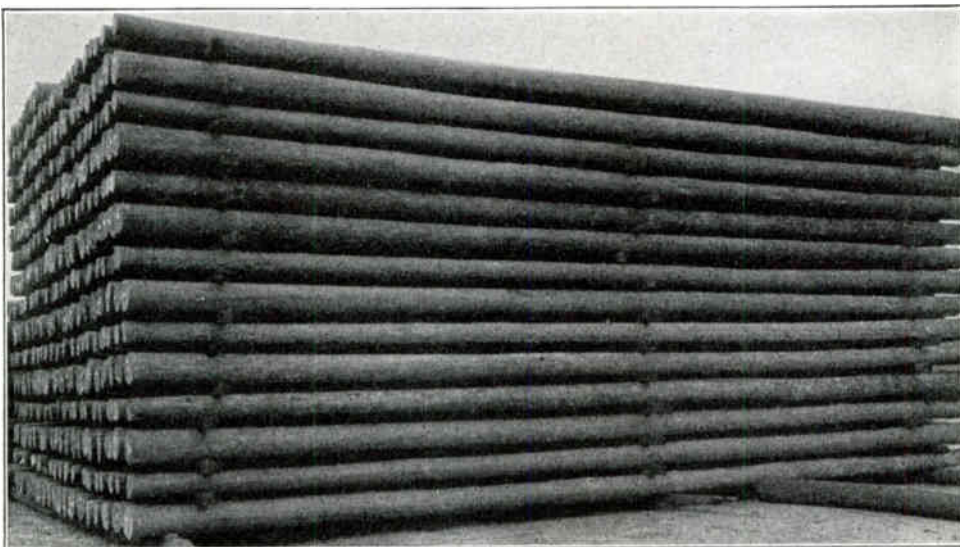
Diagram 3—Measurement of Short Crook (Three Cases Shown)



Case 3—Where Axis of Section above Short Crook is not Parallel or Coincident with Axis below the Crook

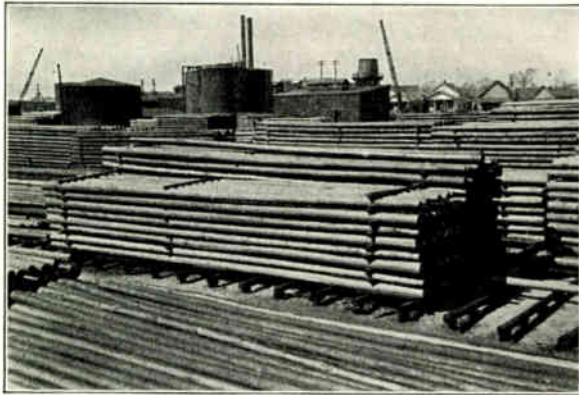
NOTE: The three cases shown under Diagram 3 are typical and are intended to establish the principle of meas-

uring short crooks. There may be other cases not exactly like those illustrated.



International Pine Poles have the Straightness and Symmetry of a Machined Product

International Creosoted Pine Poles



Stacks Such as Here Shown on One of International's Conditioning Yards Make Possible Our Quick Shipment of Quality Creosoted Pine Poles

*Specification for the Preservative Treatment of Southern Yellow Pine Poles

Rueping Empty Cell Process

*Note: A descriptive specification only. It must be recognized that specifications do not guarantee quality, and should not be regarded as adequate protection to the buyer. In any treated wood, the all important factor is the source of supply.

General

The following specification is intended to obtain an empty cell treatment for the poles; and if the material to be treated is in a different condition as to moisture and seasoning, material for each retort charge shall be selected as to condition of moisture so that there will be no great difference in degree of seasoning in any one charge. Only perfectly sound poles shall be treated. The treating plant shall be equipped with indicating and recording gauges and other necessary apparatus for accurately observing and recording the treating process. Above the level of the creosoting cylinder there shall be an overhead drum for the purpose of determining that the cylinder is full of preservative and free from air and the gauge reading indicating a full cylinder shall not be taken until the preservative is seen to overflow through the valve on top of this drum; there shall also be a sap drum below the level of the cylinder by means of which sap and condensation shall be removed regularly. The treating plant must have all the necessary chemicals, a laboratory and laboratory apparatus to enable the quality of preservative to be determined.

Seasoning

Air-Seasoning

In air-seasoning, the poles shall be stacked in such a manner as to provide free air circulation and minimum contact between individual pieces in each stack. These stacks shall be placed on treated or otherwise permanent skids at least six inches above the ground on a well drained storage yard free from vegetation and decaying wood, so located that prevailing winds strike it freely, and each layer shall be separated by creosoted strips. Alleys between the stacks shall be wide, continuous and straight. The material shall remain until in the judgment of the inspector it is sufficiently seasoned to obtain the maximum benefit from the treatment.

Seasoning By Steam

When time for air-seasoning is not available, steam seasoning shall be used. Live, saturated steam shall be admitted to the treating cylinder taking care that all air is swept from the cylinder before the outlet valve is closed. Pressure shall then be raised gradually to the maximum temperature desired, this maximum being determined by the treating inspector. It should not be less than 254° F., not more than 259° F. The duration of the steaming process is dependent upon the degree of seasoning of the poles in the cylinder charge but shall in no case be carried to such an extent as to injure the timber.

Initial Vacuum

After the steaming process has been completed the steam shall be blown off and the treating cylinder exhausted as quickly as possible to as high a vacuum as possible, which must be at least twenty-four inches at sea level or proportionately less at higher altitudes. This vacuum shall be maintained for at least one hour or for whatever longer period is necessary, so that the wood may be as dry and free from air as practicable. During the exhaustion process the temperature within the treating cylinder shall be maintained by means of steam under pressure in the closed coils. The cylinder shall be relieved of sap and condensation continuously.

Top Dimension Poles

Top dimension poles conform in all respects to American Standards Association Specification poles, with the sole difference that top diameter poles specify minimum top diameter only; whereas A. S. A. Specification poles specify both minimum top circumference and circumference six feet from the butt.

Length Feet	TOP DIAMETER IN INCHES*							
16	4-5	5-6	6-7	...	...	...	...	...
18	4-5	5-6	6-7	...	...	...	...	...
20	4-5	5-6	6-7	7-8	...	...	...	...
25	4-5	5-6	6-7	7-8	8-9	...	...	...
30	...	5-6	6-7	7-8	8-9	...	...	...
35	...	5-6	6-7	7-8	8-9	...	...	...
40	...	...	6-7	7-8	8-9	9-10	...	...
45	...	...	6-7	7-8	8-9	9-10	...	...
50	...	...	...	7-8	8-9	9-10	...	...
55	...	...	...	7-8	8-9	9-10	...	...
60	...	...	...	7-8	8-9	9-10	10-11	...
65	...	...	...	7-8	8-9	9-10	10-11	...
70	...	...	...	7-8	8-9	9-10	10-11	...
75	...	...	...	7-8	8-9	9-10	10-11	...

Anchor Logs

Anchor logs conform in all respects to the specification for top dimension poles.

3	...	5-6	6-7	7-8	8-9	9-10	...
4	...	5-6	6-7	7-8	8-9	9-10	...
5	...	5-6	6-7	7-8	8-9	9-10	...
6	...	5-6	6-7	7-8	8-9	9-10	...
7	...	5-6	6-7	7-8	8-9	9-10	...
8	...	5-6	6-7	7-8	8-9	9-10	...
9	...	5-6	6-7	7-8	8-9	9-10	...

*Note: Top diameter is determined by placing a tape around the circumference of the pole at the base of the roof.

What an Order Should Show

To avoid delays and prevent the possibility of error, an inquiry or an order for International poles should contain the following information:

- 1.—Name of consignee.
- 2.—Destination of shipment.
- 3.—Date shipment is desired.
- 4.—Number of poles required.
- 5.—Length and minimum top diameter.
- 6.—Number of pounds of creosote required per cubic foot of wood.
- 7.—Type of framing desired. A blue print or sketch is preferable. Poles can be framed more economically at a treating plant than in the field at point of installation. Insofar as possible therefore complete framing instructions are desirable.

International Creosoted Pine Poles

Specification for the Preservative Treatment of Southern Yellow Pine Poles

Seasoning—Continued

Initial Air Pressure

In the case of air-seasoned poles, Initial Air Pressure is the first step in the treating process. With steam-seasoned poles this step immediately follows the Initial Vacuum.

The poles shall be subjected to air pressure of sufficient intensity and duration (usually 40 lbs. to 100 lbs.) to provide under a quick high vacuum the ejection of surplus preservative, and to insure a retention and proper distribution of the stipulated number of pounds of preservative per cubic foot of wood.

Treatment

The creosote shall be introduced between 170° F. and 210° F., the cylinder pressure being maintained constant until the cylinder is filled. The oil must be seen by the inspector to flow from the overhead drum on top of the treating cylinder, thus assuring him that the cylinder is completely filled with the preservative. The pressure shall then be gradually raised to and maintained at a minimum of 150 lbs. per square inch until there is obtained the largest gross absorption that can be reduced to the stipulated final retention, calculation being based on readings of the working tank gauges and the weight of the creosote at 100° F. The quantity of oil for final retention shall be based on the cubic content of wood in the treating cylinder as determined by actual measurement of the top and butt of each pole in each charge. Under no conditions may shortage of oil in one charge be offset by overage in another; the minimum final retention in each case must be 100 per cent of the quantity of creosote specified.

Final Vacuum

After pressure is completed and the cylinder is emptied of oil a sufficient vacuum shall be promptly created and maintained until the timber can be removed from the cylinder free from dripping oil.

Penetration

The treating processes shall be directed toward complete sapwood penetration with the preservative.

Preservative

For preservative see Creosote Specification.

Note: A final retention of 8, 10 or 12 pounds of creosote per cubic foot are most frequently used. Of these, the 8-pound treatment is specified in the great majority of cases.

Standard Specifications for Creosote Oil
American Wood Preservers Association

Grade 1

- 1.—The oil shall be a distillate of coal-gas tar or coke-oven tar.¹ It shall comply with the following requirements:
- 2.—It shall not contain more than three per cent of water.
- 3.—It shall not contain more than 0.5 per cent of matter insoluble in benzol.²
- 4.—The specific gravity of the oil at 38° C., compared with water at 15.5° C., shall be not less than 1.03.
- 5.—The distillate, based on water-free oil, shall be within the following limits:
 - Up to 210° C., not more than 5 per cent.
 - Up to 235° C., not more than 25 per cent.
- 6.—The residue above 355° C., if it exceeds 5 per cent shall have a float test of not more than 50 seconds at 70° C.
- 7.—The oil shall yield not more than 2 per cent of coke residue.
- 8.—The foregoing tests shall be made in accordance with the standard methods of the American Wood-Preservers' Association. (See Manual—Creosote, Analysis.)

¹Owing to the complexity of the chemical composition and physical properties of coal-tar creosote oil, and to the fact that some of the same compounds and properties which characterize coal-tar creosote are found in certain petroleum derivatives, the determination of the purity of creosote is difficult. When there is not certain assurance that the oil is a pure product, the following tests will aid in arriving at an opinion as to its coal-tar origin:

A.—Fraction distilling between 210° and 235° C. is usually solid or contains some solids when cooled to 25° C.

B.—All of the fractions up to 315° C. contain tar acids in varying amounts, usually at least 1 per cent calculated on the amount of the fraction tested. (See Manual—Creosote, Analysis, Tar Acids.)

C.—The specific gravity of the fraction between 235° and 315° C. is usually not lower than 1.025 and specific gravity of the fraction between 315° and 355° C. is usually not lower than 1.085 at 38° C. compared with water at 15.5° C. However, some pure coal-tar distillates fall slightly below these limits.

If the oil does not comply with at least one of the foregoing tests it is undoubtedly not a pure coal-tar creosote.

²Samples of oil taken from working tanks may show an increase in matter insoluble in benzol due to treating operations. Such increases provided they do not exceed by 1 per cent the specification limits should not serve to cause rejection of the oil for non-conformity with specifications if it can be shown that the original fresh oil was of specified quality.

Depth of Creosote Penetration



Increment Borer

The increment borer shown here is used for extracting sections of wood from poles to determine how deeply the preservative has penetrated into the wood.

The use of this instrument is recommended as one means by which the buyer can gauge the quality of the product he receives. It does not damage the pole and the only precaution is that a creosoted wood plug be driven into the hole after the boring has been extracted.

For adequate protection it is essential that creosote penetrates wood deeply (see discussion on penetration later in this section).

Prices for increment borers, on request.

Machine Trimming

All International poles are now being machine trimmed for their entire length. The machines are the most modern type that has been developed, and the depth of cut is uniform from top to butt. Only a light shaving is made to remove the knots and other protuberances. The grading into classes is done after the trimming.

Machine trimming has many advantages. The freshly trimmed surface facilitates seasoning. Unnecessary cutting into the body of the pole by hand trimming and gouging is eliminated. The appearance of the pole is greatly improved and bleeding is further reduced.

International Creosoted Pine Poles

Estimated Weights of Poles

American Standards Association Specification Poles

Top Dimension Poles

Length Pole Feet	8 Pounds Final Retention									
	ESTIMATED WEIGHTS IN POUNDS									
	A.S.A. SIZE GROUP									
	1	2	3	4	5	6	7	8	9	10
16	....	....	....	....	254	212	179	240	179	122
18	....	....	409	363	301	263	216	277	212	141
20	635	555	479	418	353	310	259	315	235	169
25	898	808	686	602	508	423	362	423	324	221
30	1241	1076	921	780	672	573	489	541	423	...
35	1603	1410	1213	996	865	733	616	682	...	...
40	1974	1734	1499	1260	1048	884	761	...	...	...
45	2369	2087	1772	1528	1250	1062	921	...	...	...
50	2820	2435	2068	1777	1476	1246	1081	...	...	...
55	3220	2801	2411	2077	1739	1481	...	...	...	...
60	3798	3187	2750	2298	1988	1683	...	...	...	...
65	4362	3628	3163	2646	2265	...	...	...	...	...
70	4874	4145	3502	2947	2538	...	...	...	...	...
75	5429	4644	3892	3285	...	...	...	...	...	...

Length Pole Feet	10 Pounds Final Retention									
	ESTIMATED WEIGHTS IN POUNDS									
	A.S.A. SIZE GROUP									
	1	2	3	4	5	6	7	8	9	10
16	....	....	....	....	262	218	184	247	184	126
18	....	....	422	364	310	272	223	286	218	146
20	655	572	495	432	364	320	267	325	243	175
25	926	834	708	621	524	437	373	437	335	228
30	1280	1111	951	805	694	592	504	558	437	...
35	1654	1455	1251	1028	892	757	635	703	...	...
40	2037	1790	1547	1300	1082	912	786	...	...	...
45	2444	2153	1828	1576	1290	1096	951	...	...	...
50	2910	2512	2134	1833	1523	1285	1116	...	...	...
55	3322	2891	2488	2144	1795	1528	...	...	...	...
60	3919	3288	2837	2372	2052	1736	...	...	...	...
65	4501	3744	3264	2731	2338	...	...	...	...	...
70	5029	4278	3613	3041	2619	...	...	...	...	...
75	5602	4792	4016	3390	...	...	...	...	...	...

Length Pole Feet	12 Pounds Final Retention									
	ESTIMATED WEIGHTS IN POUNDS									
	A.S.A. SIZE GROUP									
	1	2	3	4	5	6	7	8	9	10
16	....	....	....	....	270	225	190	255	190	130
18	....	....	435	375	320	280	230	295	225	150
20	675	590	510	445	375	330	275	335	250	180
25	955	860	730	640	540	450	385	450	345	235
30	1320	1145	980	830	715	610	520	575	450	...
35	1705	1500	1290	1060	920	780	655	725	...	...
40	2100	1845	1595	1340	1115	940	810	...	...	...
45	2520	2220	1885	1625	1390	1130	980	...	...	...
50	3000	2590	2200	1890	1570	1325	1150	...	...	...
55	3425	2980	2565	2210	1850	1575	...	...	...	...
60	4040	3390	2925	2445	2115	1790	...	...	...	...
65	4640	3860	3365	2815	2410	...	...	...	...	...
70	5185	4410	3725	3135	2700	...	...	...	...	...
75	5775	4940	4140	3495	...	...	...	...	...	...

Length Pole Feet	8 Pounds Final Retention					
	ESTIMATED WEIGHTS IN POUNDS					
	TOP DIAMETER, INCHES					
	4-5	5-6	6-7	7-8	8-9	9-10
16	113	164	226	....	....	....
18	146	207	277	....	....	....
20	160	226	306	400	....	....
25	226	316	418	536	672	....
30	...	408	541	686	855	....
35	...	522	682	855	1058	....
40	...	...	857	1048	1278	1537
45	...	...	1011	1255	1523	1824
50	...	...	...	1485	1791	2129
55	...	...	...	1734	2082	2463
60	...	...	...	2012	2402	2825
65	...	...	...	2312	2740	3210
70	...	...	...	2636	3111	3628
75	...	...	...	2989	3511	4075

Length Pole Feet	10 Pounds Final Retention					
	ESTIMATED WEIGHTS IN POUNDS					
	TOP DIAMETER, INCHES					
	4-5	5-6	6-7	7-8	8-9	9-10
16	116	169	233	....	....	....
18	150	213	286	....	....	....
20	165	233	315	412	....	....
25	233	325	431	553	693	....
30	...	421	558	708	882	....
35	...	538	703	882	1091	....
40	...	...	873	1081	1319	1586
45	...	...	1043	1295	1571	1882
50	...	...	...	1532	1848	2197
55	...	...	...	1789	2148	2541
60	...	...	...	2076	2478	2915
65	...	...	...	2386	2827	3312
70	...	...	...	2720	3210	3744
75	...	...	...	3084	3623	4205

Length Pole Feet	12 Pounds Final Retention					
	ESTIMATED WEIGHTS IN POUNDS					
	TOP DIAMETER, INCHES					
	4-5	5-6	6-7	7-8	8-9	9-10
16	120	175	240	....	....	....
18	155	220	295	....	....	....
20	170	240	325	425	....	....
25	240	335	445	570	715	....
30	...	435	575	730	910	....
35	...	555	725	910	1125	....
40	...	...	890	1115	1360	1635
45	...	...	1075	1335	1620	1940
50	...	...	...	1580	1905	2265
55	...	...	...	1845	2215	2620
60	...	...	...	2140	2555	3005
65	...	...	...	2460	2915	3415
70	...	...	...	2805	3310	3860
75	...	...	...	3180	3735	4335

Characteristics of Quality Pine Poles

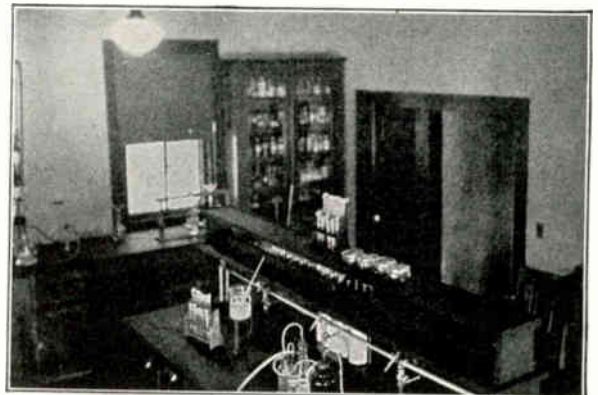
Status of Pine Poles

During a period covering the last several years, more treated pine poles have been used than all other treated poles put together. The utility that uses this commodity therefore is using the most generally accepted pole of the utility field. Important lines that must stand up under greatest stress and for the longest period of time are well built when built with quality-creosoted pine poles. Every sleet storm brings a further degree of proof of this fact. Bearing in mind the salvage value even of an abandoned line of creosoted pine poles, the costliness of individual pole failures, and creosoted pine's comparatively low annual cost, it seems difficult to think of any line not sufficiently important to justify their use.

Life of Creosoted Pine Poles

Whole lines of creosoted pine poles furnished by our supplier 25 and 30 years ago are still in use with practically no replacements, and are obviously good for many years to come. Many estimates have been made of the life to expect, and the Pennsylvania Electric Association, as the result of a study, estimated 35 years. This figure seems conservative with so many International creosoted pine lines now approaching that age and still in good condition. The

oldest lines still standing, and differences in climatic conditions, make it impossible to forecast definitely just what life to expect from the creosoted pine pole.



Section of the Chemistry Laboratory Scientific Control Is Essential

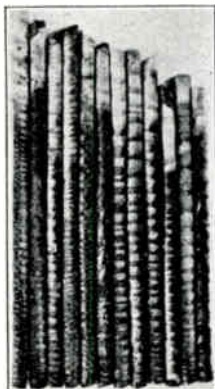
International Creosoted Pine Poles Characteristics of Quality Pine Poles

Continued

Value of Penetration



Uniform Penetration
Is a Criterion of Good
Treatment



Deep Penetration
Means Long Life
For the Poles

While several factors are important, and particularly the grade of preservative is important, no single factor has such bearing on the life and the quality of creosoted pine poles as the depth of creosote penetration and the uniformity of creosote penetration. Untreated wood of any kind commonly used for poles will decay eventually, and the only preventive is to have the penetration of the preservative deep and uniform and of proper grade. This is accomplished only when skilled technicians analyze the creosote and apply the treating process.

Strength

The standard for ultimate fiber stresses for the commonly used pole woods has been developed by the Sectional Committee on Wood Poles under the sponsorship of the Telephone Group, American Standards Association. These ultimate fiber stresses quoted verbatim are tabulated below.

Northern White Cedar.....	3600 lbs. per sq. in.
Western Red Cedar.....	5600 lbs. per sq. in.
Chestnut.....	6000 lbs. per sq. in.
Southern Yellow Pine (Creosoted)....	7400 lbs. per sq. in.

Fire Resistance

Fires that rage across the dry cane fields of Cuba crack insulators, melt steel, and burn untreated wood to ashes, but creosoted pine poles stand the flames. Such is the actual experience. Along almost every railroad right-of-way fire gangs burn the weeds each fall and it is a matter of common record that while untreated posts burn completely, creosoted pine poles are undamaged. Under these severe conditions the creosoted pine pole may take fire and smolder and smoke for a while, but finally the fire smothers itself out, leaving a practically undamaged pole. The action is analogous to a burning oil lamp wherein the wick though it forms the support for the flame is itself consumed very slowly.

Appearance and Cleanliness

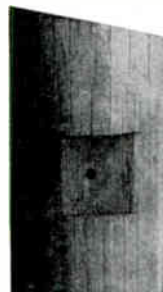
Early in the history of the development of creosoted pine poles some question was raised as to their use on city streets. It was feared that the bleeding of some of the poles might cause trouble if the clothing of pedestrians rubbed against them. No longer are these objections heard either in protest or propaganda. International's care in timber selection, the skill of its production and manufacturing forces, and advances in the science of timber treatment all have contributed to relegate these objections to the background and to give to the business district and the residential street the security and economy of the creosoted pine pole. Graybar-International poles are in use in the business and residential districts of the largest cities of the United States, and in thousands of the smaller ones. The present-day pole is a clean pole. It is smooth and shapely and stands with the appearance of tapered wrought-iron pipe, rather than that of processed trees.

Termites

Termites are attracting more and more attention because of their attacks on poles. Formerly termites lived in the forests, but as the forests become depleted they seek shelter elsewhere and find their way into untreated structural wood. Untreated pole lines have been accused of acting as termite highways by means of which they could fly from pole to pole and then to residence; infesting new areas. It is a fact that termites have now been found in all but three states of the United States.


Creosoted pine poles are practically immune to termite attack. Even though checks in the wood may form, they do not go deep enough to expose untreated interior wood that would afford shelter for these insects.

Improved Roof



The illustration shows a new type of pole roof that many of the utility companies are standardizing upon. It is a one-way roof, cut at an angle of 15°. It is to be recommended. The advantages of this roof are:

1. Reduces Checking

A roof cut in this  manner leaves a minimum of wood along the center line, the natural cleavage point of the pole. This invites checking. The one-way roof eliminates this disadvantage.

2. Provides Better Drainage

As the roof of a pole weathers, the springwood rings of any species being softer than the summerwood, weather faster, causing the summerwood to stand out in ridges. On the two-way roof these ridges form retaining cups for rain water while on the one-way roof they drain.

3. Conserves the Preservative

Evaporation is a surface phenomenon. There is less surface on a one-way than on a two-way roof.

Marked Poles



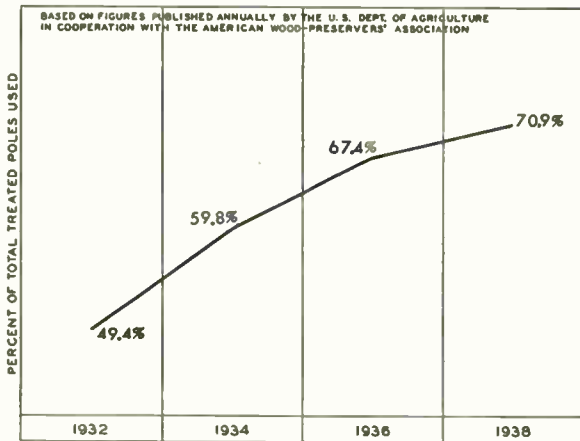
Above is the mark by which Graybar-International poles are identified wherever found. This appears as a date-brand on the side ten feet from the butt of the pole; and is supplemented by an identifying brand on the top and the butt of each pole. These marks are conclusive evidence of our confidence in the quality of the product and the desire to be permanently identified with it.

Beware of unmarked poles. If in a few years they begin to fail, the experience is that it is impossible to tie them definitely to the source of supply. On the other hand when a company consistently uses high grade materials and good preservative treatment which result in long-time dependable service, the company willingly and permanently attaches its name to the product.

International Creosoted Pine Poles
Characteristics of Quality Pine Poles

Continued

THE TREND OF CREOSOTED PINE POLE USAGE IN THE UNITED STATES DURING THE PAST SEVEN YEARS



The use of creosoted pine continues to expand. Utility engineers know from experience that they get fine value for their pole dollar when buying creosoted pine, due to its many advantages. Some of these advantages are longer life, greater strength, lasting strength, less checking, safer to climb, and better appearance.

International Pine for City Use



International Creosoted Pine Poles in Street Lighting Service

Present day International poles are at home on city streets. They are remarkably straight, and with their smooth, black, machine-trimmed surfaces they appear like tapered steel pipes. The type of creosote used and the improved International treating procedure results in the production of poles which are so clean that they can be used in any city location. The fine appearance creates good public acceptance generally, and city fathers are well pleased when an attractive street lighting system can be installed at a surprisingly low price by using Internationals.

Hubbard Pole Dating Nails



No. 1940

Used for indicating the year or pole heights. Any two numerals may be ordered.

Square head, 5/16 inch. Square shank, 1/4 inch. Length, 2 1/2 inches.

Approximate shipping weight per 100 pieces, 5.5 pounds.

No.	Per 100	Stamped No.	No.	Per 100	Stamped No.	No.	Per 100	Stamped No.
1900	\$2.30	Blank	1932	\$2.30	32	1938	\$2.30	38
1915	15		1933	2.30	33	1939	2.30	39
1920	2.30	20	1934	2.30	34	1940	2.30	40
1925	2.30	25	1935	2.30	35	1945	2.30	45
1930	2.30	30	1936	2.30	36	1950	2.30	50
1931	2.30	31	1937	2.30	37	1955	2.30	55

Hubbard Pole Markers



Any marking will be quoted on request. Nos. 6000 and 7006 are specially heat treated to provide driving strength. A heavy rim protects stamping from hammer blows. Consecutively numbered markers are furnished with depressed numerals, all other characters in relief.

No.	Copper		Aluminum	
	2000	7000	6000	7006
Overall Length	2	2	2	2
Diameter Head	1	1 1/4	1	1 1/4
Diameter Shank	.298	.328	.298	.328
Ship. Wt. per 100	8.0	9.5	2.5	3.0

Prices upon application.

Premax Embossed Aluminum Letters and Figures



Made of 99% pure aluminum rolled especially for this purpose, will neither rust, tarnish nor corrode. Plain finish. Being perfectly smooth, letters and figures do not catch or hold dirt.

Standard packing, 100 per carton.

Size Inches	Type	Size Inches	Type
1/2	Roman	2	Roman
3/4	Roman	3	Roman
1	Roman	4	Roman
1 1/2	Roman	6	Roman
1 1/2	Gothic (Figures only)	..	.....

Escutcheon Pins and Eyelets

Size Inches	Description	No. per Pound
1	No. 15 Galvanized Steel	900
1	No. 15 Brass	700
3/4	No. 15 Brass	950
5/8	No. 15 Brass	1100
5/8	No. 15 Cadmium Plated Steel	1200

Smaller or special sizes of pins furnished on request.
 Brass eyelets packed 1000 per box.

Wood Pole Specifications

Values for the ultimate fibre stresses of wood poles were approved
by the American Standards Association November, 1930.

Western Red Cedar.....5,600 lbs. per sq. in.
Northern White Cedar.....3,600 lbs. per sq. in.

This Association adopted the principles given below as a working plan for the development of the specification circumference table in which table Classes 1 to 7 are defined primarily by their circumferences at 6 ft. from the butt and designed to meet the following breaking loads under the conditions imposed in Principle 4. Classes 8, 9 and 10, having no butt requirement, were defined by minimum permitted top circumferences only.

Class.....	1	2	3	4	5	6	7
Lb. Sq. In.	4500	3700	3000	2400	1900	1500	1200

These principles are:

1.—All tables shall be based on standard fibre strengths, for the respective species.

2.—The tables shall specify dimensions in terms of circumference in inches at six feet from the butt, except for classes of "No Butt Requirement," and circumference in inches at the top for poles of the respective lengths and classes.

3.—All poles of the same length and class shall have when new approximately equal strength, or in more precise terms, equal moments of resistance at the ground line.

4.—All poles of different lengths within the same class shall be of suitable size to withstand approximately the same breaking load, assuming that the load is applied two feet from the top and that the break would occur at the ground line.

5.—The smallest class for which butt measurements shall be specified shall have a breaking load under the conditions stated in Principle 4 of approximately 1200 pounds.

6.—The largest class for which butt measurements shall be specified shall have a breaking load under the conditions stated in Principle 4 of approximately 4500 pounds.

7.—The classes from the lowest to the highest shall be arranged in geometric progression, the increments between classes, measured in terms of breaking load, to be approximately 25 per cent.

A.S.A. Specification dimension tables will be found in this catalog under each species of timber we discuss.

The breaking loads of the various classes previously mentioned are translated into terms of moments of resistance at the ground line and the required ground line circumferences were calculated by using beam formula $Mr = 0.00264 \cdot fC^3$.

Mr is moment of resistance
 f is the standard fibre stress
 c is circumference in inches

In all classes and lengths the 6-foot circumference is usually larger than the minimums given in the table. Stating this in another way, the average 6-foot circumference for all lengths in any class is greater than one-half the difference between the class and the minimum of the next higher class. In general, too, the average pole of a given class will be considerably stronger than the rating for the class.

The basic principles upon which A.S.A. Specification tables have been worked out conform to and are consistent with the accepted engineering practice of the larger transmission and communication utilities.

While these simplifications and standardizations on a national scale are of great interest to our customers, we still retain a belief that they cannot replace our individual specialization of method, developed over twenty-five and more years in this particular field.

A.S.A. Circumference Tables

Western Red Cedar Poles

Minimum Circumference at 6 Feet from Butt, Inches

Lgth. of Pole Feet	Ground Line Distance from Butt Feet	CLASS																			
		MINIMUM					TOP CIRCUMFERENCE, INCHES														
		1	2	3	4	5	6	7	8	9	10										
		27	25	23	21	19	17	15	18	15	12										
16	3½	....	....	....	....	23.0	21.5	19.5	*	*	*										
18	3½	....	....	28.5	26.5	24.5	22.5	21.0	*	*	*										
20	4	34.5	32.0	30.0	28.0	25.5	23.5	22.0	*	*	*										
22	4	36.0	33.5	31.5	29.0	27.0	25.0	23.0	*	*	*										
25	5	38.0	35.5	33.0	30.5	28.5	26.0	24.5	*	*	*										
30	5½	41.0	38.5	35.5	33.0	30.5	28.5	26.5	*	*	..										
35	6	43.5	41.0	38.0	35.5	32.5	30.5	28.0	*	..	..								
40	6	46.0	43.5	40.5	37.5	34.5	32.0	..	..	..	..						
45	6½	48.5	45.5	42.5	39.5	36.5	..	..	..	..	..					
50	7	50.5	47.5	44.5	41.0	38.0	..	..	..	..	..					
55	7½	52.5	49.5	46.0	42.5	39.5	..	..	..	..	..					
60	8	54.5	51.0	47.5	44.0	..	..	..	..	..	..				
65	8½	56.0	52.5	49.0	45.5	..	..	..	..	..	..				
70	9	57.5	54.0	50.5	47.0	..	..	..	..	..	..				
75	9½	59.5	55.5	52.0	48.5	..	..	..	..	..	..				
80	10	61.0	57.0	53.5	49.5	..	..	..	..	..	..				
85	10½	62.5	58.5	54.5	..	..	..	..	..	..	..			
90	11	63.5	60.0	56.0	..	..	..	..	..	..	..			

Northern White Cedar Poles

16	3½	....	....	....	....	26.0	24.0	22.0	*	*	*
18	3½	....	....	32.5	30.0	28.0	25.5	23.5	*	*	*
20	4	39.5	37.0	34.0	31.5	29.0	27.0	25.0	*	*	*
22	4	41.0	38.5	36.0	33.0	30.5	28.0	26.0	*	*	*
25	5	43.5	41.0	38.0	35.5	32.5	30.0	28.0	*	*	*
30	5½	47.5	44.5	41.5	38.5	35.5	33.0	30.5	*	*	..
35	6	50.5	47.5	44.0	41.0	38.0	35.0	32.5	*	..	..
40	6	53.5	50.0	46.5	43.5	40.0	37.0	..	..	..	..
45	6½	56.0	52.5	49.0	45.5	42.0	..	..	..	..	..
50	7	58.5	55.0	51.5	47.5	44.0	..	..	..	..	..
55	7½	61.0	57.5	53.5	49.5	46.0	..	..	..	..	..
60	8	63.5	59.5	55.5	51.5	..	..	..	..	..	..

*No butt requirement.

Western Red and Northern White Cedar Poles

The National Pole & Treating Company supplier of Graybar Northern and Western Cedar Poles for more than 25 years has a well earned reputation for furnishing a quality product.

It maintains at the treating plants both a graduate chemist and a graduate timber pathologist who are charged with treating operations, oil analyses, yard sanitation and research, all important essentials in the manufacture of quality poles.

Pole Quality

Poles sold by the Graybar Electric Company conform to nationally accepted standards. Inspections are thorough.

Cedar presents the following qualities:

- | | |
|------------------|------------------|
| 1.—Strength. | 6.—Appearance. |
| 2.—Durability. | 7.—Cleanliness. |
| 3.—Stability. | 8.—Availability. |
| 4.—Light weight. | 9.—Safety. |
| 5.—Adaptability. | |

Processed Cedar Poles

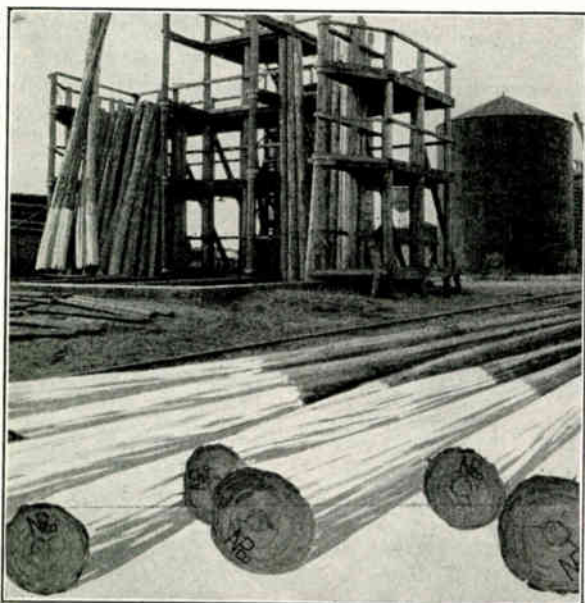
The National Pole & Treating Company maintains at its concentrating yards trained workmen who, for a small extra charge, roof, gable and stain poles to specifications.

Cedar Pole Service

At Minneapolis, and Everett, Washington, cedar poles are concentrated, handled by steam equipment, etc. The stock runs 100,000 poles and more.

Emergency service is always available.

Preservative Treatment for Cedar Poles



One of the Butt Treating Vats Showing View of 130,000 Gallon Reserve Creosote Tank at Minneapolis Plant

Description

Years of scientific observation by engineers of the largest pole users in the United States has demonstrated that the life of cedar poles can be increased by proper open tank butt-treatment. If a satisfactory permeation is obtained in the ground line area, the life of a pole, butt-treated in creosote, will depend upon the mechanical wear of the pole above.

Unless there is a thorough and even permeation, decay will occur in small pockets and in checks through the treated wood.

Proper treatment more than doubles cedar pole value, as the original factor of safety is maintained far beyond the replacement date of the untreated pole.

Incised Treatment

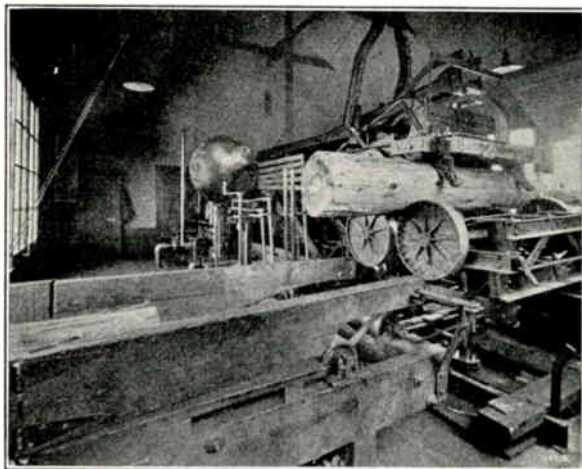
Permex Method Worth More Money

The incised treatment of cedar poles is the logical development of the open-tank process.

The preservative value of creosote has been recognized for many years and, as a treatment for cedar poles, was first applied with a brush. However, it was found that the painting did not get the creosote into the smaller and deeper season checks and cracks, so the poles were dipped into the creosote. This treatment was named AA and was specified as a continuous immersion for fifteen minutes in creosote heated to not less than 212° F., and not more than 230° F. We are still prepared to furnish AA treatment, at some initial price saving if that is in special cases what our customers wish to buy.

The penetration secured by the AA treatment was so shallow and unreliable that the time of treatment was lengthened to a period of from four to six hours in creosote ranging from 212° F. to 230° F. and an immediately succeeding bath in cold creosote for two hours at not more than 110° F. This treatment was called B. (We will on special request quote and furnish B treatment.) By this process a deeper penetration was secured and better results in service were obtained, but it was found that the absorption was irregular. In fact, in seasoned timber of apparently the same condition, some poles absorbed the creosote readily and showed a good penetration while others gave evidence of one surface treatment. Likewise, in the same pole there might be a full sapwood penetration at one point, whereas, in an area but a few inches away there might be little penetration. This uneven absorption naturally led to very uncertain results in service because, after the poles were set in line and were subjected to the various conditions of the seasons with the resultant checking and parting of the fibres, the cracks descending from the upper untreated portion of the pole entered the treated area and where they ran through the shallow treatment they opened up and exposed untreated timber. This permitted the fungi to come in direct contact with the untreated fibres with the resultant infection and rotting of the wood within the pole behind the layer of treated timber. This action proved that any treatment was only as effective as the protection given by the shallowest penetration at any point in the ground line area.

This conclusion necessitated the development of a uniformly deep permeation. Much research and experimental work was done to develop a treating process which would give this result.



Permex Machine with Pole in Position Ready for Puncturing. The Oil Lift that Raises the Lower Carriage into the Head of the Machine and Acts as a Cushion while the Machine is in Operation

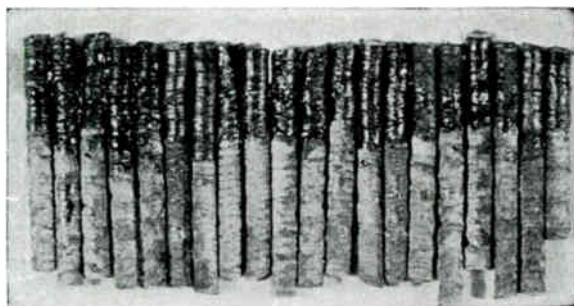
A microscopic study of cedar shows the wood to be very porous. It is made up of long, hollow longitudinal fibres which are spindle shaped cells, arranged in rings from the pith to the bark. These rings of cells form the annular rings. These fibres, besides furnishing support for the tree, provide means for the movement of the sap. Other than the longitudinal fibres are the medullary rays or cells which extend radially from the pith into the bark. There are no passages in the timber other than the cells within these longitudinal fibres and medullary rays and the sap moves from cell to cell through minute pits or pores which connect adjoining cells at their points of contact.

Western Red and Northern White Cedar Poles

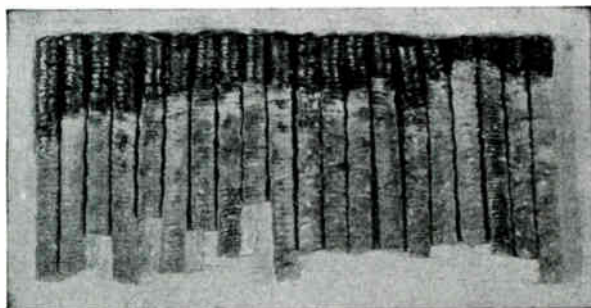
Continued

Although cedar fibre will absorb from 12 per cent to 15 per cent of its oven dry weight in water it will not absorb creosote. Examination under the microscope, of treated cedar discloses creosote within the cells but shows no absorption in the fibre. Consequently, in order to obtain penetration in cedar the movement of creosote must be by means of the openings in the cells and not through the cell fibre.

If the conditions within the timber remained unchanged after being cut, not so much difficulty would be experienced in treating it, but such is not the case. The sap is a watery solution of sugars, starches, resins, etc., and, while the tree is alive, it is constantly in solution and circulating, but, when the timber is cut, peeled and begins to season, some of the water from the sap evaporated and concentrates the sugars and resins which seal up most, if not all, of the minute pits or pores between the adjoining cells.



Average Penetration of Punctured Section, $2\frac{1}{32}$ -Inch,
by our Permex Method



Average Penetration, $1\frac{1}{32}$ -Inch, Unscientific Hand Punctured
Treatment

Incised Method of Treatment for Cedar Poles Permex for Permanency

In our Permex treatment no external pressure is applied. The movement of creosote in the cells is entirely dependent on the action of capillary attraction. This is created by first applying heated creosote ranging from 212° to 223° F. for a continuous period of eight hours, thereby vaporizing the moisture in the sapwood, causing it to expand $1/273$ times its volume for every degree of heat through which it passes and partially expelling it from the timber, and then applying an immediately succeeding bath in cold creosote from 110° to 150° F. The cold treatment contracts the vapors, forms a partial vacuum within the cells and draws the surrounding creosote into the timber. This action creates an appreciable longitudinal creep or movement but does not produce much penetration radially or tangentially.

The loss in strength to a pole through incising has been determined to be in direct proportion to the percentage of the circumference cut away in a horizontal plane and to the depth of the incision.

A scientific machine for incising, therefore, must meet the existing structural conditions in cedar. Ours was designed to cut radial passages through the fibre just to the depth of the required penetration. The incisions cut the fibres and open the ends of the longitudinal cells, providing passage for the movement of creosote so that with the least amount of timber cut in a horizontal plane and with perforations only to the depth of the required penetration, a complete saturation of the fibre is obtained between all incisions.

There are many other incising machines in operation, but they have been designed with no consideration of the structure of cedar with the result that their perforations are made deeper than necessary and may be spaced so closely that the timber is weakened to a great extent, or the sapwood may be so mutilated that it is made no more than a loosely adhering shell. Even though such perforating may produce the required penetration, it is detrimental to the pole, inasmuch as the strength of the pole may be reduced and the sapwood may become a weakened shell which will not withstand the abuses of service.

Some apply incising by means of a studded belt or plate. These belts or plates are about eighteen inches long by six inches wide and contain from seventy-five to one hundred and twenty-five teeth. A mallet is used to pound the teeth into the timber. When the plate is removed, the teeth, which are binding the timber between them, tear the fibres and in some cases loosen the outer sapwood from the heartwood. It is practically impossible to obtain uniform depth of perforation and impregnation by using belts or plates because the body holding the teeth is not flexible and cannot follow the crevices and irregularities of the timber. On the other hand, the teeth of our machine are operated by automatic adjusting cams and inserted into the timber in such a way as to insure a uniform depth of perforation regardless of the uneven surface over which it has to work.

Incised Method Prevents Season Checking at Ground Line

It was thought at first that if the same penetration could be obtained in a cedar pole without perforating as with perforating, that better service results could be obtained. Experience has proven the contrary to be true. If creosote were not volatile, and if its preservative value were of indefinite existence, and if the layer or treated timber around the outside of the pole were never broken, then a creosoted area on the surface, regardless of depth of penetration, would be sufficient to preserve the pole indefinitely. It has been found, however, in green and even in seasoned poles that season checking occurs after the poles are set in line. But in perforated poles, these checks descending from the upper untreated section run out when they reach the treated perforated area. Thus the perforating protects the poles, not only in securing a deeper, more uniform impregnation, but also in providing means of relieving the stresses which cause checking in treated ground line section thereby insuring constant and complete protection against infection of the timber.

Incising Machines at Minnesota Transfer, Minn. and Everett, Washington

Two of these proper incising Permex machines are at the Minneapolis Transfer yard where the National Pole & Treating Company maintains an adequate stock of poles. A third machine is operated by the National Pole & Treating Company at Everett, Washington. These machines handle this work for us.

It is felt that studies by means of an increment borer could well be made by pole users. One large Central Station, whose engineers make such studies independent of the operating department, report informally that our Permex treatment was 30 per cent more efficient than some others.

Specification for Preservative Treatment Cedar Poles

Incised Process—A Guaranteed Penetration

A.—Seasoning

Poles shall be satisfactorily air seasoned under proper sanitary conditions.

B.—Shaving

All inner bark shall be removed from the groundline area of the pole; i.e., that portion of the pole surface terminating one foot above and two feet below the standard groundline indicated in Paragraph F. The amount of wood shaved off in the removal of the inner bark shall be limited to a minimum.

C.—Incising

All poles shall be incised throughout that portion of the pole surface terminating one foot above and two feet below the standard groundline indicated in Paragraph F. The depth of incisions shall be $\frac{1}{2}$ inch. A variation of $\frac{1}{2}$ of an inch in the depth of the incisions shall be allowed. The sapwood shall not be splintered nor loosened by the incising operation. The pattern and spacing of the incisions shall be such as to insure a uniform depth of penetration of the preservative throughout the incised area.

D.—Preservative

The preservative used shall be a distillate of coal-tar or coke-oven tar. It shall comply with the following requirements:

- 1.—It shall not contain more than 3% water.
- 2.—It shall not contain more than .5% of matter insoluble in benzol.
- 3.—The specific gravity of the oil at 38 degrees C. compared with water at 15.5 degrees C. shall not be less than 1.03.
- 4.—The distillate, based on water free oil, shall be within the following limits:
Up to 210 degrees C.—Not more than 5%.
Up to 235 degrees C.—Not more than 25%.
- 5.—The residue above 355 degrees C., if it exceeds 5%, shall have a float test of not more than fifty seconds at 70 degrees C.
- 6.—The oil shall yield not more than 2% of coke residue.
- 7.—The foregoing test shall be made in accordance with the standard methods of the American Wood Preservers' Association.

Treating Operations

E.—Plant Equipment

Treating plants shall be equipped with thermometers to indicate and record accurately the temperature of the preservative during all stages of treatment. The apparatus and chemicals for making necessary analyses and tests shall be available for use by the purchaser or purchaser's representative. All equipment shall be maintained in good working order.

F.—Length of Treated Sections

Poles shall be immersed in the preservative so as to completely cover the groundline area. The depth of immersion shall not exceed by more than two feet the height of treatment given in the table below. The following table shows the relationship between the height of groundline and the height of treatment from the butt end of the pole:

Length Pole Ft.	Height Groundline Ft.	Height Treatment Ft.	Length Pole Ft.	Height Groundline Ft.	Height Treatment Ft.
16	3 $\frac{1}{2}$	4 $\frac{1}{2}$	45	6 $\frac{1}{2}$	7 $\frac{1}{2}$
18	3 $\frac{1}{2}$	4 $\frac{1}{2}$	50	7	8
20	4	5	55	7 $\frac{1}{2}$	8 $\frac{1}{2}$
22	4	5	60	8	9
25	5	6	65	8 $\frac{1}{2}$	9 $\frac{1}{2}$
30	5 $\frac{1}{2}$	6 $\frac{1}{2}$	70	9	10
35	6	7	75	9 $\frac{1}{2}$	10 $\frac{1}{2}$
40	6	7	80	10	11

G.—Manner of Treatment

The treatment shall consist of two immersions; first, the hot immersion; second, the cold or cooling immersion.

Temperature and Duration of Hot Immersion

Poles shall be continuously immersed in the preservative at a temperature of 230 degrees F. plus or minus five degrees for not less than eight (8) hours and such period in addition thereto as will insure impregnation of the sapwood of the incised area with preservative to a depth of $\frac{1}{2}$ inch. In case the sapwood of the incised area is less than $\frac{1}{2}$ inch thick, the impregnation shall be to the full depth of the sapwood.

Temperature and Duration of Cold or Cooling Immersion

The preservative of the hot immersion may be allowed to cool in the treating tank or it may be replaced with cold preservative. When the preservative of the hot immersion is replaced with cold preservative, the exchange must be complete within ten minutes.

When the preservative of the hot immersion is replaced with cold preservative, the poles shall be continuously immersed in the cold preservative for a period of not less than two hours, and the temperature of the preservative for the entire period shall be between 150 degrees F. and the temperature at which solids form in the preservative.

When the preservative of the hot immersion is allowed to cool in the treating tank, the poles shall be continuously immersed in the cooling preservative at least two hours and until the temperature of the preservative has been reduced to a point between 150 degrees F. and the temperature at which solids form in the preservative. The poles shall remain immersed at this temperature for a period of not less than ten minutes.

The height of the preservative in the hot, cold, or cooling immersion shall be maintained at the same levels required in paragraph F.

H.—Impregnation

The results obtained under this specification shall be a uniform impregnation of the incised area with preservative to a depth of $\frac{1}{2}$ inch, except where the thickness of the sapwood is less than $\frac{1}{2}$ inch, in which case the impregnation shall be to the full depth of the sapwood. The depth of the impregnation shall be determined by testing with an increment borer at any point within the incised area. All such holes shall be filled with tight-fitting, thoroughly creosoted plugs.

Adherence to this specification results in not only the stipulated depth of impregnation, but also in a very large volume of preservative in the sapwood of the incised area, thus affording maximum protection against decay. No specific preservative content is mentioned owing to the difficulty of accurately making volume tests in the field. The presence of a large volume of preservative can be determined by observing the borings taken for penetration tests.

I.—Handling

The use of any tools which might puncture the treated wood shall not be applied within one foot above or one foot below the groundline area. See Paragraph B.

J.—Storing

Treated poles held in storage shall be piled upon treated or other non-decaying skids in a clean, well ventilated location free from vegetation and decaying wood. Skids shall be of such strength as to support the poles without producing injurious distortion of any of them, and of such height that no part of any pole shall be less than one foot above the surface of the soil.

American Standard Specifications for Western Red Cedar Poles

O—Introduction

These specifications cover western red cedar poles. The poles are to be classified in accordance with the American Standard Dimensions of Western Red Cedar Poles (05c2—1931), which is part of these specifications.

The length and class of the poles wanted shall be stated in the orders.

Poles furnished under these specifications may be either seasoned or unseasoned. If seasoned poles are specifically called for in an order, the purchaser shall specify the seasoning requirements to be met.

The details of any marking, including length and class marks, to be placed on the poles shall be in accordance with instructions from the purchaser.

Complete detailed instructions shall be given the supplier in all cases where modifications are to be made in these specifications to meet special requirements.

1.—Material Requirements

1.1—Species

All poles shall be of western red cedar (*Thuja plicata*) cut from live timber.

1.2—Prohibited Defects

All poles shall be free from sap rot, cracks, bird holes, plugged holes and injurious checks; from splits, shakes, hollow and decay in the tops; and from damage by marine borers. Nails, spikes, and other metal shall not be present in the poles unless specifically authorized by the purchaser.

1.3—Limited Defects

1.31 DEAD STREAKS.—All poles shall be free from dead streaks that are wider than one-fourth ($\frac{1}{4}$) of the circumference of the pole at the point of measurement.

1.32 DECAY.—Poles shall be free from decay and from visible evidence of the presence of wood-rotting fungi except as permitted under Defective Butts.

1.33 DEFECTIVE BUTTS.—No poles shall have in the butt surface splits or checks extending from one point on the periphery to another point on the periphery and thence upward more than two (2) feet.

No pole shall have hollow heart, the diameter of which exceeds one-third ($\frac{1}{3}$) the butt diameter or the depth of which exceeds two (2) feet. The depth of hollow heart shall be measured from the butt surface.

Rot is permitted in the butt surface provided the aggregate area of rot and hollow heart does not exceed ten (10) per cent of the entire butt surface.

Complete circular shakes may be present on the butt surface provided the diameter of the ring which they follow is not more than one-third ($\frac{1}{3}$) of the diameter of the butt.

1.34 GRAIN.—No pole shall have more than one (1) complete twist of grain in any twenty (20) feet of length.

1.35 INSECT DAMAGE.—All poles shall be free from insect damage, except that pin holes circular in outline, not more than one-sixteenth ($\frac{1}{16}$) of an inch in diameter, and not greater in number than fifteen (15) in an area of four (4) square inches, are permitted.

1.36 KNOTS.—All poles shall be free from unsound knots.

The diameter of any single knot or knot cavity, or the sum of the diameters of all knots and knot cavities in any one (1) foot section, between the top and two (2) feet below the ground line, shall not exceed the limits set up in the following table. Knots and knot cavities one-half ($\frac{1}{2}$) of an inch or under in diameter shall be ignored in applying the limitations for sum of diameters.

Limitations of Knot Size

MAXIMUM SIZES PERMITTED, INCHES

Length of Pole	Diameter of any Single Knot or Knot Cavity	Sum of Diameters of All Knots and Knot Cavities in any One (1) Foot Section
All lengths	3	10

1.37—SCARS.—No part of a scar shall appear on the upper one-fourth ($\frac{1}{4}$) of the length of a pole or within two (2) feet of the ground line.

Sound scars and cat faces are permitted elsewhere provided the width of the scar or cat face at its widest point is not more than one-fifth ($\frac{1}{5}$) of the circumference of the pole at that point, nor in any case more than five (5) inches.

1.38 SHAPE.—Poles shall be free from short crooks.

A pole may have sweep in the section above the ground line subject to the following limitations:

(a) Where sweep is in one (1) plane and (1) direction only, a straight line joining the surface of the pole at the ground line and the edge of the pole at the top shall not be distant from the surface of the pole at any point by an amount greater than one (1) inch for each six (6) feet of length between these points.

(b) Where sweep is in two (2) planes (double sweep) or in two (2) directions in one (1) plane (reverse sweep), a straight line connecting the mid-point at the ground line with the mid-point at the top shall not at any intermediate point pass through the external surface of the pole.

A pole may have offset in the section below ground line, provided that the projection of a straight line joining the mid-point at the top and the mid-point at the ground line does not fall outside the butt surface.

2.—Dimensions

2.1—Length

Poles under fifty (50) feet in length shall not be over three (3) inches shorter or six (6) inches longer than nominal length. Poles fifty (50) feet or over in length shall not be over six (6) inches shorter or twelve (12) inches longer than nominal length.

Length shall be measured between the extreme ends of the pole.

2.2—Circumference

Poles shall be classified in accordance with the American Standard Dimensions of Western Red Cedar Poles. This standard gives the minimum allowable circumference at six (6) feet from the butt (except for Classes 8, 9, and 10), and at the top for each length and class of pole listed, but does not preclude the acceptance of poles having greater circumference at these points of measurement than those shown. The top dimensional requirement shall apply at a point corresponding to the minimum length permitted for the pole.

3.—Manufacturing Requirements

3.1—Bark Removal

Outer bark shall be completely removed from all poles.

3.2—Sawing

All poles shall be neatly sawed at the butt and top along a plane which shall not be out of square with the axis of the pole by more than two (2) inches per foot of diameter of the sawed surface. Beveling at the edge of the sawed butt surface not more than one-twelfth ($\frac{1}{12}$) of the butt diameter in width, or an equivalent area unsymmetrically located, is permitted.

3.3—Shaving

Shaved poles shall not be furnished under these specifications unless specifically called for by the purchaser.

3.4—Trimming

Branch stubs, partially overgrown knots, and completely overgrown knots rising more than one (1) inch above the pole surface shall be trimmed close. Completely overgrown knots less than one (1) inch high need not be trimmed.

4.—Definitions of Terms

The following definitions shall apply in these specifications:

4.1—Fungous Defects

4.11 DECAY.—Decay¹ is disintegration of wood substance due to the action of wood destroying fungi. *Rot* and *Dote* mean the same as *Decay*.

4.12 HOLLOW HEART.—Hollow heart is a cavity in the heart of the pole resulting from decay.

¹NOTE: The terms "sound" and "unsound" are used in these specifications to imply that "sound" fiber is unaffected by decay and that "unsound" fiber is or has been affected by decay.

American Standard Specifications for Western Red Cedar Poles

Continued

4.—Definitions of Terms—Continued

4.34 SCARS.—Scars or cat faces are depressions in the surface of the pole, generally elliptical in shape, resulting from wounds where healing has not re-established the normal cross section of the pole.

4.35 SHAKES.—Shakes are separations of the wood, generally parallel with the annual rings.

4.36 SPLITS.—Splits are separations between the fibers of the wood extending from surface to surface through the pole.

4.2—Insect Defects

4.21 INSECT DAMAGE.—Insect damage is the result of boring in the poles by insects or their larvae. Scoring or channeling of the pole surface is not classed as insect damage.

4.3—Timber Defects

4.31 CHECKS.—Checks are lengthwise separations of the wood in a generally radial direction.

4.32 CRACKS.—Cracks are breaks or fractures across the grain of the wood.

4.33 DEAD STREAK.²—A dead streak is any portion of the sapwood in which the life process had ended prior to the cutting of the tree.

²NOTE: A dead streak starts from the butt and differs therein from a wound, such as a cat face or scar, where the growth of new wood shows that life processes are still acting to repair the injured part.

4.4—Shape

4.41 SHORT CROOK.—A short crook is a localized deviation from straightness which, within any section of five (5) feet or less in length, is more than one-half ($\frac{1}{2}$) the mean diameter of the crooked section. (See Diagram 3 of the subsidiary drawing entitled "Measurement of Sweep and Short Crook in Poles.")

4.42 SWEEP.—Sweep is the deviation of a pole from straightness. (See Diagrams 1 and 2 of the subsidiary drawing entitled "Measurement of Sweep and Short Crook in Poles.")

4.5—Miscellaneous

4.51 KNOT DIAMETER.—The diameter of a knot is its diameter on the surface of the pole measured in a direction at right angles to the lengthwise axis of the pole.

4.52 LIVE TIMBER.—Live timber is that cut from a tree which was standing and living at the time of cutting.

5.—Subsidiary Drawing

The following drawing is subsidiary to the text of these specifications:

Measurement of Sweep and Short Crook in Poles.

6.—Subsidiary Standard

The following standard is subsidiary to the text of these specifications:

American Standard Dimensions of Western Red Cedar Poles (05c2—1931).

Official Manufacturing Specifications for Northern White Cedar Poles

16 Feet and Longer

1.—Live Timber

All poles must be manufactured from live, growing cedar timber in territory adjacent to the Great Lakes.

NOTE: The test of live timber is to cut into the sapwood. If the sapwood is white, the timber was alive when cut.

2.—Manufacture

All poles shall be peeled their entire length, knots trimmed close and butt and top sawed square. No poles with chopped or beveled butts will be accepted.

3.—Lengths

The length shall be measured between the extreme ends of the pole. No pole shall be over 3 inches shorter or 6 inches longer than its specified length.

4.—Top Measurements

Designated Size	CIRCUMFERENCE	
	Green & Watersoaked	Seasoned
4-inch top	12½ inches	12 inches
5-inch top	16 inches	15 inches
6-inch top	19½ inches	18½ inches
7-inch top	23 inches	22 inches
8-inch top	25 inches	24 inches

5.—Defects

A—Rot

Decay in the butt within three inches of the surface of the pole shall not exceed one (1) square inch in area.

Butt rot shall not exceed 5% of the area of the butt, which approximates $\frac{1}{5}$ the diameter, in all poles 5-inch top 25 foot long and smaller and shall not exceed 8% of the area of the butt, which approximates $\frac{1}{4}$ the diameter, in all poles six inch top 25 foot long and larger.

Complete circular shakes in the butt may be present provided the area encircled by the shake does not exceed ten (10) per cent of the total butt area.

B—Top

Tops must be sound.

C—Crook

No pole shall have a short crook or bend, a crook or bend in two planes or a reverse curve. The maximum amount of sweep measured between the ground line and the top shall not be in excess of one (1) inch for each five feet of the length of the pole.

D—Knots

All poles shall be free from unsound knots. The diameter of any single knot or knot cavity or the sum of the diameters of all knots and knot cavities in any one foot section between the top of the pole and two feet below the ground line shall not exceed the limits set up in the following table. Knots or knot cavities $\frac{1}{2}$ inch or under in diameter shall be ignored in applying the limitations for sum of diameters. The diameter of a knot is its diameter on the surface of the pole measured in a direction at right angles to the lengthwise axis of the pole.

Limitations of Knot Sizes

Length of Pole	Diameter of any single knot or knot cavity	Max. sizes permitted, inches
		Sum of diameters of all knots and knot cavities in any one-foot section
35 feet and under	2.5 inches	9 inches
40 feet and over	4.5 inches	11 inches

E—Miscellaneous Defects

All poles shall be free from sap rot, bird holes, plugged holes, injurious checks and splits. No poles showing evidence of having been eaten by ants, worms or other insects shall be accepted, except that poles containing surface worm or insect marks below the ground line may be accepted.

F—Cat Faces and Scars

No part of a scar or cat face shall appear on the upper one-fourth ($\frac{1}{4}$) of the length of a pole or within two (2) feet of the ground line. Sound scars and cat faces are permitted elsewhere provided the width of the scar or cat face at its widest point is not more than one-fifth of the circumference of the pole at that point nor in any case more than five (5) inches.

G—Twist

Winding twist permitted unless unsightly and exaggerated except that there shall not be more than one complete twist of grain in any 20 feet of length.

H—Maximum Defects

No poles shall contain both the maximum crook and maximum butt rot.

Table of Shipping Weights for Western Red Cedar Poles

Western Red Cedar Association Specification Size			National Electric Light Association Specification Size			American Standards Association Specification Size								
Top In.	Length Ft.	Wt. Lbs.	Class	Length Ft.	Wt. Lbs.	Class	Length Ft.	Wt. Lbs.	Class	Length Ft.	Wt. Lbs.	Class	Length Ft.	Wt. Lbs.
4	20	100	D	20	235	10	20	100	1	30	1000	2	55	2000
5	20	135	C	20	310	9	20	135	8	35	450	1	55	2300
6	20	190	B	20	405	8	20	180	7	35	470	4	60	1900
7	20	250	A	20	500	7	20	200	6	35	560	3	60	2000
8	20	325	D	25	310	6	20	225	5	35	650	2	60	2200
5	25	200	C	25	405	5	20	300	4	35	750	1	60	2600
6	25	250	B	25	500	4	20	400	3	35	850	4	65	2200
7	25	325	A	25	685	3	20	500	2	35	1000	3	65	2300
8	25	400	D	30	405	2	20	600	1	35	1200	2	65	2500
6	30	325	C	30	500	1	20	700	6	40	700	1	65	3200
7	30	400	B	30	685	10	25	135	5	40	800	4	70	2600
8	30	550	A	30	780	9	25	200	4	40	900	3	70	2700
9	30	650	D	35	540	8	25	225	3	40	1100	2	70	3000
6	35	450	C	35	660	7	25	250	2	40	1300	1	70	3600
7	35	550	B	35	780	6	25	320	1	40	1500	4	75	3000
8	35	650	A	35	960	5	25	400	5	45	1000	3	75	3100
9	35	800	C	40	780	4	25	480	4	45	1150	2	75	3600
7	40	675	B	40	960	3	25	600	3	45	1300	1	75	4200
8	40	800	A	40	1200	2	25	720	2	45	1550	4	80	3500
9	40	1000	B	45	1200	1	25	850	1	45	1800	3	80	3600
8	45	1000	A	45	1440	9	30	250	5	50	1300	2	80	4200
9	45	1200	B	50	1440	8	30	325	4	50	1400	1	80	5000
8	50	1200	A	50	1680	7	30	350	3	50	1550	3	85	4000
9	50	1400	B	55	1680	6	30	420	2	50	1800	2	85	4500
8	55	1400	A	55	1920	5	30	500	1	50	2000	1	85	5500
9	55	1600	B	60	1920	4	30	610	5	55	1600	3	90	4800
8	60	1600	A	60	2220	3	30	730	4	55	1600	2	90	5600
9	60	1850	B	65	2220	2	30	850	3	55	1750	1	90	6600
8	65	1850	A	65	2640									
9	65	2200	B	70	2640									
8	70	2200	A	70	3120									
9	70	2600	B	75	3120									
8	75	2600	A	75	3600									
9	75	3000	B	80	3600									
8	80	3000	A	80	4200									
9	80	3500	B	85	4200									
8	85	3500	A	85	4800									
9	85	4000	B	90	4800									
8	90	4000	..	..	....						

Minimum Weight Required for Carloads

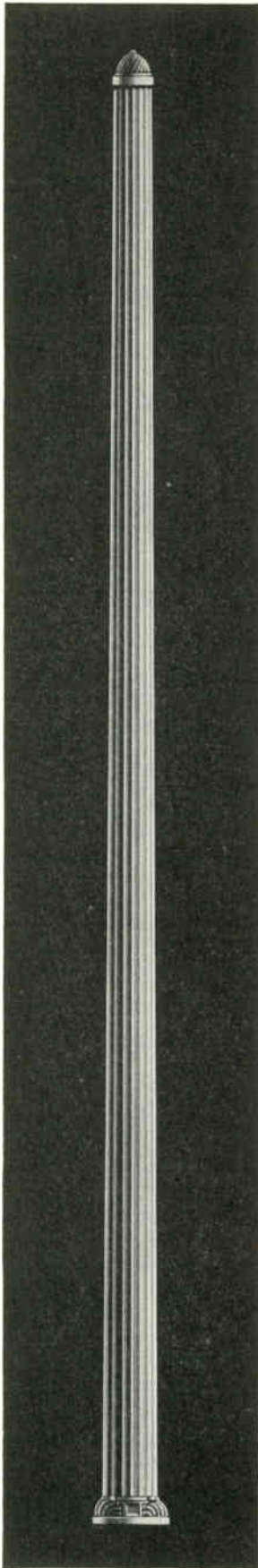
Single Car: On 35-Foot and Shorter Poles..... 40000 Lbs.
 Single Car: On 40-Foot or Mixed Loads, 40-Foot and Shorter..... 50000 Lbs.
 Double Loads: 45-Foot and Longer or 45-Foot and Shorter... 66000 Lbs.
 Triple Loads..... 99000 Lbs.
 25% over minimum required should be added to cover variation in weight.

Table of Shipping Weights for Northern White Cedar Poles

Northern White Cedar Association Specification Size			National Electric Light Association Specification Size			American Standards Association Specification Size								
Top In.	Length Ft.	Wt. Lbs.	Top In.	Length Ft.	Wt. Lbs.	Class	Length Ft.	Wt. Lbs.	Class	Length Ft.	Wt. Lbs.	Class	Length Ft.	Wt. Lbs.
4	16	85	6	30	350	G	20	120	E	35	540	10	16	85
5	16	105	6½	30	350	F	20	160	D	35	540	9	16	105
6	16	135	7	30	450	E	20	160	C	35	540	8	16	135
7	16	165	8	30	600	D	20	230	B	35	720	7	16	135
8	16	200	5	35	375	C	20	230	A	35	1020	6	16	190
4	18	95	5½	35	375	B	20	300	F	40	750	5	16	230
5	18	125	6	35	450	A	20	540	E	40	750	10	18	95
6	18	155	6½	35	450	F	22	240	D	40	750	9	18	125
7	18	200	7	35	600	E	22	240	C	40	750	8	18	155
8	18	325	8	35	850	D	22	300	B	40	1020	7	18	190
4	20	100	6	40	625	C	22	300	A	40	1320	6	18	210
4½	20	100	6½	40	625	B	22	420	E	45	1320	5	18	265
5	20	130	7	40	850	A	22	540	D	45	1320	4	18	300
5½	20	130	8	40	1100	G	25	180	C	45	1080	3	18	420
6	20	190	6	45	900	F	25	240	B	45	1320	10	20	100
7	20	250	7	45	1100	E	25	240	A	45	1620	9	20	130
8	20	350	8	45	1350	D	25	300	E	50	1620	8	20	190
4	25	150	6	50	1150	C	25	300	D	50	1620	7	20	190
5	25	200	7	50	1350	B	25	420	C	50	1380	6	20	230
5½	25	200	8	50	1700	A	25	540	B	50	1620	5	20	300
6	25	250	5	55	1300	F	30	420	A	50	2040	4	20	350
6½	25	250	7	55	1700	E	30	420	E	55	2040	3	20	540
7	25	350	8	55	2200	D	30	420	D	55	2040	2	20	600
8	25	450	7	60	2200	C	30	420	C	55	1560	1	20	720
5	30	275	8	60	2500	B	30	540	B	55	2040	10	22	150
5½	30	275	..	..	....	A	30	720	A	55	2640	9	22	200
						F	35	540	..	..	....	8	22	225
												7	22	225
												6	22	315

Minimum Weight Required for Carloads

Single Cars..... 30000 Lbs. Double Loads (Poles Requiring 2 Cars)..... 60000 Lbs.



Union Monotube Poles For Transmission and Distribution Service

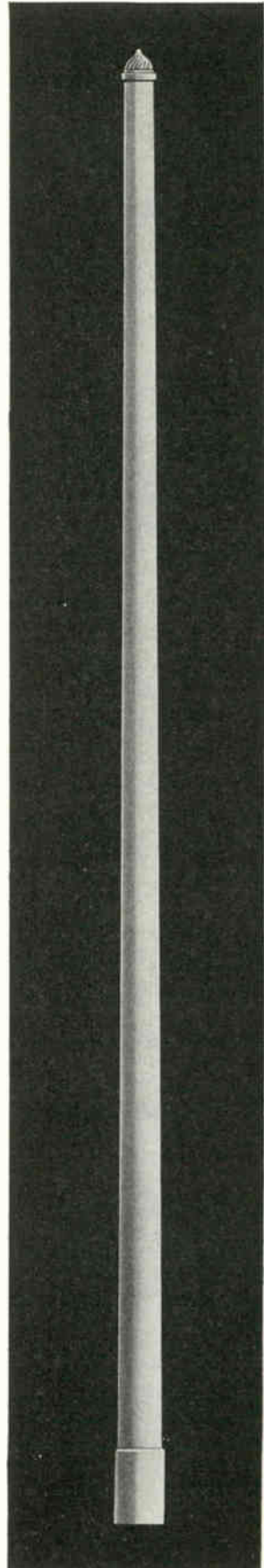
Monotubes are the product of a manufacturer who has specialized in steel pole design and construction for over 34 years, and are designed to be used for the same purposes as wood, structural steel, or sectional tubular poles. They are made of high grade open hearth steel, whose structure is further improved by a patented cold rolling process.

Their chief advantages are: flexibility; one-piece construction; great strength with light weight; economy of installation and maintenance; and attractive appearance.

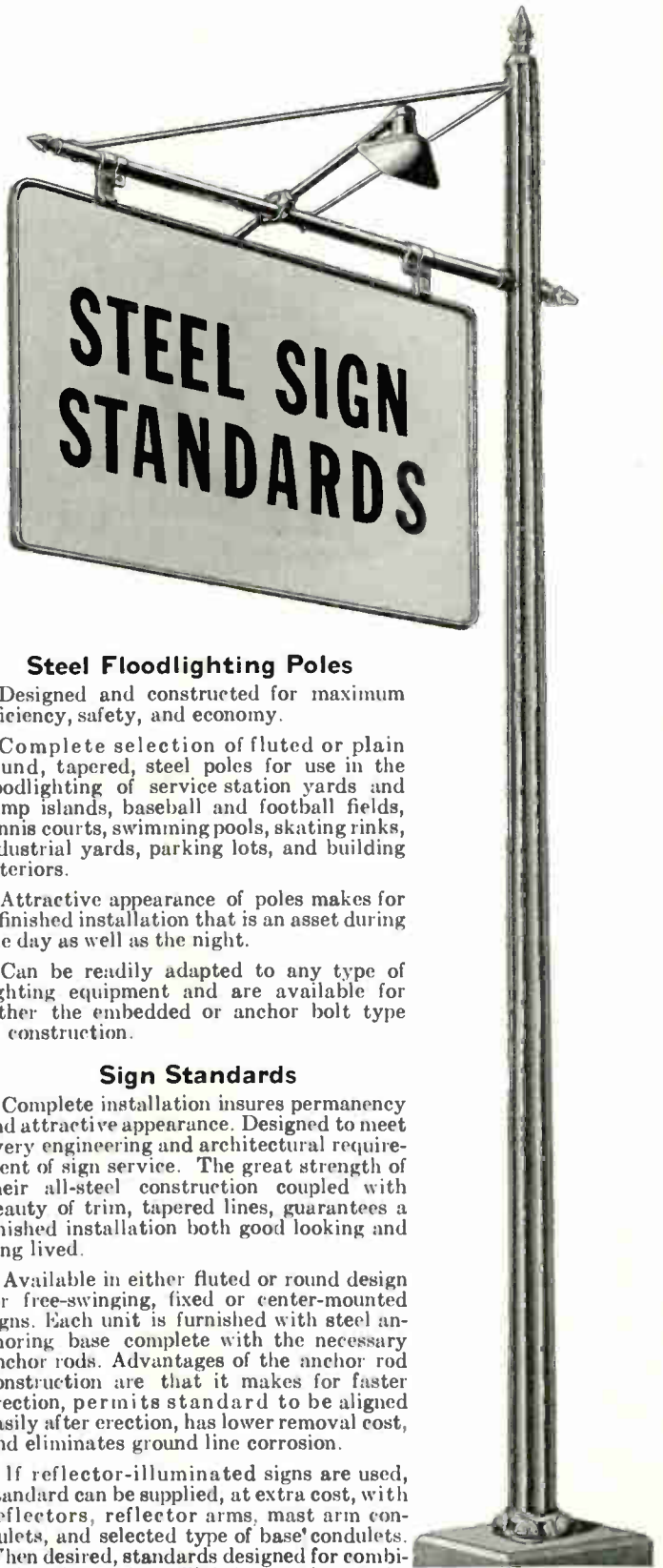
Either of two methods of anchorage can be employed; the pole may be embedded directly in the ground or concrete, or attached to a concrete foundation by means of the anchor rod construction. Advantages of the latter construction are ease of erection and alignment, low cost of replacement or removal, and elimination of ground line corrosion.

Monotube Steel Poles are available in a complete range of sizes and gages to meet every service requirement.

Complete Catalog Available



Union Steel Floodlighting Poles and Sign Standards



Steel Floodlighting Poles

Designed and constructed for maximum efficiency, safety, and economy.

Complete selection of fluted or plain round, tapered, steel poles for use in the floodlighting of service station yards and pump islands, baseball and football fields, tennis courts, swimming pools, skating rinks, industrial yards, parking lots, and building exteriors.

Attractive appearance of poles makes for a finished installation that is an asset during the day as well as the night.

Can be readily adapted to any type of lighting equipment and are available for either the embedded or anchor bolt type of construction.

Sign Standards

Complete installation insures permanency and attractive appearance. Designed to meet every engineering and architectural requirement of sign service. The great strength of their all-steel construction coupled with beauty of trim, tapered lines, guarantees a finished installation both good looking and long lived.

Available in either fluted or round design for free-swinging, fixed or center-mounted signs. Each unit is furnished with steel anchoring base complete with the necessary anchor rods. Advantages of the anchor rod construction are that it makes for faster erection, permits standard to be aligned easily after erection, has lower removal cost, and eliminates ground line corrosion.

If reflector-illuminated signs are used, standard can be supplied, at extra cost, with reflectors, reflector arms, mast arm condulets, and selected type of base' condulets. When desired, standards designed for combination sign and floodlighting service can be furnished.

Complete Catalog Available

Rainier Crossarms

The indispensable characteristics in a crossarm are strength and durability. Strength to carry the dead load of conductor, sleet and wind, and to withstand shock within any combination of these two duties that may be imposed upon the arm in service. Durability is just as necessary as strength because the arm is intended for many years of service and the cost to replace an arm in the line is many times the price of the arm itself.

Lightness in weight is also important. The lighter arms are less costly to transport and install and of course they place a lesser burden on the pole structures.

Rainier fir crossarms meet all of these requirements. They are carefully graded with the strength reducing defects eliminated. They are seasoned to approximately equilibrium moisture content which adds further to the strength. They are seasoned slowly and under such control that from the start to the finish of the seasoning process, the moisture content of the interior is substantially the same as at the surface of the arm. Even microscopic as well as visible checking is held to a minimum, so that the finished arm is sound and solid. It will not readily soak up moisture nor admit decay fungi to the interior of the arm.

The largest factory is at Chehalis, Washington, where the finest dry kilns and kiln control equipment are located. The dry kiln operations are supervised by men who are specialists and experts in the drying of crossarm sizes of Douglas fir. Carload orders can be shipped economically from Chehalis to all parts of the United States.

Minimum Carload Weight—Fir from Pacific Coast Mills, 38,000 pounds. Small cars are scarce and weight of at least

50,000 pounds should be figured on. Cars to contain as high as 90,000 pounds can be had.

For the benefit of customers who desire LCL quantities of crossarms, particularly with drillings of non-standard sizes or specially spaced, and to provide immediate delivery of any quantities in emergencies, factories are maintained at Chicago, Illinois; Kansas City, Missouri; Texarkana, Texas; and Wilmington, North Carolina. These factories are fully provided with manufacturing equipment and are heavily stocked with crossarm lumber which permits prompt attention to the needs of users in all parts of the country. Kiln drying at these factories is not economical due to the cost of fuel, but each point carries a reasonable stock of blanks, kiln dried on the West Coast, for customers who ask for kiln dried arms. All these factories have well designed drying sheds in which the ventilation is controlled. Also they are equipped with the instruments necessary to check the character of drying while the lumber is being conditioned, and in them are observed the same high standards for grading lumber and eliminating inferior pieces, as does the organization at Chehalis.

Southern yellow pine when properly graded is rated equal in strength to Douglas fir. With proper care before treatment, then with pressure treatment under the recognized standards with high grade creosote oil, there can be no question of such arms lasting as long as any other part of the line structure. Pine arms are considerably heavier than fir, but are preferred in a good many localities, due to shorter distances from the source of supply and consequent saving in freight rates. Creosoted yellow pine crossarms are produced at Texarkana, Texas, and Wilmington, North Carolina and we can vouch that these arms will conform to our high standards of quality in every respect.

Rainer Clear Douglas Fir Crossarm Specifications

General

This specification covers clear Douglas fir crossarm in sizes 5x6-inch cross-section and smaller.

Dimensions. All arms furnished shall conform to the design and dimensions specified by the purchaser. Allowable variations shall be within the limits shown on the drawing included herewith. Where allowable variations are not shown approximate conformity to the dimensions given, consistent with good commercial practice, is required.

Seasoning. The average moisture content of any lot of arms shall be not less than 12% nor more than 20% of the oven dry weights. The difference between the moisture content of a section one-half the width and one-half the height of the arm, cut from the center, and the slabs surrounding such section shall not be more than 5%.

Annual Rings. Not less than 8 annual rings per inch on either end of the piece, except that arm having 33 $\frac{1}{3}$ % summerwood may have not less than 6 rings per inch.

Checks, Shakes and Splits. No arm shall contain shakes or splits. On top of arm, no checks more than 6 inches long. No checks anywhere shall measure more than one-third the length of the arm nor more in depth than one-fifth the distance to the opposite face.

Grain. Except in deviations at knots and pitchpockets, arms shall be free from spiral or diagonal grain with a slope of more than 1-inch in 12 inches.

Knots. No knots in clusters. No knot exceeding 1 inch in the middle half and no knot exceeding 1 $\frac{1}{4}$ inches in any part of the arm. No 6-inch section in the middle half shall contain plurality of knots of which the diameters added together exceed 1 inch and no 12-inch section elsewhere shall contain knots of which the diameters added together exceed 1 $\frac{1}{4}$ inches.

No knot exceeding $\frac{1}{2}$ inch shall intersect any pin or bolt hole, and no knot exceeding $\frac{3}{4}$ inch shall be closer than its own diameter to any hole bored for a wood pin.

Loose knots and knot holes that show no evidence of decay shall not be cause for rejection, provided their diameters are within the maximum limits for knots, and will drain water when the arm is in its normal position on the pole.

The size of any knot shall mean its measurement across the smallest diameter.

Pitch Pockets. Shall not exceed $\frac{3}{4}$ inch in depth. No pitch pocket on top of an arm more than 4 inches in length, nor more than 8 inches in length elsewhere.

Sapwood. Not over 25% on any cross-section.

Loose Heart or Boxed Heart. No loose heart nor heart centers.

Rot. No stain, rot or decay.

Wane. No wane within $\frac{1}{4}$ inch of pin or bolt hole or on more than one edge. No wane surface more than $\frac{3}{4}$ inch wide within 12 inches of the middle bolt hole, or 1 $\frac{1}{2}$ inches elsewhere.

Warp. A straight edge laid lengthwise on the concave surface of an arm shall show no offset for the arm greater than $\frac{1}{10}$ -inch per foot of length. No arm shall be twisted nor bent in more than one direction.

Finish. Arms shall be planed smooth on all 4 sides, cut accurately to length, ends coated with transparent but moisture-resistant gloss oil compounds, bored and roofed as ordered.

Rainier Structural Douglas Fir Crossarm Specifications

General. This specification covers Rainier Structural Douglas Fir Crossarms made from dense select structural fir lumber in sizes 5x6-inch cross-section and smaller.

Dimensions. All arms furnished shall conform to the design and dimensions specified by the purchaser. Allowable variations shall be within the limits shown on the drawing included herewith. Where allowable variations are not shown, approximate conformity to the dimensions given, consistent with good commercial practice, is required.

Seasoning. The average moisture content of any lot of untreated arms of cross-section not exceeding 4x5 inches shall be not less than 12% nor more than 20% of the oven dry weights. The difference between the moisture content of a section one-half the width and one-half the height of the arm, cut from the center and the slabs surrounding such section shall not be more than 5%.

Dense Material. All crossarms shall be manufactured from lumber containing not less than six annular rings per inch on either one end or the other of a piece and in addition one-third or more summerwood (the dark portion of the annual ring) on either one end or the other. The contrast in color between summerwood and springwood shall be distinct.

Coarse grained pieces excluded by this rule are accepted as dense if they average one-half or more summerwood.

Checks. On top of arm. No checks more than 6 inches long. No checks anywhere shall measure more than one-third the length of the arm nor more in depth than one-fifth the distance of the opposite face.

Grain. Except in case of deviations at knots and pitch pockets, the grain, meaning the direction of the longitudinal wood fibers, shall throughout the central one-third portion of the arm, not depart from parallelism with the axis of the crossarm by more than 1 inch in 15 inches (approximately 4 degrees).

Knots. No knots in clusters. No knot exceeding 1/2 inch in its smallest diameter intersecting pin or bolt holes. In the middle half of the arm no knot exceeding 3/4 inch in diameter shall be closer than its own diameter to any hole bored for wood pins.

Otherwise any number of knots in any location may appear as follows:

Face.....	inches	3-4	4 1/4-6
Diam. between Center and Brace Bolt Holes .in.		1	1 1/4
Diam. between Brace Bolt Holes and Ends .in.		1 1/4	1 1/2

Loose knots and knot holes that show no evidence of decay shall not be cause for rejection provided their diameters are within maximum limits for knots, and will drain water when the arm is in its normal position on the pole.

Knots shall be measured across smallest dimension.

Pitch Pockets. Shall not exceed 3/4 inch in depth. No pitch pocket on top of an arm more than 4 inches in length, nor more than 8 inches in length elsewhere.

Sapwood. Bright sapwood permitted on not more than one-third the girth.

Loose Heart or Boxed Heart. No arms shall contain loose heart nor the exact pith center of the log.

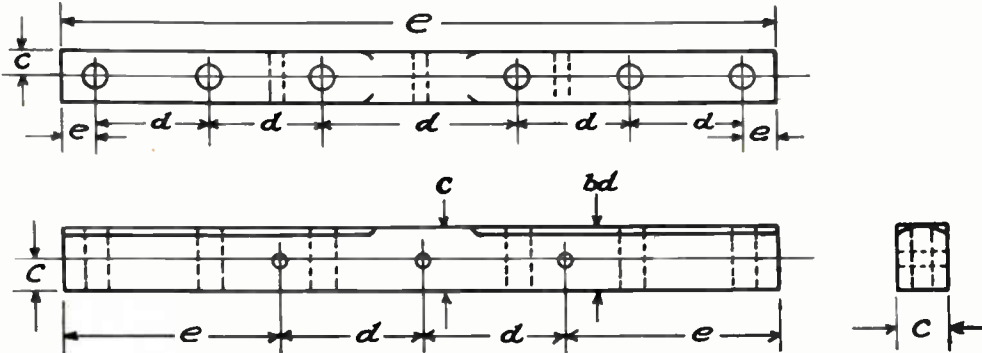
Rot. Rot, dote or red heart will not be permitted.

Wane. Wand shall not be present within 1/4 inch of pin or bolt hole or on more than one edge of an arm. The width of the wane surface shall not exceed 3/4 inch within 12 inches of the middle bolt hole and 1 1/2 inch elsewhere.

Warp. A straight edge laid lengthwise on the concave surface of an arm shall show no offset for the arm greater than one-tenth or an inch per foot of length. No arm shall be twisted nor bent in more than one direction.

Finish. Arms shall be planed smooth on all four sides, cut accurately to length, ends coated with transparent but moisture-resistant gloss oil compound, bored and roofed as ordered. All workmanship of highest commercial quality.

Dimensional Tolerances



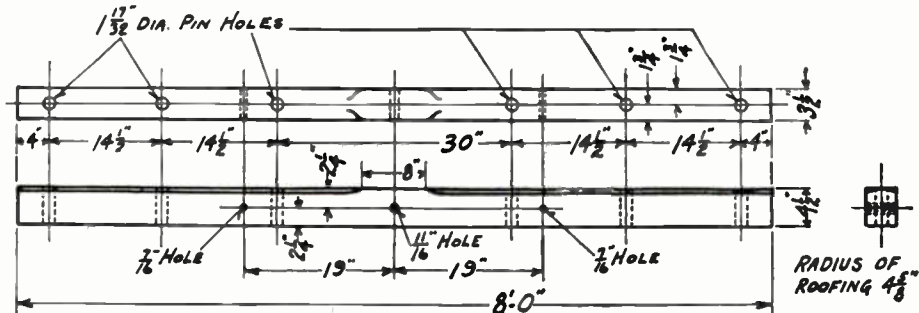
Allowable Variations

Dimensions.....	c	d	e	cd	bd
Over.....	inches 1/16	1/8	1/4	1/16	0
Under.....	inches 1/16	3/8	3/4	3/8	1/8

Size of Hole Unless Otherwise Ordered

For Steel Bolt or Pin					
Size.....	inches 3/8	1/2	5/8	3/4	
Hole.....	inches 7/16	9/16	11/16	13/16	
For Wood Pin					
Size.....	inches 1 1/4	1 1/2	1 3/4		
Hole.....	inches 1 1/2	1 7/8	2 1/8		

Particular Care Should Be Taken in Ordering Arms with Special Borings or Spacing of Holes
Arms Specially Manufactured Are Not Returnable



Written on the Order as Follows: 8 Ft. 3 1/2 x 4 1/2 Fir (6 Pin 1 1/2-In. Diam.). Pin Spacing 30-In. Center Pins (or Simply C), 14 1/2-In. Side Pins (S), 4-In. End Pins (E) - 1/16-In. Brace Bolt Holes (B.B.) 38 Inches Apart - Center Bolt (C.B.) 1 1/8 In. Diameter.
Unless Otherwise Noted, All Arms Will Be Roofed or Rounded on Top to Shed Water

Rainier Wood Crossarms

Electric Light Arms, 3 1/4 x 4 1/4 In.

Cat. No.	Size and Length	PIN HOLES				Center Bolt Hole In.	Brace In.	WEIGHT POUNDS PER ARM			
		Center	SPACINGS, IN.		Size In.			Fir	Yellow Pine Untreated	YELLOW PINE CREOSOTED	
			Sides	Ends				8 Lbs.	12 Lbs.		
1	3 ft. 2 pin	28	....	4	1 17/32	5/8	25	10.62	13.2	15.24	15.93
2	4 ft. 4 pin	16	12	4	1 11/32	5/8	28	14.16	17.6	20.32	21.24
3	5 ft. 4 pin	18	17	4	1 11/32	5/8	28	17.7	22	25.40	26.55
4	6 ft. 4 pin	22	21	4	1 11/32	5/8	32	21.24	26.4	30.48	31.82
5	6 ft. 6 pin	16	12	4	1 11/32	5/8	32	21.24	26.4	30.48	31.82
6	8 ft. 6 pin	18	17 1/2	4	1 11/32	5/8	32	28.32	35.2	40.64	42.48
7	8 ft. 8 pin	16	12	4	1 11/32	5/8	32	28.32	35.2	40.64	42.48
8	8 1/2 ft. 10 pin	16	9 3/4	4	1 11/32	5/8	32	30.09	37.4	43.18	45.14
9	10 ft. 8 pin	17 1/2	15 3/4	4	1 11/32	5/8	42	35.4	44	50.80	53.10
10	10 ft. 10 pin	16	12	4	1 11/32	5/8	42	35.4	44	50.80	53.10
11	10 ft. 12 pin	16	9 5/8	3 7/8	1 11/32	5/8	42	35.4	44	50.80	53.10

R. S. A. (Railway Signal Association) Arms, 3x4 1/4 In.

21	6 ft. 4 pin	20	22	4	9/16	1 11/16	..	19.8	24.6	28.44	29.70
22	8 ft. 6 pin	19	17 1/4	4	9/16	1 11/16	..	26.4	32.8	37.92	39.60
23	10 ft. 8 pin	19	15 1/2	4	9/16	1 11/16	..	33	41	47.40	49.50
24	10 ft. 10 pin	16	12 3/8	2 1/2	9/16	1 11/16	..	33	41	47.40	49.50

Western Union Arms, 3x4 1/4 In.

25	6 ft. 6 pin	20	11 1/2	3	9/16	2 1/32	..	19.8	24.6	28.44	29.70
26	8 ft. 8 pin	21	11 1/2	3	9/16	2 1/32	..	26.4	32.8	37.92	39.60
27	10 ft. 10 pin	22	11 1/2	3	9/16	2 1/32	..	33	41	47.40	49.50

Pony Telephone Arms, 2 3/4 x 3 3/4 In.

31	24 in. 2 pin	17	....	3 1/2	1 9/32	5/8	..	5.4	6.5	7.50	7.84
32	30 in. 2 pin	23	....	3 1/2	1 9/32	5/8	..	6.75	8.125	9.38	9.80
33	36 in. 2 pin	29	....	3 1/2	1 9/32	5/8	25	8.1	9.75	11.25	11.76
34	42 in. 4 pin	16	9 1/2	3 1/2	1 9/32	5/8	28	9.45	11.375	13.13	13.72
35	62 in. 6 pin	16	9 3/4	3 1/2	1 9/32	5/8	28	13.95	16.8	19.38	20.25
36	82 in. 8 pin	16	9 3/4	3 3/4	1 9/32	5/8	28	18.45	22.2	25.63	26.79
37	102 in. 10 pin	16	9 3/4	4	1 9/32	5/8	28	22.95	27.625	31.88	33.72
38	120 in. 12 pin	16	9 5/8	3 7/8	1 9/32	5/8	28	27	32.5	37.50	39.20

N. E. L. A. Arms, 3 1/2 x 4 1/2 In.

41	3 ft. 2 in. 2 pin	30	....	4	1 17/32	1 11/16	28	12 2/3	15.83	19.00	19.79
42	5 ft. 7 in. 4 pin	30	14 1/2	4	1 17/32	1 11/16	38	22 1/2	27.92	33.50	34.90
43	8 ft. 6 pin	30	14 1/2	4	1 17/32	1 11/16	38	32	40	48.00	50.00
44	9 ft. 2 in. 8 pin	30	12	4	1 17/32	1 11/16	38	36 2/3	45.83	55.00	57.29

N. E. L. A. (Light) Arms, 3 1/4 x 4 1/4 In.

51	3 ft. 2 in. 2 pin	30	....	4	1 17/32	1 11/16	28	11.2	13.93	16.09	16.82
52	5 ft. 7 in. 4 pin	30	14 1/2	4	1 17/32	1 11/16	38	19.76	24.57	28.36	29.65
53	8 ft. 6 pin	30	14 1/2	4	1 17/32	1 11/16	38	28.32	35.2	40.64	42.48
54	9 ft. 2 in. 8 pin	30	12	4	1 17/32	1 11/16	38	32.45	40 1/2	46.57	48.68

New England Arms, 3 1/4 x 4 1/4 In.

61	3 ft. 2 pin	30	....	3	1 17/32	1 11/16	33	10.62	13.2	15.24	15.93
62	5 ft. 6 in. 4 pin	30	13 1/2	4 1/2	1 17/32	1 11/16	36	19.47	24.2	27.94	29.20
63	7 ft. 9 in. 6 pin	30	13 1/2	4 1/2	1 17/32	1 11/16	36	27.43	34.1	39.37	41.15
64	10 ft. 8 pin	30	13 1/2	4 1/2	1 17/32	1 11/16	36	35.4	44	50.80	53.10

New England Power Arms, 3 3/4 x 4 3/4 In.

71	3 ft. 2 pin	30	....	3	1 17/32	1 11/16	33	13.98	17	20.79	21.75
72	5 ft. 6 in. 4 pin	30	13 1/2	4 1/2	1 17/32	1 11/16	36	25.63	31.17	37.12	39.88
73	7 ft. 9 in. 6 pin	30	13 1/2	4 1/2	1 17/32	1 11/16	36	36.12	43.92	53.71	56.19
74	10 ft. 8 pin	30	13 1/2	4 1/2	1 17/32	1 11/16	36	46.6	56.67	69.30	72.50

Pacific Arms, 3 1/4 x 4 1/4 In.

81	3 ft. 2 pin	28	....	4	1 17/32	5/8	32	10.62	13.2	15.24	15.93
82	5 ft. 4 pin	28	12	4	1 17/32	5/8	32	17.7	22	25.40	26.55
83	7 ft. 6 pin	28	12	4	1 17/32	5/8	32	24.78	30.8	35.56	37.17
84	9 ft. 8 pin	28	12	4	1 17/32	5/8	42	31.86	39.6	45.72	47.79
85	11 ft. 10 pin	28	12	4	1 17/32	5/8	42	38.94	48.4	55.88	58.41

Any change required from standard spacings, pin holes or bolt holes as here given, must be distinctly specified on the order.

Rainier Special Crossarms

Cat. No.	Size Inches	WEIGHT, POUNDS PER LINEAL FOOT				Cat. No.	Size Inches	WEIGHT, POUNDS PER LINEAL FOOT			
		Fir	Yellow Pine Untreated	YELLOW PINE CREOSOTED				Fir	Yellow Pine Untreated	YELLOW PINE CREOSOTED	
				8 Lbs.	12 Lbs.			8 Lbs.	12 Lbs.		
A	2 3/4 x 3 3/4	2.7	3.25	3.75	3.92	J	3 3/4 x 4 3/4	4.66	5.67	6.93	7.25
B	3 x 3 3/4	2.92	3.6	4.16	4.35	K	3 3/4 x 5	4.72	5.95	7.35	7.65
C	3 x 4	3.11	3.9	4.50	4.70	L	3 3/4 x 5 3/4	6	6.8	8.40	8.72
D	3 x 4 1/4	3.3	4.1	4.74	4.95	M	4 x 5	5.2	6.33	7.80	8.14
E	3 1/4 x 4 1/4	3.54	4.4	5.08	5.31	N	4 1/4 x 5 1/4	6.19	7	8.63	9.00
F	3 1/4 x 4 1/2	3.74	4.7	5.43	5.67	O	4 1/2 x 5 1/2	6.83	7.63	9.41	9.82
G	3 1/2 x 4 1/2	4	5	6	6.25	P	4 x 6	6.6	7.52	9.27	9.67
H	3 1/2 x 4 3/4	4.2	5.3	6.3	6.62	Q	4 3/4 x 5 3/4	7.5	8.5	10.48	10.92
I	3 1/2 x 5	4.43	5.57	6.83	7.14	R	5 x 6	8.2	9.29	11.21	11.95

Chance Wej-Lock Expanding Anchors

Without Rods



This anchor is cone-shaped to develop greater resistance against the undisturbed earth.

Easily installed and expanded. Base plate has a nut retainer. Has a minimum number of parts.

Cast of malleable iron. Made in four types and many sizes to meet all expanding anchor requirements.

No.	Size Anchor and Hole	Size Rod In.	Area Expanded Sq. In.	HOLDING POWER POUNDS			No. In Bdl. per 100	Wt. Lb. per 100
				Sand	Clay	Hard Pan		
8412-W	8" 4-Way	5/8, 3/4	139	12,000	18,000	24,000	3	1548
8414-W	8" 4-Way	1	139	12,000	18,000	24,000	3	1618
10416-W	10" 4-Way	1, 3/4	202	20,000	30,000	40,000	1	2901
633-W	6" 3-Way	1/2, 5/8	70	5000	7000	9000	5	670
8310-W	8" 3-Way	5/8, 3/4	125	10,000	17,000	22,000	3	1422
10316-W	10" 3-Way	3/4, 1	174	16,000	24,000	32,000	1	2725
834-W	8" 3-Way	5/8, 3/4	93	6000	9000	21,000	3	960
836-W	8" 3-Way	5/8, 3/4	110	8000	12,000	16,000	3	1100

Sozol for Wood Preservation

Brush Treatment

Brush treatment of poles consists in applying hot preservative to the ground line surface of a pole with a brush. This method is not in general use among pole dealers, but is used by operating companies for local treatment.

For effective brush treatment the highest boiling point coal tar distillate obtainable is recommended. High boiling creosote oils penetrate more readily and are free from black and sticky tars that do not penetrate but concentrate on the outer wood cells. Graybar Electric Sozol has been developed for this work.

Sozol

Sozol is for brush application for poles and all construction wood. It is a pure high boiling distillate of coal tar, that is, it is a product obtained in a distillation process through the elimination of volatile products of coal tar and this pure coal tar distillate is not adulterated by adding any other substances. It is not a byproduct, that is, the distillation process is primarily for the purpose of securing this particular oil—not for some other distillate of coal tar in which this oil or a modification of it would come off in the distilling process. All creosote wood preserving oils have two faults in a greater or less degree. Either they are so thin and volatile that when applied with a brush or by open tank method, they partially evaporate or leach out and their preservative qualities are thus impaired; or they are adulterated with heavier coal tar oils and these heavier constituents clog up outer cells of the wood and prevent the penetration required for effective treatment.

Sozol is of high specific gravity and greater body and in consequence, is more stable than ordinary pure creosote oils sold for wood preserving. It is not as volatile as these oils; at the same time, it has absolutely no viscous properties which interfere with effective penetration as in the case of mixed oils. In short, it has permanency and so affords the greatest possible continued protection. It is more than a creosote oil, it is a special wood preservative of stability.

Sozol is supplied in drums, barrels and cans.

Chance Never-Creep Anchors

Without Rods



This anchor pulls against solid undisturbed earth; none of the holding area is wasted.

Easy to handle and easy to install. To install, bore the hole, drive rod into hole, and hang plate on rod.

Consists of a rod and a plate. Rod is drop-forged steel with thimble-eye head and pointed Never-Creep knob on lower end. Plate is a certified malleable casting.

Order the rod separately.

No.	Size of Anchor In.	Area Sq. In.	Rod Diam. In.	HOLDING POWER POUNDS			Wt. Lb. per 100
				Sand	Clay	Hard-Pan	
510	5x10	50	1/2	3500	5500	7500	365
615	6x15	90	5/8, 1/2	5500	11,000	16,000	683
110	6x18 5/16	110	5/8, 3/4	7000	13,000	18,000	853
620	6x20	120	3/4, 5/8	8000	14,000	20,000	938
820	8x20	160	3/4, 5/8	12,000	20,000	26,000	1260
825	8x25	200	3/4	16,000	24,000	32,000	1680
830	8x30	240	3/4	18,000	27,000	35,000	2420
835	8x35	280	1, 3/4	20,000	31,000	39,000	3238
1040	10x40	400	1	28,000	40,000	51,000	4761

Chance Steel Expanding Anchors

Without Rods



The Chance Steel Expanding Anchor will withstand the most severe punishment without danger of breakage. It is fool-proof in construction and powerful in pull.

Easily installed in any position. Nut retainer prevents riding up the rod during expansion.

No.	Size Anchor and Hole	Size Rod In.	AREA, IN.		HOLDING POWER POUNDS			Wt. Lb. per 100
			Closed	Exp.	Sand	Clay	Hard-Pan	
64	6" 4-Way	3/4, 5/8, 1/2	28	70	5000	7000	9000	756
745	7" 4-Way	3/4, 5/8, 1/2	38	90	6000	10,000	14,000	1112
846	8" 4-Way	3/4, 1/2	50	113	8000	12,000	16,000	1396
*84	8" 4-Way	3/4, 5/8	50	125	10,000	16,000	22,000	1486
8410	8" 4-Way	5/8, 3/4	50	132	11,500	17,500	23,500	1580
84-1	8" 4-Way	1	50	132	11,500	17,500	23,500	1580
104	10" 4-Way	1, 3/4	78	174	16,000	24,000	32,000	2450
1044	10" 4-Way	1	78	200	20,000	30,000	40,000	2581
124	12" 4-Way	1 1/4, 1	113	303	24,000	32,000	42,000	4240
62	6" 2-Way	5/8, 1/2	28	53	3000	5000	7000	495
826	8" 2-Way	3/4, 5/8	50	100	7000	11,000	15,000	1018

*Can also be supplied for 1-inch rod if requested.

Chance No-Wrench Screw Anchors

With Rods



This anchor has a large triple eye rod which admits a bar for a wrench to use in screwing the anchor down.

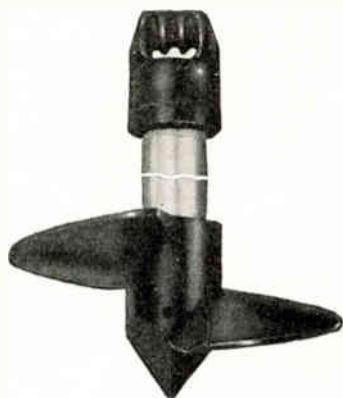
Easy to install. Hub is small and the blade is sharp and thin. Drill point aids dirt displacement and speeds installation.

Has extra holding power because of small hub and wide tapered blade. Drop-forged steel rod and malleable anchor are fastened securely together.

No.	Size Anchor In.	Size Rod In.	Lgth. In.	—HOLDING POWER, POUNDS—				No. in. Bdl.	Wt. Lb. per 100
				Sand	Clay	Hard Pan	Swamp		
4345	4	3/4	54	1000	2000	3000	800	5	805
6346	6	3/4	66	2500	3500	4000	1500	5	1040
716	7	1	66	4000	5000	6000	3000	3	1825
816	8	1	66	6000	7500	8000	4000	3	1900
10146	10	1 1/4	66	8000	9500	10,000	6000	1	3200
10148	10	1 1/4	96	10,000	11,500	12,000	8000	1	4100

Chance Swamp Screw Anchors

Without Pipe



The Chance Swamp Anchor is so constructed that the pipe wedges into the hub and becomes a part of the anchor. A water hole over the cutting edge of the blade makes it possible to get water down the pipe and out the hole to moisten the earth and clean the blade.

The triple eye nut accommodates 1, 2, or 3-guy strands.

No.	Size Anchor In.	Size Pipe In.	—*AVERAGE HOLDING POWER, POUNDS—				No. in. Bdl.	Wt. Lb. per 100
			Sand	Clay	Hard Pan	Swamp		
8125-A	8	1 1/4	6000	7500	8000	4000	2	1300
10150-A	10	1 1/2	8000	9500	10,000	6000	2	1600
122-A	12	2	10,000	11,500	12,000	8000	2	2670
152-A	15	2	13,000	14,500	15,000	11,000	1	3675

*When set 6 feet deep.

Chance Rock Anchors

With Rods



Before Expansion

This anchor eliminates the necessity for carrying lead, concrete, or grouting equipment on the job.

Installed in a small hole bored with hand or mechanical rock drill. Expanded and wedged against the side of the hole by turning the rod.

When strain is applied the wedge becomes tighter.

This anchor does an excellent, safe, rock anchoring job.

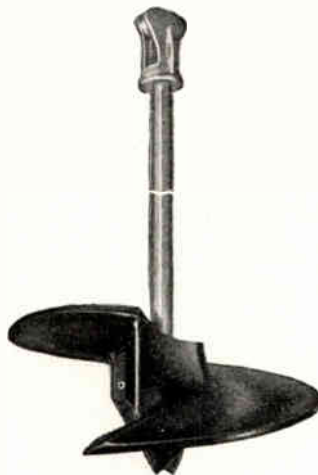


After Expansion

No.	Size Anchor Inches	Rock Drill Size Inches	Size Rod Inches	Length Inches	Weight Pounds per 100
R-212	1 1/2	1 1/2	1/2	12	208
R-220	1 1/4	1 1/2	1/2	20	252
R-315	1 3/4	2	3/4	15	498
R-330	1 3/4	2	3/4	30	678
R-353	1 3/4	2	3/4	53	954

Chance Wrench Type Screw Anchors

With Rods



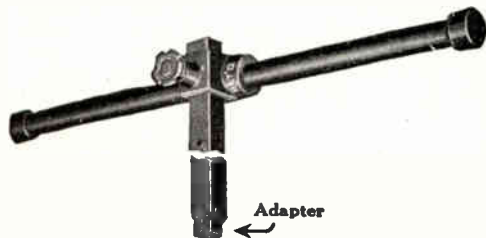
This wrench type anchor has a socket and a square shank combined. A regular screw anchor wrench fits down over the square shank that is built up inside the socket.

There is no danger of splitting the wrench and no need for extra wrench fittings.

Anchor is shipped complete with threaded steel rods and thimble-eye nuts.

No.	Size Anchor In.	Size Rod In.	Lgth. In.	—HOLDING POWER, POUNDS—				No. in. Bdl.	Wt. Lb. per 100
				Sand	Clay	Hard Pan	Swamp		
1126-S	6	1/2	68	2500	3500	4000	1500	5	988
1586-S	6	5/8	68	2500	3500	4000	1500	5	1120
1587-S	7	5/8	69	4000	5500	6000	3000	5	1323
1347-S	7	3/4	69	4000	5500	6000	3000	5	1650
1588-S	8	5/8	70	6000	7500	8000	4000	3	1680
1348-S	8	3/4	70	6000	7500	8000	4000	3	1980
15810-S	10	5/8	70	8000	9500	10,000	6000	3	2170
13410-S	10	3/4	70	8000	9500	10,000	6000	3	2455

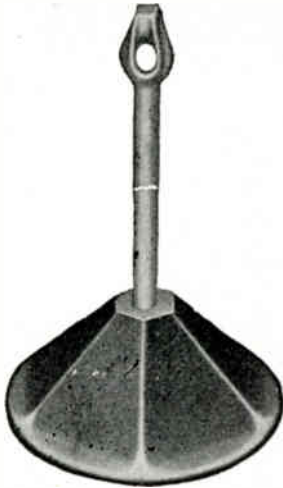
No. 600 Chance Screw Anchor Wrenches



Adapter

This wrench gives ample leverage for turning a screw anchor into the ground. Net weight, 36 pounds.

Chance Pyramid Cone Anchors Without Rods



The Duramel cone anchor is cast of a special fine grained Duramel cast iron with extra toughness and durability. Flat opposing faces and flaring base create a wedging action that greatly increases holding power.

Nut retainer aids installation.

No.	Size Anchor Inches	Area Square Inches	Size Rod Inches	Holding Power Pounds Hard Pan	Weight Pounds per 100
6	6	37	5/8, 1/2	4000	328
8	8	63	3/4, 5/8	6000	647
10	10	104	3/4, 5/8	8000	996
12	12	132	1, 3/4	10,000	1671
16	16	239	1, 3/4	16,000	2856
19	19	336	1 1/4, 1	24,000	4916
23	23	467	1 1/4, 1	32,000	6413

Everstick Cone Anchors



Used wherever rigid type anchor is required. Made of malleable iron with special ribbed construction which adds to its holding power and strength.

Everstick nut housing feature is used to assure a compact, tight connection between rod and anchor.

HOLDING POWER. In setting cone anchor, a sufficient amount of rock, dependent upon soil conditions, must be well tamped on top of anchor before back filled.

No.	6-C	8-C	10-C	12-C	16-C	19-C	23-C
Each							
Size Anchor and Hole	6	8	10	12	16	19	23
Size Rod or Smaller	5/8	3/4	3/4	1	1	1	1 1/4
Weight Anchor	2 1/2	5	9	14	18	40	54

Oshkosh Diggers



No. 2051

The blades are made of special alloy steel. Welding is used for attaching the blades instead of riveting, making a durable joint. The fulcrum members are of heavily constructed, channel-shaped, steel forgings.

There are two pivot points for the blades, one on each side. This gives much stronger leverage and greater durability.

Made in two types, with split handles or with two solid handles. The handles are made of straight grained hard wood, 8 feet long.

Measurement marks are placed on the handles so that the workman can easily determine the exact depth of the hole.

The diameter of the circle circumscribed by the digger blades is 6 inches.

No. 2050, Split Handle Type, Wt., 13 Lbs. each \$8.00
No. 2051, Two Solid Handle Type, Wt., 14 1/2 Lbs. each 8.00

Chance Dual Never-Creep Anchors Without Rods



Designed to meet the demand for an inexpensive anchor to use in machine bored holes and in place of bulky logs, concrete blocks, or improvised scrap iron slugs.

Sturdily constructed and well balanced. Has a maximum load recommendation of from 22,000 pounds for the smallest size to 42,000 pounds for the largest.

May be used with either Never-Creep or threaded rods.

No.	Dimen. In.	Area Sq. In.	Use Size Rod In.	HOLDING POWER POUNDS			Wt. Lb. per 100
				Sand	Clay	Hard Pan	
1110	7 x 16 1/4	110	5/8 & 3/4	8000	12,000	16,000	1450
1125	7 3/4 x 16 3/8	125	5/8 & 3/4	10,000	14,000	18,000	1925
1140	8 x 18 3/16	140	3/4 & 1	12,000	16,000	20,000	2400
1176	10 x 17 7/8	176	3/4 & 1	16,000	24,000	30,000	2750
1322	13 x 25 5/8	322	3/4 & 1	24,000	32,000	40,000	6000

No. 15 Chance Never-Creep Installing Bars



Used for placing the plate in position in the hole; the opposite end is for tamping. Length, 10 feet.

Net weight, 9 pounds.

Chance Expanding and Tamping Bars



Fits over rod. Used to tamp ground firmly around rod.

No.	Length	Net Weight	Regular				Heavy	
			10	12	10H	12H	21	28
	feet	pounds	10	12	10	12	25 1/2	33 1/2

No. 16 Chance Never-Creep Mauls



Used especially for driving Never-Creep Rods. Has two wood faces or two lead faces, and two iron faces.

Net weight, 12 pounds.

Chance Heavy Telegraph Augers



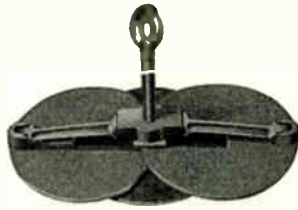
With quick action dumping mechanism and telescoping handle.

No.	Diameter of Holes Bored	Net Weight	812	610
	inches	pounds	8-12 3/4	5 3/4-7 3/4
			28	26

Everstick Expanding Anchors
For All Types of Pole Line Construction
2-Way Anchors



Open



Closed

Sturdy anchor, easy to install.

No.	Each	Anchor Size Rod and Hole		Area Expanded Sq. In.	Wt. Anchor Lb.	HOLDING POWER, POUNDS		
		Smaller In.	or Larger In.			Sand	Clay	Hardpan
52	5	1/2	40	5	2000	3000	5000
62	6	5/8	55	7	3000	5000	7000
82	8	3/4	100	10 1/2	6000	11000	16000

3-Way Anchors



Open



Closed

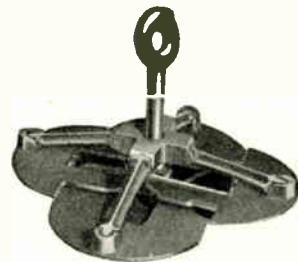
Ideal guy anchor for all around construction and maintenance. Easy to install. Simple to expand. Maximum holding power.

No.	Each	Anchor Size Rod and Hole		Area Expanded Sq. In.	Wt. Anchor Lb.	HOLDING POWER, POUNDS		
		Smaller In.	or Larger In.			Sand	Clay	Hardpan
633	6	5/8	65	7 1/2	5000	8000	11000
834	8	5/8	90	10 1/2	6000	10000	14000
836	8	3/4	110	13	8000	13000	18000
8310	8	3/4	125	15	12000	18000	24000
8312	8	1	125	15	12000	18000	24000
10316	10	1	175	28	18000	32000	45000

4-Way Anchors



Open



Closed

For heavy duty guying. Ease of expansion, super strength, and excess holding power are features of this anchor.

No.	Each	Anchor Size Rod and Hole		Area Expanded Sq. In.	Wt. Anchor Lb.	HOLDING POWER, POUNDS		
		Smaller In.	or Larger In.			Sand	Clay	Hardpan
64	6	5/8	70	9	5000	8000	12000
84-3/4"	8	3/4	125	15 1/2	12000	18000	24000
84-1"	8	1	132	15 1/2	12000	18000	24000
104	10	1	210	28	20000	35000	50000
124	12	1 1/4	310	54	30000	50000	70000

Hubbard Steelwing Anchors

Hot Galvanized



Anchor turns into the ground like a cork-screw and holds against a large area of undisturbed earth. It is easy to install or reclaim and the large thimbleye (E-Z eye) permits the insertion of a bar for leverage. The wing diameter is stamped on the rod (except Nos. 7542 and 7543) just under the eye as a permanent, above-ground record of its holding strength.

The No. 7524 Baby Steelwing, furnished with a 4-inch wing, is designed for permanent light guying or a temporary anchorage for heavier guys.

Nos. 7542 and 7543 are smaller sizes designed for anchoring fences, trees and other similar light work.

No.	Each	E-Z Eye		E.E.I. Eye (N.E.L.A.)		WING		Rod Diam. In.	Overall Lgth. Ft.	Shipping Wt. Lb. per 100
		No.	Per 100	No.	Per 100	Diam. In.	Pitch In.			
7542	7542	71.30	7542	137.90	2 3/4	1 3/8	1 1/2	1 1/2	130
7543	7543	137.90	7543	137.90	2 3/4	1 3/8	1 1/2	2 1/2	200
7524	7524-A		7524-A		4	1 3/4	3/4	4 1/2	800
7526	On Application		7526-A		6	1 1/2	3/4	5 1/2	1100
7527	On Application		7527-A		7	1 3/4	1	5 1/2	1750
7528	On Application		7528-A		8	2	1	5 1/2	2000
7530	On Application		7530-A		10	2 1/2	1 1/4	5 1/2	3200
7550	On Application		7550-A		10	2 1/2	1 1/4	8	4300

† A. T. & T. Co. Std.

‡ Open eye.

Swamp Anchors

Consists of a steel wing and short shaft. Short shaft is threaded to take a 1 1/4-inch standard pipe coupling. The pipe coupling is not included but will be furnished if specified. A special thimbleye nut, threaded to fit the pipe, is provided for the guy attachment.

E-Z Eye No.	Diam. In.	WING Pitch In.	Rod Diam. In.	Overall Lgth. Ft.	Shipping Wt. Lb. per 100
7548	8	2	1.66	9	** 920
7549	10	2 1/2	1.66	9	**1370

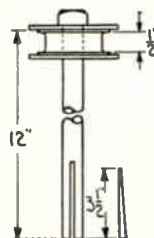
Prices upon application.

¶ 10 inches less pipe.

**Less pipe.

Hubbard Rock Guy Anchors

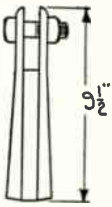
Hot Galvanized



No. 7544

Used in solid rock or in masonry. It is recommended that rock guy anchors be installed at an approximate right angle to line of guy pull.

No. 7544 consists of a one-inch round steel bolt with a 1 1/2-inch square head, 2 round washers and a round thimble. Bottom of bolt is split for a wedge which spreads end of anchor as it is driven against bottom of hole.



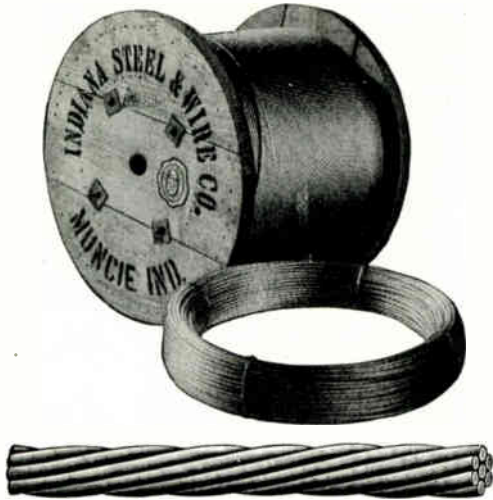
No. 7545

No. 7545 consists of two drop forged, wedge shaped sides, one shim and a 3/4x2 1/2-inch machine bolt. To install, a hole of the proper size is drilled and the two sides are placed in the hole. Shim is driven down between the two sides, expanding them against the sides of hole, and machine bolt is re-assembled. Anchor is then ready for use.

No.	7544	† 7545
Per 100	\$356.60	172.10
Size Hole to Be Drilled	inches 1	1 3/4
Length Overall	inches 12 3/4	9 1/2
Approx. Ship. Wt. per 100 Pieces	pounds 400	520

† A.T.&T. Co. Std. *Western Union Std. ‡ A.R.A. Std.

Crapo Galvanized Steel Strand



Guy and Messenger Strand

7 Wires Twisted into 1 Strand

All wire used in forming a particular size and grade is produced from steel of selected analysis, scientifically processed under laboratory supervision and galvanized by the time-proved Crapo process. Both wire and strand are subjected to laboratory tests for tensile strength, elongation, galvanizing, ductility, and gage to insure high uniform quality in the finished product.

Furnished in the following standard lengths: 250, 500 and 1000-foot coils and 1000, 2500, and 5000-foot reels.

Nom. Diam. Strand In.	Wire Diam. In.	Wt. Per 1000 Ft. Lb.	MINIMUM BREAKING STRENGTH, POUNDS			
			Common Grade (Single & Extra Galv.)	Siemens-Martin Grade (Extra Galv.)	High Strength Grade (Extra Galv.)	Extra High Strength Grade (Extra Galv.)
5/8	.207	813	11600	19100	29600	42400
1/2	.165	517	7400	12100	18800	26900
7/16	.145	399	5700	9350	14500	20800
3/8	.120	273	4250	6950	10800	15400
5/16	.104	205	3200	5350	8000	11200
9/32	.093	164	...	4250	6400	8950
1/4	.080	121	1900	3150	4750	6650
3/16	.062	72.9	1150	1900	2850	3990
5/32	.052	51.3	870	...	...	...
1/8	.041	31.8	540	...	...	...

Specification Grade 7-Wire Strand

Utilities—Western Union—A.T.&T.

Nom. Diam. In.	Wire Diam. In.	Wt. per 1000 Ft. Pounds	Minimum Breaking Strength Pounds
1/2, 25000 Lb.	.165	517	25000
7/16, 16000 Lb.	.145	399	18000
3/8, 10000 Lb.	.120	273	11500
5/16, 6000 Lb.	.109	225	6000
9/32, 4000 Lb.	.093	164	4600
3/16, 2200 Lb.	.065	80.3	2400

Crapo Galvanized Construction Wire

For miscellaneous construction purposes, such as light guys, wrapping stubbed poles, lashing brackets to poles, etc. Galvanized by Crapo process.

In sizes No. 6 B.W.G. to No. 14 B.W.G.

Size B.W.G.	Diam. Inches	Approx. Weight Per Coil Pounds	Approx. Length Per Coil Feet	Breaking Strength Pounds
6	.203	150	1320	1618
8	.165	100	1320	1069
10	.134	100	2050	705
12	.109	100	3150	467
14	.083	50	2700	271

Hubbard-Chance Threaded Anchor Rods

Hot Galvanized



Thimbleye



Twineye

The thimbleye is drop forged. Groove and side walls of eye extend completely around to the top of the rod, thus assuring proper lie of strand in eye. There is no tendency for strand to flatten out under heavy strain, its natural roundness being preserved by support of side walls.

Eyes are forged to such proportions that when rod is given a tensile test to destruction, break always occurs in the rod, never in the eye. Length of thread, 3 1/2 inches.

Sizes 3/4 inch and under have rolled threads; over 3/4 inch, cut threads. Furnished with one nut.

Dia-meter Rod Inches	Length Over All Feet	Thimbleye		Ship. Wt. Lb. per 100	Twineye		Ship. Wt. Lb. per 100
		No.	Per 100		No.	Per 100	
1/2	5	6305	\$90.60	380	...	...	...
1/2	6	6306	101.70	423	...	...	...
1/2	7	6307	112.00	466	...	...	...
5/8	5	6315	127.00	575	6345	\$165.50	570
5/8	6	6316	142.50	680	6346	175.90	674
5/8	7	6317	159.00	795	6347	206.30	778
5/8	8	6318	174.40	900	6348	226.50	882
3/4	6	6326	188.20	975	6356	202.00	985
3/4	7	6327	210.30	1110	6357	224.10	1130
3/4	8	6328	234.80	1280	6358	248.60	1280
3/4	9	6329	256.80	1465	6359	271.60	1460
3/4	10	6331	283.90	1650	6360	297.20	1625
1	7	6337	373.50	1909	6367	394.20	1943
1	8	6338	413.20	2217	6368	433.80	2310
1	9	6339	452.80	2525	6369	472.20	2590
1	10	6340	492.40	2833	6370	515.80	2867

*Western Union Std.

Never-Creep Anchor Rods

Hot Galvanized



Thimbleye (Single Guy)



Twineye (Double Guy)

Dia-meter Rod Inches	Length Over All Feet	Thimbleye		Ship. Wt. Lb. per 100	Twineye		Ship. Wt. Lb. per 100
		No.	Per 100		No.	Per 100	
1/2	5	4305	\$90.60	390	...	...	...
1/2	6	4306	101.70	450	...	...	...
1/2	7	4307	112.00	510	...	...	...
5/8	6	4316	142.50	680	4351	\$175.90	688
5/8	7	4317	159.00	755	4352	206.30	763
5/8	8	4318	174.40	830	...	...	...
3/4	6	4326	188.20	960	4356	202.00	970
3/4	7	4327	210.30	1120	4357	224.10	1130
3/4	8	4328	234.80	1245	4358	248.60	1255
3/4	9	4329	256.80	1350	4359	271.60	1460
3/4	10	4330	283.90	1500	...	...	...
1	7	4337	373.50	2150	4367	394.20	2160
1	8	4338	413.20	2300	4368	433.80	2310
1	10	4340	492.40	2600	4370	515.80	2610

No. 7546 Hubbard Rock Guy Bolts

Hot Galvanized



Used in solid rock formations or in stone or concrete walls. Of 1-inch round steel, 18 inches over all, with standard drop forged oval eye (1 1/2 x 2 inches inside eye). No. 7546, Ship. Wt. 660 Pounds.....per 100 \$143.80

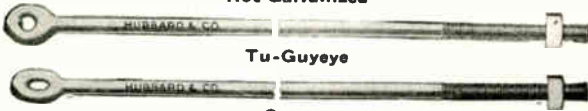
Hubbard Anchor Rods
Hot Galvanized



Standard oval eye anchor rod used to form the dead-man type of anchorage. The eye is drop forged and is stronger than the rod itself. Diameters of 3/4 inch or under have rolled threads, larger diameters have cut threads. All rods threaded 3 1/2 inches.

No.	Per 100	Diam. Rod In.	Overall Lgth. Ft.	Width Eye In.	Length Eye In.	Shipping Wt. Lb. per 100
7405	\$81.90	1/2	5	3/4	1	320
7406	92.10	1/2	6	3/4	1	375
7407	102.70	1/2	7	3/4	1	480
7355	81.90	1/2	5	1 1/4	1 1/2	350
7356	92.00	1/2	6	1 1/4	1 1/2	405
7357	102.80	1/2	7	1 1/4	1 1/2	510
7415	115.10	5/8	5	1 1/2	2	550
7416	130.80	5/8	6	1 1/2	2	650
7417	147.50	5/8	7	1 1/2	2	750
7418	163.10	5/8	8	1 1/2	2	850
7426	174.10	3/4	6	1 1/2	2	910
7427	196.00	3/4	7	1 1/2	2	1060
7428	221.00	3/4	8	1 1/2	2	1220
7429	244.20	3/4	9	1 1/2	2	1360
7430	267.00	3/4	10	1 1/2	2	1520
7438	397.80	1	8	1 1/2	2	2265
7440	478.60	1	10	1 1/2	2	2735
7442	558.50	1	12	1 1/2	2	3200
7444	913.80	1 1/4	10	1 3/4	2 1/4	4500

Hubbard Guyeye Anchor Rods
Hot Galvanized



Designed to provide a smooth curve with an ample radius for protection to the strand at the bend, thereby eliminating the use of a guy thimble. The strength of the Guyeye is greater than that of the rod.

The Tu-Guyeye, for two guys, is forged with the same generous radius as the Guyeye.

Guyeye			Tu-Guyeye			Diam. Rod In.	Overall Lgth. Ft.
No.	Per 100	Ship. Wt. Lb. per 100	No.	Per 100	Ship. Wt. Lb. per 100		
8405	\$90.60	370	.....	.....	.....	1 1/2	5
8406	101.70	440	.....	.....	.....	1 1/2	6
8407	112.00	500	.....	.....	.....	1 1/2	7
8415	127.00	550	8515	\$165.20	570	5/8	5
8416	142.50	654	8516	175.70	674	5/8	6
8417	159.00	758	8517	206.40	778	5/8	7
8418	174.40	862	8518	226.90	882	5/8	8
8426	188.20	960	8526	202.00	1000	3/4	6
8427	210.50	1145	8527	224.10	1195	3/4	7
8428	234.80	1400	8528	248.60	1440	3/4	8
8429	256.80	1460	8529	271.60	1500	3/4	9
8430	285.50	1665	8530	298.20	1705	3/4	10
8438	413.20	2300	8538	433.80	2400	1	8
8439	452.80	2550	8539	474.80	2625	1	9
8440	492.40	2800	8540	515.80	2860	1	10
8442	574.50	3200	8540 1/2	597.70	3275	1	12
.....	.....	.....	8541	982.40	4400	1 1/4	10
.....	.....	.....	8542	1253.70	5230	1 1/4	12

Hubbard Rock Guy Bolts
Hot Galvanized



Used in solid rock formations, in stone or concrete walls. Has split bottom end and wedge that spreads end as bolt is driven against bottom of hole. Of one-inch round steel, 18 inches over all with standard drop forged oval eye (1 1/2 x 2-inch inside eye).

Shipping weight per 100, 665 pounds.
 †No. 7547, Eye Bolt and Wedge..... per 100 \$156.80
 †No. 7547-T, Thimble Bolt and Wedge... per 100 181.80
 †A.T. & T.Co. Std. †E.E.I. (N.E.L.A.) Std. †A.R.A. Std.

Hubbard Gould Clamp Anchor Rods
Hot Galvanized



Designed for dead-man anchoring. Combines a rod, clamp and thimble in one article. Clamp body and snubbing post are drop forged and develop the full strength of the rod.

Diameters 3/4 inch and under have rolled threads, larger diameters have cut threads. All rods threaded 3 1/2 inches.

Clamp: width, 2 inches; length, 6 inches; height, 2 1/8 inches.

No.	Per 100	Diam. Rod In.	Lgth. to Ctr. of Sheave Ft.	Shipping Wt. Lb. per 100
6405	\$235.90	1/2	5	810
6406	250.90	1/2	6	860
6407	266.90	1/2	7	910
6408	281.90	1/2	8	960
6415	276.30	5/8	5	900
6416	299.20	5/8	6	1000
6417	321.80	5/8	7	1100
6418	344.90	5/8	8	1200
6426	360.80	3/4	6	1330
6427	391.40	3/4	7	1465
6428	422.40	3/4	8	1635
6429	452.60	3/4	9	1766
6430	483.70	3/4	10	1935

Hubbard Steel Ground Rods
Hot Galvanized
With Copper Wire

The wired rod has a length of No. 12 gage copper wire bonded firmly to upper end with five inches free for making ground wire connection.

All possibility of wire stripping loose is eliminated by the top turn being looped under itself, relieving the bond from carrying strain concentrated at that point.

No.	Per 100	Diameter Inches	Length Feet	Shipping Wt. Lb. per 100
†9505	\$81.60	1/2	5	365
9506	92.30	1/2	6	418
9516	129.90	5/8	6	660
9538	447.90	1	8	2420

†A. T. & T. Co. Std.

Without Copper Wire

Ground rod without wire has a hole at the upper end for attaching ground wire. Hole is located 1 inch from the upper end of rod.

No.	Per 100	Diameter Inches	Hole Inches	Length Feet	Shipping Wt. Lb. per 100
9555	\$39.50	3/8	1/8	5	203
9556	46.00	3/8	1/8	6	245
9565	62.40	1/2	5/32	5	346
9566	73.40	1/2	5/32	6	415
9567	84.10	1/2	5/32	7	494
9576	108.20	5/8	3/16	6	650
9577	124.70	5/8	3/16	7	750
9578	141.60	5/8	3/16	8	850

Hubbard Drive Head Steel Ground Rods
Hot Galvanized



Provides a rod and clamp combination. The head receives the full hammer blow on the heavy rounded crown which prevents the clamp fitting from injury or distortion even under the hardest blows. The entire top of the rod is tinned.

Ground wires are solidly and permanently clamped under the head of the non-ferrous, oval neck clamp bolt.

No.	Per 100	Diameter Inches	Length Feet	Shipping Wt. Lb. per 100
5855	\$138.40	5/8	5	640
5856	155.20	5/8	6	745
5857	172.00	5/8	7	850
5858	188.70	5/8	8	955
5859	205.50	5/8	9	1060
5860	222.30	5/8	10	1165
5866	266.20	3/4	6	1040
5867	293.50	3/4	7	1190
5868	320.90	3/4	8	1340
5869	348.30	3/4	9	1490
5870	375.70	3/4	10	1640
5872	430.30	3/4	12	1940

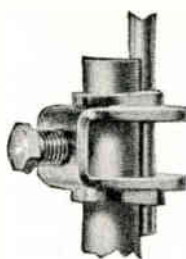
Hubbard-Copperweld Ground Rods



Hubbard-Copperweld Ground Rod offers the permanence of copper, because of the molten-welded, rust-proof, copper exterior. Can be driven quickly, without bending, as the steel core of the rod makes it extremely rigid. The dependability of protective ground is insured by the use of the rod even though installed out of sight where periodic inspection is impractical.

No.	Diam. In.	Length Feet	Approx. Shipping Wt. Lb. 100 Pcs.	No.	Diam. In.	Length Feet	Approx. Shipping Wt. Lb. 100 Pcs.
9415	3/8	5	200	9447	3/4	7	1085
9416	3/8	6	240	9448	3/4	8	1240
9387	3/8	7	280	9449	3/4	9	1395
9388	3/8	8	320	9450	3/4	10	1550
9425	1/2	5	340	9451	3/4	11	1705
9426	1/2	6	410	9452	3/4	12	1860
9427	1/2	7	480	9453	3/4	13	2015
9428	1/2	8	550	9454	3/4	14	2170
9429	1/2	9	615	9455	3/4	15	2425
9430	1/2	10	685	9456	3/4	16	2580
9431	1/2	11	755	9457	3/4	17	2735
9432	1/2	12	825	9458	3/4	18	2890
9433	1/2	13	895	9459	3/4	19	3045
9434	1/2	14	965	9460	3/4	20	3100
9434 1/2	1/2	15	1035	9466	1	6	1650
9435	5/8	5	535	9467	1	7	1925
9436	5/8	6	640	9468	1	8	2200
9437	5/8	7	750	9469	1	9	2475
9438	5/8	8	855	9470	1	10	2750
9439	5/8	9	960	9471	1	11	3025
9440	5/8	10	1070	9472	1	12	3300
9441	5/8	11	1180	9473	1	13	3575
9442	5/8	12	1280	9473 1/2	1	14	3850
9443	5/8	13	1390	9474	1	15	4130
9443 1/2	5/8	14	1500	9476	1	16	4405
9444	5/8	15	1605	9477	1	17	4680
9656	5/8	16	1715	9478	1	18	4955
9657	5/8	17	1825	9478 1/2	1	19	5230
9658	5/8	18	1935	9479	1	20	5500
9659	5/8	19	2045	9691	1	25	6875
9660	5/8	20	2155	9693	1	30	8250
9445	3/4	5	775	9695	1	35	9625
9446	3/4	6	930	9697	1	40	11000

Reliable Ground Rod Clamps



Supplied with 1/16 inch hex head screw. At 200-225 inch pounds, corners become rounded and prevent additional tightening. At this torsion, clamp is applying about three times pressure that can be applied with other clamps.

Made of Everdur bronze 97% copper, tough corrosion resisting, for copper and copperweld rods.

Made of steel, hot galvanized and electro-tinned for steel rods.

Coating minimizes corrosion and galvanic action.

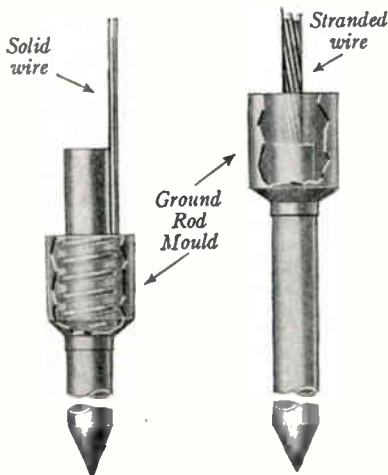
No.	Material	Rod Size In.	Ground Wire Size B&S Gage	Ship. Wt. Lb. Per 100
E48	Everdur	3/8 or 1/2	1 to 14	10
S48	Steel	3/8 or 1/2	4 to 14	10
E58	Everdur	1/2 or 5/8	3/0 to 8	16
S58	Steel	1/2 or 5/8	1/0 to 14	16
E68	Everdur	5/8 or 3/4	3/0 to 8	18 1/2
S68	Steel	5/8 or 3/4	1/0 to 14	18 1/2

Everdur clamps supplied with hollow head set screws when specified.

One wrench included with each 50 clamps or less.

Prices upon application.

Peirce Ground Rod Moulds



Used for making cast soldered connections on ground rods.

Drawn from sheet brass and tinned for easy soldering. The collar fits snugly to the rod preventing leakage.

Moulds must be placed on the rod before driving except when ground rod driver is used.

No.	9480	9481	9482	9483	9485
Per 100	\$176.00	193.00	209.90	226.90	260.80
Diam. Ground Rod.....in.	3/8	1/2	5/8	3/4	1
Diam. Top of Mould.....in.	15/16	1 1/16	1 3/16	1 5/16	1 7/16
Shipping Weight Per 100.....lb.	3.00	3.25	3.50	3.75	4.00

Hubbard-Copperweld Alarm Box Grounders

The alarm-box grounder takes the place of the conduit and grounding wire previously used for connecting police and fire alarm boxes to ground. It makes a neat installation, which is quickly and easily installed, and will last a lifetime. Consists of a 3/8-inch Copperweld rod with a bushing and a stranded copper lead wire for attachment to the alarm-box and internal mechanism.

The adapter type is for use on boxes with unthreaded holes. Copperweld staples for attachment to pole are also included. At bottom, it is connected to a 1/2-inch ground rod with special clamp No. 9492 or No. 9592, and to a 1/2-inch rod with

No. 9335	9235	9236	9237
Adapter Type No.	9235	9236	9237
Bushing Type No.	9335	9336	9337
Diameter Rod.....inches	3/8	3/8	3/8
Length Rod.....feet	5	6	7
Ship. Weight per 100.....pounds	225	265	305

Hubbard-Copperweld Ground Wire Clamps



No. 9492 with Safety Set Screw

The great strength and high elastic limit of this non-ferrous clamp enables it to maintain permanently low-resistance grounding connections.

Accommodates solid or stranded ground wires, and is furnished either with safety set screw or square head set screw.



No. 9592 with Square Head Bolt

Safety Screw Type No.	Sq. Hd. Bolt Type No.	Rod Diam. In.	Wire Size	Approx. Shipping Wt. Lb. 100 Pcs.
9490	9590	3/8	6 to 12 A.W.G. Solid	25
9491	9591	1/2	4 to 10 A.W.G. Solid	30
9492	9592	5/8	3/8-In. Strand to 8 A.W.G. Solid	55
9493	9593	3/4	3/8-In. Strand to 8 A.W.G. Solid	75
9495	9595	1	4/0 Strand to 4 A.W.G. Solid	90
9496	9591A	1 1/4	Pipe 4/0 Strand to 4 A.W.G. Solid	120
			For Alarm Grounders on 1/2-In. Rods	55

Hubbard Ground Pipes
Hot Galvanized



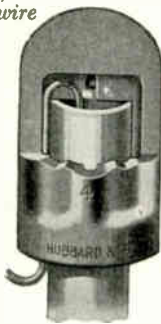
The ground wire connection is made by sweating in the wire. For this purpose, a wooden plug is furnished, 6 inches below the top of the pipe. The ground wire is inserted to the plug and molten solder poured around it, making a highly efficient and permanent mechanical and electrical contact.

Made of high grade steel pipe, forged solid at the point and carefully galvanized inside and out.

No.	9500	9502
Per 100	\$399.90	1067.70
Nominal Size of Pipe.....inches	¾	2½
Actual O.D. Pipe.....inches	1.050	2.875
Length.....feet	8	6
Ship. Wt. per 100.....pounds	880	3500

Hubbard Drive Caps
Hot Galvanized

Grooves accommodate Nos. 2, 4, 6, and 8 ground wire



No. 9530

Number designates size of ground wire for each groove



No. 9540

Nos. 9530 and 9531 are designed to drive over the top of pipe ground rods in such a way that the ground wire is wedged between pipe and cap making a permanent mechanical and electrical contact. Grooves are provided to fit Nos. 2, 4, 6, and 8 wire. Each groove has its wire size stamped on the outside of cap. Wire is gripped solidly over an area 2 inches long, with sufficient clearance so that it will not be sheared off or broken. Used on ¾ or 1-inch standard unthreaded pipe.

Nos. 9540, 9541, and 9542 employ the soldered connection. Driving spreads the pipe establishing a permanent, tight contact. Ground wires are "sweat in" the cap.

Made of certified malleable iron, heavily galvanized.

No.	TYPE OF GROUND WIRE CONNECTION				
	FRICTION		SOLDER		
No.	9530	9531	9540	9541	9542
Per 100	On App.		\$169.80	249.00	340.60
Nominal Size Pipe...in.	¾	1	¾	1	1¼
Ship. Wt. per 100...lb.	175	225	111	131	160

Hubbard Drive Points
Hot Galvanized



No. 9550



Drive point is used to close bottom of pipe; forms a driving point.

Made of certified malleable iron, heavily galvanized.

No.	9550	9551	9552
Per 100	\$72.50	90.50	113.40
Nominal Size Pipe.....inches	¾	1	1¼
Ship. Wt. per 100.....pounds	40	70	127

Hubbard Machine and Crossarm Bolts
Hot Galvanized



Nuts are included; washers must be ordered separately.

¾-Inch Diameter					½-Inch Diameter				
No.	Per 100	Lgth. In.	Thrd. In.	Ship. Wt. Lb. per 100	No.	Per 100	Lgth. In.	Thrd. In.	Ship. Wt. Lb. per 100
9601	.....	1	1	8.2	9803½	.....	3½	3½	53
9601¼	.....	1¼	1¼	8.8	9804	.....	4	3	57
9601½	.....	1½	1½	9.9	9805	.....	5	3	67
9602	.....	2	2	11.4	9806	\$14.90	6	3	80
9602½	.....	2½	2½	12.8	9806½	.....	6½	4	85
*†9603	\$3.30	3	3	13.8	9807	16.10	7	3	90
*9603½	3.80	3½	3	16.8	††9808	17.10	8	4	100
*9604	4.00	4	3	18.4	††9810	19.50	10	4	113
*9604½	4.30	4½	3	18.9	††9812	21.70	12	6	127
†9605	4.70	5	3	20.1	††9814	24.10	14	6	131
*†9605½	5.00	5½	3	22.8	††9816	26.40	16	6	157
9606	5.20	6	3	23.5	††9818	28.80	18	6	180
½-Inch Diameter					¾-Inch Diameter				
9701	.....	1	1	15.0	9901½	.....	1½	1½	67
9701¼	.....	1¼	1¼	17.6	9902	.....	2	2	74
9701½	.....	1½	1½	20.2	9902½	.....	2½	2½	80
9702	.....	2	2	22.7	9903	.....	3	3	89
†9702½	.....	2½	2½	24.6	9903½	.....	3½	3	97
9703	.....	3	3	27.3	9904	.....	4	3	108
9703½	.....	3½	3	29.7	9905	.....	5	3	119
†9704	.....	4	3	33.6	9906	.....	6	3	131
††9704½	\$7.40	4½	3	36.6	9907	.....	7	3	142
†9704¾	7.70	4¾	3	38.5	9908	\$28.10	8	4	165
†9705	7.70	5	3	41.6	9910	31.80	10	4	183
*†9706	8.60	6	3	45.1	9912	35.50	12	6	202
†9707	11.90	7	3	51.9	9914	39.30	14	6	228
9708	12.90	8	4	60.6	9916	43.00	16	6	257
9709	.....	9	4	68.4	9918	46.70	18	6	268
9710	15.10	10	4	76.2	9920	50.60	20	6	303
9712	17.70	12	6	85.8	9922	54.60	22	6	336
9714	19.50	14	6	91.6	9924	58.50	24	6	360
9716	21.70	16	6	106.0	9926	62.30	26	6	382
9718	23.70	18	6	121.0	9928	66.20	28	6	466
9720	25.80	20	6	133.0					
¾-Inch Diameter					¾-Inch Diameter				
9801½	.....	1½	1½	37.0	9801½	.....	1½	1½	37.0
9802	.....	2	2	41.0	9802	.....	2	2	41.0
9802½	.....	2½	2½	45.0	9802½	.....	2½	2½	45.0
9803	.....	3	3	49.0	9803	.....	3	3	49.0

†A.T.&T. Co. Std. *Western Union Std. §E.E.I. (N.E.L.A.) Std. †A.R.A. Std.

Hubbard Double Arming Bolts
Hot Galvanized



Furnished with full length thread and four nuts.

No.	Per 100	Diameter Inches	Length Overall Inches	Shipping Weight, pound per 100
9842	\$22.20	1/2	12	111
9844	23.70	1/2	14	120
9846	25.40	1/2	16	129
9848	27.00	1/2	18	138
9850	28.70	1/2	20	146
9852	30.40	1/2	22	163
9854	32.10	1/2	24	172
†9862	36.00	3/8	12	165
††9864	38.30	3/8	14	194
††9866	40.40	3/8	16	200
††9868	42.60	3/8	18	218
††9870	44.80	3/8	20	235
††9872	47.00	3/8	22	253
†9874	49.20	3/8	24	271
9882	51.80	3/4	12	257
9884	54.80	3/4	14	279
9886	58.20	3/4	16	301
9888	62.00	3/4	18	350
9890	65.60	3/4	20	372
9892	69.20	3/4	22	383
9894	73.00	3/4	24	427

†A.T.&T. Co. Std. *Western Union Std. §E.E.I. (N.E.L.A.) Std. †A.R.A. Std.

Hubbard Eye Bolts

Hot Galvanized

Standard Oval Eye Bolts



Bolts, 8 inches or longer, are furnished with 6 inches of rolled thread. The 6-inch bolts have 4 inches of thread. Eyes are drop-forged and provide greater strength than the shank of the bolt from which they are formed.

Bolts include square nuts but no washers.

No.	Per 100	Diam. Rod Inches	Length Under Eye Inches	Width Inches	Length Eye Inches	Shipping Wt. Per 100
§39936	\$30.60	1/2	6	3/4	1	71
§39938	32.30	1/2	8	3/4	1	83
§39940	34.10	1/2	10	3/4	1	96
§39942	35.80	1/2	12	3/4	1	109
§39944	37.50	1/2	14	3/4	1	123
§39946	39.20	1/2	16	3/4	1	136
§39948	41.00	1/2	18	3/4	1	149
§39950	42.60	1/2	20	3/4	1	151
39937	30.60	1/2	6	1 1/4	1 1/2	82
39939	32.30	1/2	8	1 1/4	1 1/2	94
39941	34.10	1/2	10	1 1/4	1 1/2	107
39943	35.80	1/2	12	1 1/4	1 1/2	120
39945	37.50	1/2	14	1 1/4	1 1/2	134
39947	39.20	1/2	16	1 1/4	1 1/2	147
39949	41.00	1/2	18	1 1/4	1 1/2	160
39951	42.60	1/2	20	1 1/4	1 1/2	162
§39956	43.10	5/8	6	1 1/2	2	131
§39958	45.30	5/8	8	1 1/2	2	145
§39960	47.60	5/8	10	1 1/2	2	169
§39962	49.70	5/8	12	1 1/2	2	179
§39964	51.90	5/8	14	1 1/2	2	192
§39966	54.10	5/8	16	1 1/2	2	205
§39968	56.40	5/8	18	1 1/2	2	229
§39970	58.60	5/8	20	1 1/2	2	242
39972	60.80	5/8	22	1 1/2	2	267
39974	63.00	5/8	24	1 1/2	2	280
39976	64.30	3/4	6	1 1/2	2	195
39978	68.10	3/4	8	1 1/2	2	213
39980	71.90	3/4	10	1 1/2	2	231
39982	75.80	3/4	12	1 1/2	2	248
39984	79.70	3/4	14	1 1/2	2	277
39986	83.60	3/4	16	1 1/2	2	308
39988	87.70	3/4	18	1 1/2	2	345
39990	91.60	3/4	20	1 1/2	2	374
39992	95.60	3/4	22	1 1/2	2	404
39994	99.50	3/4	24	1 1/2	2	434

§E.E.I. (N.E.L.A.) Std.

Double Arming Eye Bolts

Furnished with three nuts and roll-threaded to 1 1/2 inches from the eye. Furnished with the standard E.E.I. (N.E.L.A.) eye.

29786	\$90.70	5/8	16	...	...	253
29788	93.80	5/8	18	...	...	267
29790	96.90	5/8	20	...	...	286
29796	114.10	3/4	16	...	...	360
29798	118.10	3/4	18	...	...	376
29800	122.30	3/4	20	...	...	411

Hubbard Screw Eye Bolts

Hot Galvanized



Supplied with either E.E.I. (N.E.L.A.) type eyes or Thimbleys. Threads are rolled, gimlet point style.

No.	39929	39930	39931	39932
Per 100	\$41.10	49.70	67.40	85.60
Diameter	3/8	1/2	5/8	3/4
Length Under Eye	2 1/2	7	7 3/4	7 3/4
Shipping Weight	20	77	112	183

Hubbard Straight Guyeye Bolts

Hot Galvanized



Designed to provide a smooth curve with ample radius for protection to the strand at bend, eliminating use of guy thimbles. Drop forged and roll-threaded.

No.	Per 100	Diameter Inches	Length Under Eye Inches	Length Thread Inches	Shipping Wt. per 100
†9058	\$54.20	5/8	8	6	132
†9060	56.40	5/8	10	6	154
†9062	58.70	5/8	12	6	176
†9094	60.90	5/8	14	6	198
†9078	79.20	3/4	8	4	204
†9080	83.20	3/4	10	6	229
†9082	87.10	3/4	12	6	255
†9084	91.10	3/4	14	6	280

†A. T. & T. Std.

Hubbard Angle Guyeye Bolts

Hot Galvanized



Designed to provide a smooth curve with ample radius for protection to the strand at bend, eliminating use of guy thimbles. Eyes are forged at a 45° angle to the shank.

Drop forged. One-inch sizes have cut threads; smaller sizes are roll-threaded.

No.	Per 100	Diameter Inches	Length Under Eye Inches	Length Thread Inches	Shipping Wt. per 100
†9150	\$58.80	5/8	8	6	132
†9151	61.00	5/8	10	6	154
†9152	63.30	5/8	12	6	176
†9160	84.90	3/4	8	4	204
†9161	88.90	3/4	10	6	229
†9162	92.80	3/4	12	6	255
†9170	222.80	1	8	6	400
†9171	232.20	1	10	6	448
†9172	241.40	1	12	6	497

†A. T. & T. Standard.

Hubbard Wall Straps

Hot Galvanized



Guyeye Type



Loop Type

Used on communication, signal and power systems for attaching guys or messengers to buildings or walls.

Loop type is attached by two 1/2-inch lag screws or bolts and requires the use of a thimble.

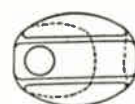
Guyeye type is attached in a similar manner but does not require a thimble, the guyeye providing the necessary radius for attachment without distortion of the strand.

Thickness, 1/4 inch. Diameter holes, 5/16 inch.

No.	Loop		Guyeye	
	8892	8895	8896	8896
Per 100	\$65.30	99.30	132.70	132.70
Overall Length	8 in.	16 1/2	24 3/8	24 3/8
Width	1 1/4 in.	1 1/2	1 1/2	1 1/2
Ship. Wt. Per 100	105 lb.	264	351	351

No. 8913 Hubbard Strand Connectors

Hot Galvanized



Malleable iron strand connector used with two or more guy clamps for joining messenger ends. Non-insulating. Cable groove and hole are sufficiently large for 5/16-inch cable with ample radii to prevent kinking strand. Width groove, 1 inch. Diameter, 5/8 inch.

No. 8913, Ship. Wt. 100 Pounds per 100 \$112.80

Hubbard-Chance Thimbleye Bolts

Hot Galvanized



This bolt saves from three to five feet of strand, eliminates strain plates, guy hooks, lags and nails and leaves the pole surface clear for ground wire or moulding. Guy assemblies can be made up on the ground and mounted on pole afterward.

Drop-forged eyes with an ample radius to prevent strand from being sharply kinked at any one point and to eliminate concentrated strain.

One-inch sizes have cut threads; smaller sizes, roll-threaded.

No.	Per 100	Diameter Inches	Length Under Eye Inches	Length Thread Inches	Shipping Wt. Lb. Per 100
6508	\$54.20	5/8	8	6	132
6510	56.40	5/8	10	6	154
6512	58.70	5/8	12	6	176
6514	60.90	5/8	14	6	198
6515	62.10	5/8	15	6	209
6516	63.20	5/8	16	6	220
6518	65.40	5/8	18	6	242
6608	79.20	3/4	8	6	204
6610	83.20	3/4	10	6	229
6612	87.10	3/4	12	6	255
6614	91.10	3/4	14	6	280
6615	93.20	3/4	15	6	306
6616	95.20	3/4	16	6	319
6618	99.20	3/4	18	6	344
6688	211.40	1	8	6	400
6690	220.30	1	10	6	449
6692	229.50	1	12	6	497
6694	237.90	1	14	6	546
6696	246.10	1	16	6	594
6698	254.90	1	18	6	642

Hubbard-Chance Angle Thimbleye Bolts

Hot Galvanized



This bolt saves from three to five feet of strand, eliminates strain plates, guy hooks, lags and nails and leaves the pole surface clear for ground wire or moulding. Guy assemblies can be made up on the ground and mounted on the pole afterward.

Drop-forged eyes with an ample radius to prevent the strand from being sharply kinked at any one point and to eliminate concentrated strain. Eye is forged at an angle of 45° with the shank of the bolt. A guy or load plate is often used under the eye.

One-inch sizes have cut threads; smaller sizes, roll-threaded.

No.	Per 100	Diameter Inches	Length Under Eye Inches	Length Thread Inches	Shipping Wt. Lb. Per 100
6008	\$58.80	5/8	8	6	132
6010	61.00	5/8	10	6	154
6012	63.30	5/8	12	6	176
6014	65.50	5/8	14	6	198
6015	66.60	5/8	15	6	209
6016	67.70	5/8	16	6	220
6018	70.00	5/8	18	6	242
6108	84.90	3/4	8	6	204
6110	88.90	3/4	10	6	229
6112	92.80	3/4	12	6	255
6114	96.90	3/4	14	6	280
6115	98.90	3/4	15	6	306
6116	100.90	3/4	16	6	319
6118	104.90	3/4	18	6	344
6188	222.80	1	8	6	400
6190	232.20	1	10	6	449
6192	241.40	1	12	6	497
6194	250.70	1	14	6	546
6196	259.50	1	16	6	594
6198	269.00	1	18	6	642

Hubbard Carriage Bolts

Hot Galvanized



Used in attaching braces to cross arms. Furnished with standard heads, shoulders, nuts and rolled threads.

No.	Per 100	Diameter Inches	Length Inches	Length Thread Inches	Approx. Shipping Wt. Lb. 100 Pcs.
9633	\$3.10	3/8	3	1 3/4	14.5
9633 1/2	3.30	3/8	3 1/2	1 3/4	16.5
††9634	3.80	3/8	4	1 3/4	18.3
††9634 1/2	4.10	3/8	4 1/2	1 3/4	20.0
9635	4.30	3/8	5	1 3/4	21.1
9635 1/2	4.80	3/8	5 1/2	1 3/4	22.5
9636	5.00	3/8	6	1 3/4	23.3
9643	5.70	1/2	3	2 1/2	26.7
9643 1/2	6.20	1/2	3 1/2	3	29.2
9644	6.50	1/2	4	3	33.3
9644 1/2	6.90	1/2	4 1/2	3	36.7
9645	7.40	1/2	5	3	38.6
9645 1/2	7.90	1/2	5 1/2	3	41.2
9646	8.40	1/2	6	3	44.0
9647	10.30	1/2	7	3	50.0
9648	11.30	1/2	8	4	59.0
9650	13.70	1/2	10	4	72.0
9652	15.70	1/2	12	6	85.0
9654	17.40	1/2	14	6	99.0
9655	19.30	1/2	16	6	105.0

†A.T.&T. Co. Std. *Western Union Std. §E.E.I. (N.E.L.A.) Std. †A.R.A. Std.

Hubbard Lag Screws

Hot Galvanized



Fetter Drive

Gimlet Point

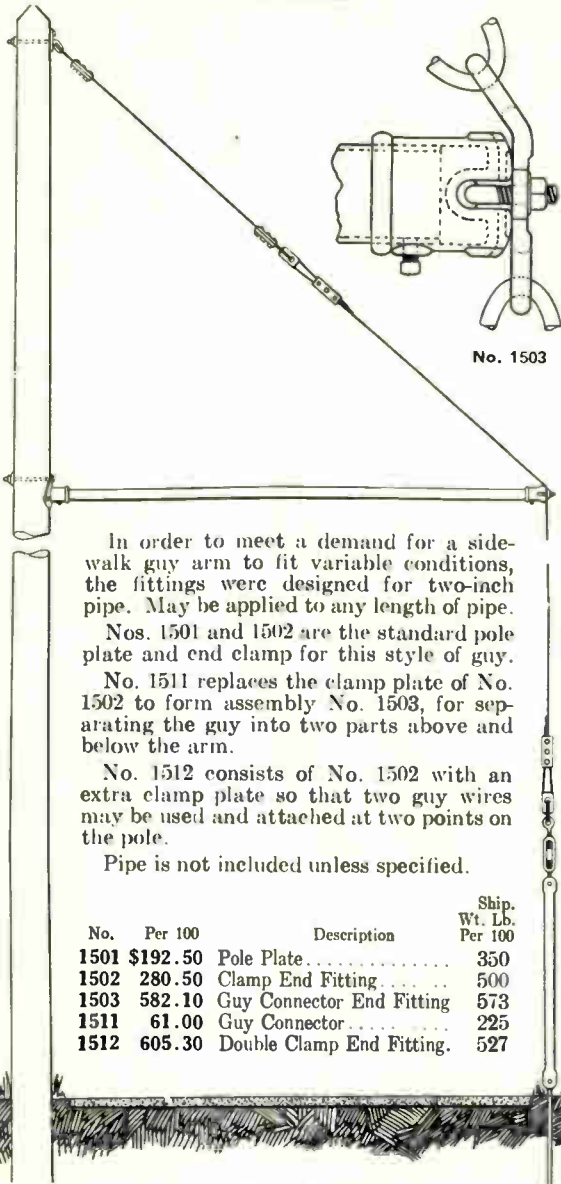
Unless otherwise specified, fetter drive lag screws will be furnished on all orders except for 1/4 and 5/16 inch diameters, which are furnished with gimlet point thread only.

No.	Per 100	Diameter Inches	Length Inches	Length Thread Inches	Approx. Shipping Wt. Lb. 100 Pcs.
9721 1/2	.....	1/4	1 1/2	1 1/8	2.0
9722	\$2.50	1/4	2	1 5/8	3.5
9722 1/2	2.80	1/4	2 1/2	1 3/4	5.0
9723	3.10	1/4	3	2	6.5
9724	3.60	1/4	4	2 1/2	8.0
9732	2.50	5/16	2	1 3/4	5.2
9732 1/2	2.80	5/16	2 1/2	2	6.2
9733	3.10	5/16	3	2 1/4	7.5
9733 1/2	3.60	5/16	3 1/2	2 1/2	9.7
9734	.....	5/16	4	2 1/2	11.9
†9742 1/4	3.40	3/8	2 1/4	2	8.8
*9742 1/2	3.40	3/8	2 1/2	2	9.7
9743	3.70	3/8	3	2	11.0
9743 1/2	4.10	3/8	3 1/2	2 1/2	12.8
†9744	4.50	3/8	4	2 3/8	14.6
9744 1/2	4.70	3/8	4 1/2	3	16.4
9745	5.20	3/8	5	3	16.9
9746	6.00	3/8	6	3	19.9
9752 1/2	5.40	1/2	2 1/2	2	18.4
9753	5.90	1/2	3	2 1/2	20.9
9753 1/2	6.50	1/2	3 1/2	3	23.4
§9754	7.00	1/2	4	2 1/2	26.0
†9754 1/2	7.40	1/2	4 1/2	2 3/8	27.8
9755	7.90	1/2	5	3 1/4	32.1
9755 1/2	8.50	1/2	5 1/2	3	33.9
9756	9.00	1/2	6	3	38.3
†9756 1/2	9.50	1/2	6 1/2	2 3/8	43.2
9757	10.10	1/2	7	3	46.4
9764	10.00	5/8	4	3	42.6
9764 1/2	10.70	5/8	4 1/2	3	46.0
§9765	11.40	5/8	5	3 1/2	50.6
9765 1/2	12.10	5/8	5 1/2	3	55.2
†9766	12.90	5/8	6	2 3/8	60.0
9770	.....	3/4	5	3	74.5
9771	.....	3/4	6	3 1/2	84.9
9772	.....	3/4	7	4	99.4
9773	.....	3/4	8	4 1/2	112.2

†A.T.&T. Co. Std. *Western Union Std. §E.E.I. (N.E.L.A.) Std. †A.R.A. Std.

Peirce Pipe Sidewalk Guy Arm Fittings

Hot Galvanized



In order to meet a demand for a sidewalk guy arm to fit variable conditions, the fittings were designed for two-inch pipe. May be applied to any length of pipe.

Nos. 1501 and 1502 are the standard pole plate and end clamp for this style of guy.

No. 1511 replaces the clamp plate of No. 1502 to form assembly No. 1503, for separating the guy into two parts above and below the arm.

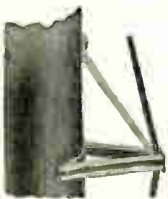
No. 1512 consists of No. 1502 with an extra clamp plate so that two guy wires may be used and attached at two points on the pole.

Pipe is not included unless specified.

No.	Per 100	Description	Ship. Wt. Lb. Per 100
1501	\$192.50	Pole Plate	350
1502	280.50	Clamp End Fitting	500
1503	582.10	Guy Connector End Fitting	573
1511	61.00	Guy Connector	225
1512	605.30	Double Clamp End Fitting	527

Peirce Pole Struts

Hot Galvanized



Cases often arise in overhead construction, especially in cities, where it is impossible to secure guying privileges or where space is insufficient for normal guying. Under such conditions, where the angle is not too great, or the pull not overly strong, the pole can be made self-supporting or hog-guyed by means of pole struts.

Such trussed poles should be set in concrete, deeper than standard, and slack spans used on each side.

Made of heavy steel channel with a broad bearing surface against the pole. May be sprung slightly during installation to fit a variation in pole diameter. Three 1/2-inch lag screws attach them rigidly in position. Two struts are needed for each pole. Braces are 1x1/2x1/8 inch channels for all sizes.

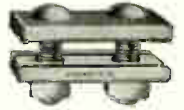
No.	1500	1518	1519
Per 100	\$395.80	580.40	669.60
Exten. from Pole	11 in.	18 in.	24 in.
Channel Horiz. Legs	2x3/16x3/16	2x3/16x3/16	2 1/2x5/8x3/16
Shipping Weight, Per 100 lb.	850	1050	1600

Hubbard Guy Clamps

Hot Galvanized



No. 7461



No. 7402

Hot rolled to a 3/8-inch thickness from steel plates. Clamping principle employed is the straight, parallel groove, smoothly galvanized.

Particular care is exercised to keep clamp sections straight, so that bolts will not be drawn tight on an area which may be warped out of contact with strand with consequent loss of holding power. Accurately spaced grooves and carefully centered holes. Cleanly sheared sections so that groove ends cannot cut or injure strand.

Clamp bolts are made of special steel to prevent elongation and eliminate stripping. Heads are made large to provide maximum clamping area and shoulders trap bolts to prevent turning while tightening.

Sizes with three or more bolts shipped with bolts reversed.

Heavy Type—5/8-Inch Clamp Bolts

No.	Per 100	No. of Bolts	Length Inches	Width Inches	Size Strand Inches	Shipping Wt. Lb. per 100
7460	\$163.50	3	6	2 1/8	3/8 to 5/8	397
†7461	70.40	3	6	1 21/32	3/16 to 1/2	284
7462	45.80	2	4	1 21/32	3/16 to 1/2	186
7464	93.60	4	8	1 21/32	3/16 to 1/2	388

Medium Type—1/2-Inch Clamp Bolts

7447	\$26.00	1	1 7/16	1 9/16	1/4 to 3/16	64
*7448	33.50	2	3 3/8	1 9/16	1/4 to 3/16	138
7449	47.30	3	4	1 9/16	1/4 to 3/16	188
*7450	57.70	3	6	1 9/16	1/4 to 3/16	224

Light Type—1/2-Inch Clamp Bolts

7401	\$21.90	1	1 3/4	1 9/32	3/8 to 1/4	48
7402	30.10	2	3 3/4	1 9/32	3/8 to 1/4	106
7403	43.10	3	5 3/4	1 9/32	3/8 to 1/4	160
7404	55.70	4	7 3/4	1 9/32	3/8 to 1/4	210
7445	27.60	1	1 1/4	1 1/4	3/8 to 1/32	30

†A. T. & T. Co. Std. *Western Union Std. §E.E.I. (N.E.L.A.) Std. †A.R.A. Std.

Hubbard Wire Rope Clips

Hot Galvanized

Drop forged from forging steel. The lay of strand fits body of clip perfectly. No sharp projections in contact with strand at any point. High strength U-bolts are made from full sized stock with cut threads and legs of U-bolts so spaced as to give greatest allowable clearance when tightening nuts with wrench. U-bolts with U.S.S. nuts.

No.	Per 100	Size Strand Inches	Shipping Wt. Lb. per 100
7480	\$35.00	1/4	33
7481	35.00	5/16	33
7482	40.00	3/8	50
7483	45.00	7/16	77
7484	45.00	1/2	77
7485	55.00	5/8	126
7486	65.00	3/4	165
7487	75.00	7/8	270
7488	85.00	1	285
7489	95.00	1 1/8	335
7490	110.00	1 1/4	484
7491	125.00	1 3/8	500
7492	150.00	1 1/2	698



No. 7486



No. 7593

Hubbard Guy Thimbles

Hot Galvanized

Made from half oval steel, grooved to fit guy strand and bent to proper radius to prevent the strand from being sharply bent.

Furnished with open loop so it may be slipped over eyes.

No.	7593	7594	7595
Per 100	\$9.20	12.40	18.00
Size Strand	3/8 inches	1/2	5/8
Size Guy Rod	1/2 & 5/8 inches	5/8 & 3/4	1
Ship. Wt. per 100	lb. 11	21	42

If desired, thimble can be supplied in copper or bronze at special prices.

Hubbard Drop-Forged Turnbuckles

Hot Galvanized



Eye and Eye

Eye and Hook

Turnbuckle parts including bodies, hooks, eyes, and clevises, excepting plain stubs, are drop-forged from open hearth steel. Bodies are fitted with hexagonal ends so that turnbuckles may be taken up with a wrench at the end as well as with a lever at the center.

In the case of clevis assemblies, clevis bolts are furnished $\frac{3}{8}$ -inch in diameter for the $\frac{3}{8}$ and $\frac{1}{2}$ -inch size turnbuckles; $\frac{1}{2}$ -inch in diameter for the $\frac{5}{8}$ -inch sizes; $\frac{3}{4}$ -inch in diameter for the $\frac{3}{4}$ -inch sizes; $\frac{3}{4}$ -inch in diameter for the 1-inch sizes; $1\frac{1}{8}$ -inch in diameter for the $1\frac{1}{4}$ -inch sizes.

Stub and stub style is furnished for use where stubs are to be welded to tie rods and other similar types of construction. Special assemblies can be made to suit requirements.

Nos. and Types of Assemblies

Size Inches	Eye and Eye	Eye and Hook	Eye and Clevis	Hook and Hook	Clevis and Hook	Clevis and Clevis
$\frac{3}{8}$ x 6	8601	8621	8641	8661	8681	8701
$\frac{1}{2}$ x 6	8602	8622	8642	8662	8682	8702
$\frac{1}{2}$ x 9	8603	8623	8643	8663	8683	8703
$\frac{1}{2}$ x 12	8604	8624	8644	8664	8684	8704
$\frac{5}{8}$ x 6	8605	8625	8645	8665	8685	8705
$\frac{5}{8}$ x 9	8606	8626	8646	8666	8686	8706
$\frac{5}{8}$ x 12	8607	8627	8647	8667	8687	8707
$\frac{3}{4}$ x 6	8608	8628	8648	8668	8688	8708
$\frac{3}{4}$ x 9	8609	8629	8649	8669	8689	8709
$\frac{3}{4}$ x 12	8610	8630	8650	8670	8690	8710
1 x 6	8614	8634	8654	8674	8694	8714
1 x 12	8616	8636	8656	8676	8696	8716
$1\frac{1}{4}$ x 6	8617	8637	8657	8677	8697	8717
$1\frac{1}{4}$ x 12	8619	8639	8659	8679	8699	8719

Dimensions

Diam. In.	Open In.	Closed In.	Lgth. Opening In.	Width Eye In.	Lgth. Eye In.	OPENING INCHES		Ship. Wt., Lb. per 100
						Hook	Clevis	
$\frac{3}{8}$	17	11	6	$\frac{9}{16}$	1	$\frac{1}{2}$	$\frac{1}{2}$	107
$\frac{1}{2}$	18	12	6	$\frac{3}{4}$	1	$\frac{5}{8}$	$\frac{5}{8}$	163
$\frac{1}{2}$	24	15	9	$\frac{3}{4}$	1	$\frac{5}{8}$	$\frac{5}{8}$	206
$\frac{1}{2}$	30	18	12	$\frac{3}{4}$	1	$\frac{5}{8}$	$\frac{5}{8}$	250
$\frac{5}{8}$	19	13	6	$1\frac{1}{2}$	2	$\frac{3}{4}$	$\frac{3}{4}$	323
$\frac{5}{8}$	25	16	9	$1\frac{1}{2}$	2	$\frac{3}{4}$	$\frac{3}{4}$	415
$\frac{5}{8}$	31	19	12	$1\frac{1}{2}$	2	$\frac{3}{4}$	$\frac{3}{4}$	477
$\frac{3}{4}$	19 $\frac{1}{4}$	13 $\frac{1}{4}$	6	$1\frac{1}{2}$	2	$\frac{7}{8}$	$\frac{3}{4}$	440
$\frac{3}{4}$	25 $\frac{1}{4}$	16 $\frac{1}{4}$	9	$1\frac{1}{2}$	2	$\frac{7}{8}$	$\frac{3}{4}$	594
$\frac{3}{4}$	31 $\frac{1}{4}$	19 $\frac{1}{4}$	12	$1\frac{1}{2}$	2	$\frac{7}{8}$	$\frac{3}{4}$	682
1	21 $\frac{1}{4}$	15 $\frac{1}{4}$	6	$1\frac{1}{2}$	2	$1\frac{1}{8}$	1	930
1	33 $\frac{1}{4}$	21 $\frac{1}{4}$	12	$1\frac{1}{2}$	2	$1\frac{1}{8}$	1	1230
$1\frac{1}{4}$	29 $\frac{1}{4}$	17 $\frac{1}{4}$	6	$1\frac{3}{4}$	2 $\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{5}{8}$	1461
$1\frac{1}{4}$	35 $\frac{1}{4}$	23 $\frac{1}{4}$	12	$1\frac{3}{4}$	2 $\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{5}{8}$	1909

Prices upon application.

Hubbard Guards and Protection Strips

Hot Galvanized

Hub guard is used on wood pole to protect it from the hubs of vehicles. Dimensions given are those of the flat plates before bending, the 14-inch guard having a $5\frac{1}{2}$ -inch radius, and the 16-inch guard, a $7\frac{1}{2}$ -inch radius.

All holes are $\frac{1}{16}$ -inch diameter for $\frac{1}{2}$ -inch lag screws.

Pole protection strips are used to protect poles from chafing.

Hub Guards

No.	Per 100	Dimensions Inches	Shipping Wt., Lb. per 100
†7100	\$233.80	14x18x $\frac{1}{8}$	1000
†7101	244.90	16x18x $\frac{1}{8}$	1200
*7102	600.40	14x30x $\frac{3}{16}$	2300
*7103	665.60	16x30x $\frac{3}{16}$	2500

Pole Protection Strips

7110	\$15.90	2x48x24 Ga.	60
†A.T.&T. Co. Std. *Western Union Std.			

Hubbard Flat Crossarm Braces

Hot Galvanized



No. 8020

Made from new open hearth steel punched for a $\frac{1}{2}$ -inch through bolt or lag screw at the pole end and $\frac{3}{8}$ -inch carriage bolts at the arm end.

Ribbed braces offer approximately 25% additional strength. Clearance is allowed so that ribbed portion does not interfere with attachment to arm on either side.

If specified, standard braces may be obtained with rounded corners.

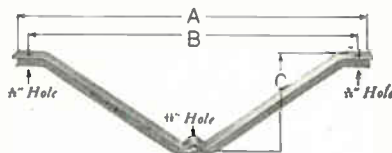
Plain		Ribbed		Size Steel Inches	Length Over All Inches	Ship. Wt. Lb. per 100
No.	Per 100	No.	Per 100			
†8020	\$20.80	6620	\$28.00	$\frac{1}{2}$ x $1\frac{1}{2}$	20	156
8022	22.90	6622	30.40	$\frac{1}{2}$ x $1\frac{1}{2}$	22	172
8024	24.90	6624	32.80	$\frac{1}{2}$ x $1\frac{1}{2}$	24	187
8026	27.00	6626	35.30	$\frac{1}{2}$ x $1\frac{1}{2}$	26	202
†8028	29.10	6628	38.30	$\frac{1}{2}$ x $1\frac{1}{2}$	28	218
†8030	31.20	6630	40.50	$\frac{1}{2}$ x $1\frac{1}{2}$	30	233
8032	33.30	6632	42.90	$\frac{1}{2}$ x $1\frac{1}{2}$	32	249
8120	23.50	8320	30.80	$\frac{1}{4}$ x $1\frac{1}{4}$	20	184
8122	25.80	8322	33.00	$\frac{1}{4}$ x $1\frac{1}{4}$	22	201
8124	28.00	8324	36.00	$\frac{1}{4}$ x $1\frac{1}{4}$	24	220
8126	30.20	8326	38.60	$\frac{1}{4}$ x $1\frac{1}{4}$	26	238
§8128	32.40	8328	41.70	$\frac{1}{4}$ x $1\frac{1}{4}$	28	256
8130	34.60	8330	44.30	$\frac{1}{4}$ x $1\frac{1}{4}$	30	275
8132	36.80	8332	46.70	$\frac{1}{4}$ x $1\frac{1}{4}$	32	293

†A. T. & T. Co. Std. *Western Union Std.

§E. E. I. (N. E. L. A.) Std. †A. R. A. Std.

Hubbard Angle Crossarm Braces

Hot Galvanized



In the construction of heavy pole lines, the one-piece angle steel crossarm brace is in general use. It fastens under the arm with $\frac{1}{2}$ -inch machine bolts and to the pole with a $\frac{3}{8}$ -inch through bolt or lag screw. Special sizes supplied on request.

When ordering, state size of angle, A, B, and C dimensions, and hole sizes.

No.	Per 100	Angle Size Inches	DIMENSIONS INCHES			Ship. Wt. Lb. per 100
			A	B	C	
7948	\$175.40	$1\frac{1}{2}$ x $1\frac{1}{2}$ x $\frac{3}{16}$	51	48	14	974
7950	147.60	$1\frac{1}{2}$ x $1\frac{1}{2}$ x $\frac{3}{16}$	40	37	12	781
7952	175.40	$1\frac{1}{2}$ x $1\frac{1}{2}$ x $\frac{3}{16}$	51	48	14 $\frac{3}{4}$	979
7953	237.90	$1\frac{3}{4}$ x $1\frac{3}{4}$ x $\frac{3}{16}$	63	60	18	1408
7954	261.30	$1\frac{3}{4}$ x $1\frac{3}{4}$ x $\frac{3}{16}$	69	66	20	1551
7955	273.20	$1\frac{3}{4}$ x $1\frac{3}{4}$ x $\frac{3}{16}$	75	72	18	1639
7956	319.90	2 x 2 x $\frac{3}{16}$	75	72	22	1958

E.E.I. (N.E.L.A.) Standard

No. 7940. For use with E.E.I. (N.E.L.A.), 7 foot, 2-pin medium voltage crossarm.

No. 7942. For use with E.E.I. (N.E.L.A.), 10 foot, 4-inch pin, medium voltage crossarm.

No. 7943. For use with E.E.I. (N.E.L.A.), special high voltage crossarms.

7940	\$184.60	$1\frac{1}{2}$ x $1\frac{1}{2}$ x $\frac{3}{16}$	45	42	12	858
7941	186.50	$1\frac{1}{2}$ x $1\frac{1}{2}$ x $\frac{3}{16}$	51	48	18	1067
7942	206.90	$1\frac{1}{2}$ x $1\frac{1}{2}$ x $\frac{3}{16}$	63	60	18	1210
7943	283.10	$1\frac{3}{4}$ x $1\frac{3}{4}$ x $\frac{3}{16}$	75	72	22	1716

Hubbard Alley Arm Braces

Hot Galvanized

Used extensively on distribution lines in alleys or where obstructions make it necessary to support wires on one side of pole. Also used at points where poles must be set slightly out of alignment. Arm being off-set in this case makes it possible to avoid a slight angle in the line.

Two holes for arm adjustment are supplied on Types A and C. Braces are attached to pole with 1/2-inch lag screws and to arm with 1/2-inch machine bolts. Furnished with steps.

Type A

For side arm mounting with one leg of the angle under the arm.

No.	Per 100	Length Feet	Size Angle Inches	Ship. Wt. Lb. per 100
7972	\$395.20	6	1 3/4 x 1 3/4 x 3/16	1750
7974	446.00	8	1 3/4 x 1 3/4 x 3/16	1975

Type B



This is the standard brace for side arm mounting.

\$7979	\$286.00	5	1 3/4 x 1 3/4 x 3/16	1240
7981	257.90	5	1 1/2 x 1 1/2 x 3/16	1000
7982	289.10	6	1 1/2 x 1 1/2 x 3/16	1200
7983	327.40	7	1 1/2 x 1 1/2 x 3/16	1400
7984	359.80	7	1 3/4 x 1 3/4 x 3/16	1660
7985	718.70	10	2 x 2 x 1/4	3800

Type C



Can be used either under or on the side of the arm.

7996	\$397.50	6	1 3/4 x 1 3/4 x 3/16	1796
7998	509.60	8	1 3/4 x 1 3/4 x 3/16	2200

§E. E. I. (N. E. L. A.) Std.

Hubbard Vertical Braces

Standard Type

Hot Galvanized

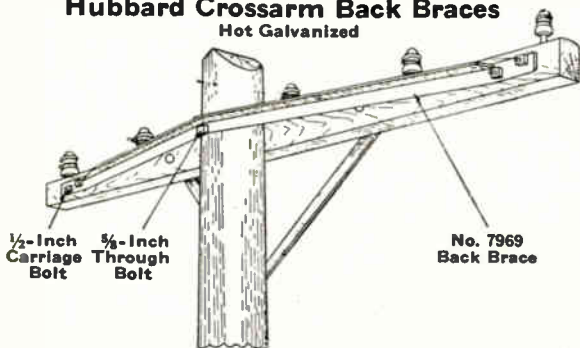


No.	Per 100	No. of Arms	Spacing Inches	Length Overall Inches	Size Angle Inches	Shipping Wt. Lb. per 100
7976	\$68.50	2	18	20	1 1/2 x 1 1/2 x 3/16	300
7977	118.60	3	18	38	1 1/2 x 1 1/2 x 3/16	520
7978	171.50	4	18	56	1 1/2 x 1 1/2 x 3/16	840
\$7986	85.90	2	24	26	1 1/2 x 1 1/2 x 3/16	380
\$7987	159.20	3	24	50	1 1/2 x 1 1/2 x 3/16	700
7988	225.50	4	24	74	1 1/2 x 1 1/2 x 3/16	1040

§E. E. I. (N. E. L. A.) Std.

Hubbard Crossarm Back Braces

Hot Galvanized



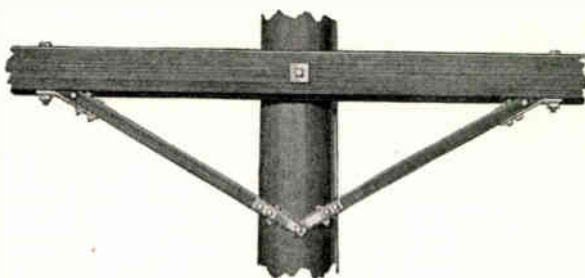
Used to reinforce crossarms at corners and terminal poles and in many cases eliminates the necessity for double arming.

The angles are made of open hearth steel and are attached to the arm by means of two 1/2-inch machine bolts at each end. If vertical brace is not used, crossarm attachment may be made by using 1/2-inch carriage bolts.

No.	Per 100	Angle Size Inches	Overall Length Inches	Shipping Wt. Lb. per 100
7964	\$124.00	1 1/2 x 1 1/2 x 3/16	48	550
7965	185.60	1 1/2 x 1 1/2 x 3/16	60	825
7966	269.90	1 1/2 x 1 1/2 x 3/16	72	1200
7967	351.10	1 3/4 x 1 3/4 x 3/16	94	1540
†7969	463.20	1 3/4 x 1 3/4 x 3/16	109	2204

†A. T. & T. Co. Std.

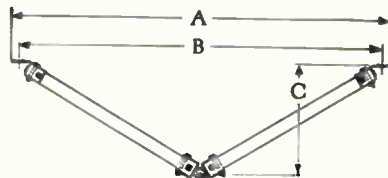
Hubbard Square 2-Piece Wood Crossarm Braces



Made of hickory, 1/2-inch square, creosote dipped. Fitted with hot galvanized fittings.

Under compression, the strain against the metal pieces at the lower end is borne by the wedging effect rather than the assembly bolts. The same is true at the top except that crossarm acts as one plane of the wedge. Under tension, reinforcing bolts prevent wood from splitting. Members are the same so they may be interchanged or mounted on either side of the pole.

Pole and arm mounting bolts are not included. Nos. cover two pieces making one complete brace.



No.	DIMENSIONS, INCHES			Shipping Weight Pounds per 100
	A	B	C	
5537	38 1/2	37	12	605
5542	43 1/2	42	12	638
5547	49 1/2	48	14 3/4	704
5548	49 1/2	48	18	750
5560	61 1/2	60	18	808
5566	67 1/2	66	20	863
5572	73 1/2	72	22	935

Prices upon application.

Rainier Crossarm Braces

Made Entirely of Wood



Provides the advantages of all-wood construction without reducing strength or life of pole structure or increasing its cost. Withstands greater stresses than balance of the pole structure; adequately survives shock and abuse.

Treated with 10 pounds of coal tar creosote per cubic foot of timber. Especially suitable near salt water or under corrosive atmospheric conditions.

The right and left-hand members are identical. The bolt holes fit and only three bolts are required to install a pair. They are interchangeable with double span steel braces.

This brace complies with crossarm freight classifications. Rainier Braces and Crossarms can be shipped in mixed carloads without sacrificing the carload freight rate.

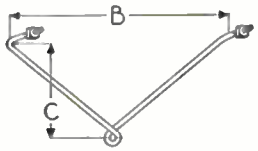
No.	Each	Size Inches	Span Inches	Drop Inches	Wt., Lb. per Pair
RB4212-5	1 3/4 x 2 3/4 x 32 1/16	42	12 1/2	9
RB4814-5	1 3/4 x 2 3/4 x 35 3/4	48	14 1/2	10
RB6018	1 3/4 x 2 3/4 x 42 5/8	60	18	11 3/4
RB6620	1 3/4 x 2 3/4 x 46 3/16	66	20	12 1/2
RB7221-5	1 3/4 x 2 3/4 x 49 1/2	72	21 1/2	13 1/2

Prices upon application.

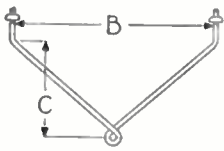
Hubbard Round Cross Arm Braces

Double Arm Braces

Horizontal Arm Fastenings



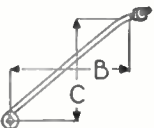
Vertical Arm Fastenings



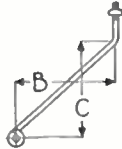
No.		DIMEN. INCHES		Approx. Ship Wt. Lb. per 100 Pcs.	No.		DIMEN. INCHES		Approx. Ship Wt. Lb. per 100 Pcs.
Mach. Thrd.	Rag Thrd.	B	C		Mach. Thrd.	Rag Thrd.	B	C	
8432	28432	38	11	182	8345	28345	38	8 3/4	180
8433	28433	38	14 5/8	194	8346	28346	38	12 5/8	192
8433 1/2	28433 1/2	28	14	152	8347	28347	38	15 1/2	205
8434	28434	38	17 3/4	206	8348	28348	38	18 5/8	217
8434 1/2	28434 1/2	42	18 1/2	198	8349	28349	38	21	231
8435	28435	38	20 5/8	220	8363	28363	37	12	189
8435 1/2	28435 1/2	42	21 1/4	209	8364	28364	42	12	199
8436	28436	38	23 1/4	233	8365	28365	48	14	225
8444	28444	37	14 1/4	191	8366	28366	48	14 3/4	226
8445	28445	42	14 1/4	203	8367	28367	48	18	250
8445 1/2	28445 1/2	28	21 1/4	184	8368	28368	60	18	269
8446	28446	48	16 1/4	227	8369	28369	66	20	292
8447	28447	48	17	228	8370	28370	72	18	301
8448	28448	48	20 1/4	253	8371	28371	72	22	315
8449	28449	60	20 1/4	271	.....	.....	.....	.....	.....
8450	28450	66	22 1/4	294	.....	.....	.....	.....	.....
8451	28451	72	20 1/4	303	.....	.....	.....	.....	.....
8452	28452	72	24 1/4	317	.....	.....	.....	.....	.....

Single Arm Braces—Eye Style Pole Mounting

Horizontal Arm Fastenings



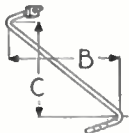
Vertical Arm Fastenings



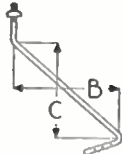
8471	8383	19	11	100	8034	8301	19	8 3/4	100
8472	8384	19	14 5/8	105	8035	8302	19	12 5/8	105
8473	8385	19	17 3/4	111	8036	8303	19	15 1/2	111
8474	8386	19	20 5/8	117	8037	8304	19	18 3/8	117
8475	8387	19	23 1/4	123	8038	8305	19	21	123
8476	8388	18 1/2	14 1/4	103	8039	8306	18 1/2	12	103
8477	8389	21	14 1/4	110	8040	8307	21	12	110
8478	8398	24	16 1/4	121	8046	8308	24	14	121
8494	8399	24	17	123	8047	8313	24	14 3/4	123
8495	8400	24	20 1/4	128	8048	8314	24	18	128
8496	8401	30	20 1/4	145	8049	8315	30	18	145
8497	8402	33	22 1/4	155	8056	8316	33	20	155
8498	8403	36	20 1/4	160	8057	8317	36	18	160
8499	8404	36	24 1/4	167	8058	8318	36	22	167

Single Arm Braces—Rag Thread Pole Mounting

Horizontal Arm Fastenings



Vertical Arm Fastenings



28471	28383	19	11	100	28034	28301	19	8 3/4	100
28472	28384	19	14 5/8	105	28035	28302	19	12 5/8	105
28473	28385	19	17 3/4	111	28036	28303	19	15 1/2	111
28474	28386	19	20 5/8	117	28037	28304	19	18 3/8	117
28475	28387	19	23 1/4	123	28038	28305	19	21	123
28476	28388	18 1/2	14 1/4	103	28039	28306	18 1/2	12	103
28477	28389	21	14 1/4	110	28040	28307	21	12	110
28478	28398	24	16 1/4	121	28046	28308	24	14	121
28494	28399	24	17	123	28047	28313	24	14 3/4	123
28495	28400	24	20 1/4	128	28048	28314	24	18	128
28496	28401	30	20 1/4	145	28049	28315	30	18	145
28497	28402	33	22 1/4	155	28056	28316	33	20	155
28498	28403	36	20 1/4	160	28057	28317	36	18	160
28499	28404	36	24 1/4	167	28058	28318	36	22	167

Hubbard Universal Messenger Hangers

Hot Galvanized

Forged from new, open hearth steel, with a curved wire groove, which permits use on curves as well as straight runs.

Two 1/2-inch clamp bolts hold the messenger securely in place.

Hanger is mounted by means of a 5/8-inch through bolt and a 1/2-inch lag screw.

Size of strand, 5/16 to 1/2 inch.

No.	8911	8912
Per 100	\$109.40	100.00
Steel Size	2 x 1/2	1 3/4 x 3/8
Lgth. of Legs	4 7/8 x 4 1/4	4 7/8 x 3 3/4
Ship. Wt. per 100 lb.	345	250



No. 8911

Hubbard Non-Breakable Messenger Hangers

Hot Galvanized



A combined spacer and clamp made of certified malleable iron. Used over a 5/8-inch through bolt and is curved to fit pole. Messengers held in place while stringing by vertical finger. Length clamping surface, 3 inches.

No.	8914	8915
Per 100	\$97.90	97.90
Size Strand	in. 5/16-3/8	1/16-1/2
Ship. Wt. Per 100 Pieces	150	150

Hubbard Cable Suspension Clamps

Hot Galvanized



No. 8901



No. 8903

For use over a through bolt which is also employed as a clamp bolt. One or more nuts or washers are generally used between clamp and pole to provide clearance.

No.	††8901	††8903	8904
Per 100	\$24.80	65.00	65.00
Type	1-Bolt	3-Bolt	3-Bolt
Overall Length	in. 2 3/8	5 5/8	5 5/8
Mounting Hole Diam.	in. 1 1/16	1 1/16	1 5/16
Strand Size	in. 1/4 to 1/16	1/4 to 1/16	1/4 to 1/16
Shipping Weight per 100	84	224	224

Hubbard Reinforcing and Safety Straps

Hot Galvanized

Used as an added safeguard for cable suspension clamps at points of extreme stress.

No. 8905 is employed to reinforce messenger bolt. No. 8906 is a safety strap to prevent cable from fall if messenger gives way. No. 8907 combines two items in one piece.



No. 8905

No. 8906

No. 8907

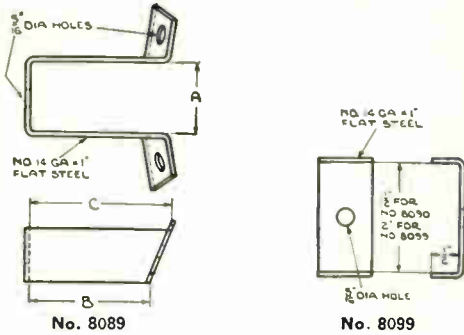
No.	Per 100	Size Steel In.	Ship. Wt. Lb. per 100
††8905	\$32.80	1 1/2 x 1/8	40
††8906	33.20	1 3/4 x 1/8	79
†8907	80.60	1 3/4 x 1/8	122

†A.T.&T. Co. Std. *Western Union Std.

†A.R.A. Std.

Hubbard Clip Washers

Hot Galvanized



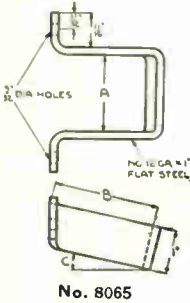
No. 8089 top clip washer and No. 8090 bottom clip washer are to be used with Graybar Standard No. 1 Wood Bracket.

No. 8098 top clip washer and No. 8099 bottom clip washer are to be used with Graybar Standard No. 2 Wood Bracket.

No.	Top		Bottom	
	8089	8098	8090	8099
Per 100	\$9.40	10.20	3.10	3.10
A Dimension	inches 1 1/2	2		
B Dimension	inches 1 1/16	2		
C Dimension	inches 1 1/16	2 1/4		
Shipping Weight Per 100. lb.	17	20	6	8

Hubbard Bracket Straps

Hot Galvanized



Two bracket straps, top and bottom, are used on each wood bracket.

A. T. & T. Standard.

No.	Per 100	Description	DIMENSIONS			Ship. Wt. Lb. Per 100
			A In.	B In.	C In.	
8065	\$9.40	Bottom	1 15/16	1 15/16	19°	16
8066	10.20	Top	1 15/16	2 1/16	19°	25
8067	11.20	Top	1 3/4	2	15°	22
8068	9.40	Bottom	1 3/4	7/8	15°	15

Hubbard U-Cable Guards and Straps

Hot Galvanized

When telephone or power cables enter the ground at the base of a pole or the side of a building, they are protected by U-cable guards. The guards are formed of No. 14 gage steel pressed to a U-shape which provides protection for pedestrians as well as providing stiffness for guard.

Nos. 7536 and 7537 have a 2 1/8-inch inside diameter belled bottom to fit over ground conduit.



No. 7533

U-Cable Guards

No.	Per 100	Length Feet	INSIDE DIAM. INCHES		Ship. Wt. Lb. per 100
			Top	Bottom	
†7531	\$125.50	6	1 1/8	1 1/8	495
†7532	183.20	5	2 3/16	2 3/16	825
†7533	254.60	8	2 3/16	2 3/16	1408
†7534	258.60	5	3 3/16	3 3/16	1210
†7535	448.80	8	3 3/16	3 3/16	1925
†7536	217.80	5	1 1/4	2 1/8	550
†7537	345.90	8	1 1/4	2 1/8	875

Mounting Straps

No.	Per 100	Size Steel Inches	Used with Cable Guard No.	Diam. Holes In.	Ship. Wt. Lb. per 100
†7539	13.20	1/8x 3/4	7532-3	3/16	23
†7540	23.80	3/16x1	7534-5	1 1/16	61
†7541	10.80	1/8x 3/4	7536-7	3/16	19

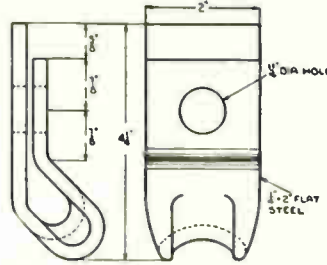
†A. T. & T. Co. Standard.



No. 7537

Hubbard Storm Guy Straps

Hot Galvanized



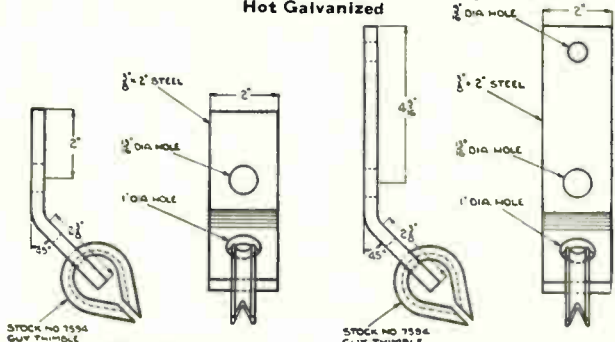
Nos. 6005 and 6006 are similar with the one exception of the diameter of the mounting holes.

The wire groove is rounded so as to give the strand a safe bending radius.

No.	6005	6006
Per 100	\$33.10	33.10
Material	inches 1/4x2	1/4x2
Length	inches 4 1/8	4 1/8
Diameter of Hole	inches 13/16	1 1/16
Ship. Wt. per 100	pounds 110	110

Hubbard Storm Guy Straps

Hot Galvanized



No.	6007	6009
Per 100	\$33.30	42.00
Material	inches 3/8x2	3/8x2
Length	inches 5 1/16	7 3/4
Diameter of Hole	inches 13/16	1/16 & 13/16
Ship. Wt. per 100	pounds 146	200

No. 6007, one-bolt, and No. 6009, one-bolt and one-lag screw, are furnished with a No. 7594 guy thimble.

Hubbard Storm Guy Straps

Hot Galvanized

Necessary to meet the needs of various operating companies, both power and communications.

Generally mounted back to back. Constructed with rounded wire grooves to give the strand a safe bending radius.

Nos. 6001 and 6002 are made of steel. No. 6003 is made of malleable iron.

No.	6001	6001	6002	6003
Per 100		\$42.20	58.80	52.20
Material	inches 1/4x1 1/2		1/4x2	
Length	inches 7		7 1/4	5 1/2
Upper Hole Diameter	inches 9/16		9/16	9/16
Lower Hole Diameter	inches 13/16		13/16	1 1/16
Ship. Wt. per 100 Pieces	lb. 117		195	100

Hubbard Servisleeves

PAT. NO. 192177
Hot Galvanized



Servisleeve is quickly installed by slipping the sleeve over the guy wire, belled end toward the clamp, and driving it down over the loose end of strand. Six inches of loose strand should be left extending beyond clamp. If end is clipped too near clamp, the resultant angle will be too great for the sleeve to slide over.

No.	7451	7452	7453	7454	7455	7456
Per 100	\$8.40	8.40	8.40	10.10	10.10	14.80
Size Strand	in. 3/16	1/4	5/16	3/8	7/16	1/2
Length Over All	in. 1 1/4	1 3/8	1 1/2	1 3/4	2	2 1/4
Ship. Wt. per 100	lb. 2.2	3.4	5.5	7.8	11.0	14.3

Hubbard Dead-End Clamps

Hot Galvanized

Designed for guy or static wire attachments to U-bolts, hook or eye fastenings.

Supplied with lugs around which the strand is snubbed.

Hot rolled to a 3/8-inch thickness from steel plates.

No. 7457			
No.	7457	7458	7459
No. of Bolts.	2	3	3
Overall Length. inches	6 1/4	8 1/2	9
Clamping Length. inches	4 3/4	6 3/4	7
Min. Size Strand. inches	1/4	5/16	3/8
Ship. Wt. Per 100. pounds	191	342	474

Hubbard Long Span Equipment For Open Wire Construction on Telephone Lines

Hot Galvanized

No. 7477 Dead Ending Clamps



Used for holding long spans at the structure. Consists of a sheave wheel and wire clamp.

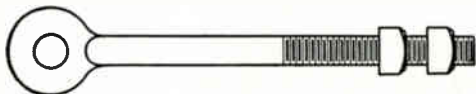
Mounting hole or eye diameter, 3/4 inch. Overall length, 10 7/8 inches. Steel size or diameter, 5/8 inch.

Length Clamp section, 5 7/8 inches.

Shipping weight per 100, 448 pounds.

Prices upon application.

No. 8968 Eye Bolts



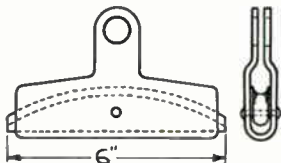
This eye bolt is suspended vertically through the arm with Hanger No. 8969 listed below.

Mounting hole or eye diameter, 3/4 inch. Overall length, 18 inches. Steel size or diameter, 5/8 inch. Length thread, 12 inches.

Shipping weight per 100, 249 pounds.

Prices upon application.

No. 8969 Hangers



Attached by means of a clevis to the arm from which is suspended eye bolt listed above. Wires are carried through hanger and rest on a curved, wood bearing block.

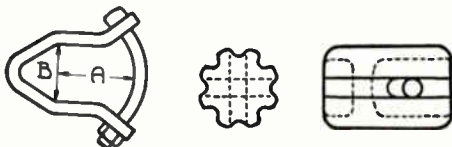
Mounting hole or eye diameter, 1 1/8 inch. Overall length, 6 inches. Steel size or diameter, 3/8 inch.

Shipping weight per 100, 141 pounds.

No. 8969. per 100 \$424.20

Hubbard Strain Insulator Clevises

Light Type
Hot Galvanized



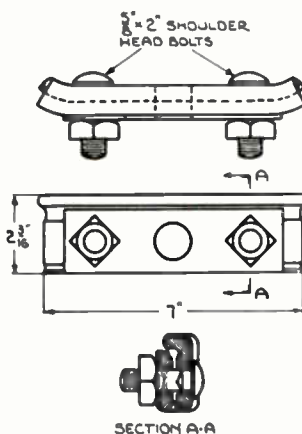
Drop forged from 1/8-inch diameter open hearth steel. Equipped with a 3/8-inch bolt and lock washer. A one-inch inside diameter eye is required to accommodate this clevis.

Ultimate strength, 8000 pounds.

No.	805	808	812
Per 100.	\$51.20	55.90	60.20
Dimension A. inches	3	4	5
Dimension B. inches	2	2 1/4	2 1/2
Ship. Wt. Per 100. lb.	81	92	115

No. 8902 Corner Cable Suspension Clamps

Hot Galvanized



For power or communication cable messengers. Used for heavy strains at corners where the included angle of the messenger is approximately 110° or over up to 180°.

It is used with the curved ends pointing toward the pole when the pull is toward the pole and with the curved ends away from the pole when the pull is away.

Used on 6000 and 10000-pound strand with the cable groove of the clamp below the pole bolt and on 16000-pound strand with the groove above the pole bolt. A reinforcing strap is recommended when 16000-pound strand is used. Clamp is drop forged from high carbon steel.

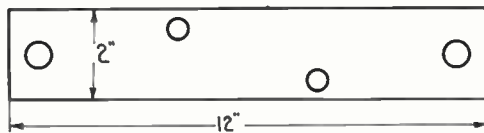
Three-bolt type. Overall length, 7 inches. Mounting hole diameter, 1 3/8 inches. Strand size, 1/4 to 1/2 inch inclusive.

Shipping weight per 100, 375 pounds.

No. 8902. per 100 \$125.40

Hubbard Protector Mounting Hangers

Hot Galvanized



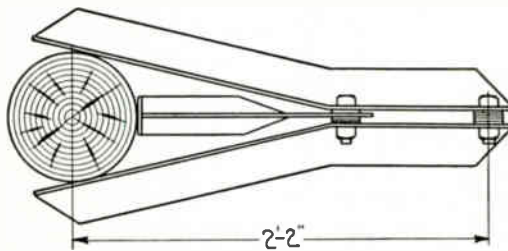
For mounting line protectors on poles. Two 5/8x1 1/2 machine bolts furnished. Lags for mounting to pole not included.

Steel size, 12x2x3/8. Diameter holes, 2 end, 5/16 inch, 2 inner, 1/8 inch.

Shipping weight per 100, 250 pounds.

Hubbard Cable Extension Arms

Hot Galvanized



This arm is used when it is necessary to suspend cables at some distance from the pole. Attached at the top by one 3/8-inch through bolt. T-iron brace is fastened by lag screws. Cables are attached by means of a short 3/8-inch machine bolt with a washer under the head. Bolt-head and washer ride on the top of the angles with the shank of the bolt between the two sides.

No. 8903. Three-bolt cable suspension clamp is attached on the machine bolt under the arm in a flat position. Extension of the cable from the pole can be varied 8 1/2 inches with No. 8920 and 18 inches with No. 8921.

No.	†8920	†8921
Per 100.	\$1170.70	2129.20
Extension from Center of Pole. in.	26	44 1/2
Angle Size. in.	3x2 1/2x1/4	3 1/2x2 1/2x3/16
Ship. Wt. Per 100. lb.	3050	6050

†A. T. & T. Co. Std.

Hubbard-Copperweld and Galvanized Staples



The larger sizes of Hubbard-Copperweld Staples are used for attaching ground wire moulding to the pole and the smaller sizes for insulated or bare ground wires.

Nos. 7521 and 7522 are used for standard one-inch moulding attachments.

Copperweld Rolled Point Staples

No.	Length Inches	Width Inside Inches	Thickness Inches	Approx. Shipping Wt. Lb. 100 Pcs.
7493	1 1/4	1/4	.114	1.0
7494	1 1/2	3/16	.144	1.5
7495	1 3/4	3/8	.144	2.0
7496	2	1/2	.162	2.25
7497	3	3/4	1/4	7.0
7498	3	1 1/2	1/4	8.5
7499	3 3/4	1 3/4	5/16	15.0
7521	2	1 1/16	3/16	4.0
7522	3	1	1/4	8.0
7523	3 1/2	1 1/2	1/4	10.0

Copperweld Cut Point (Fence) Staples

No.	Length Inches	Width Inside Inches	Thickness Inches	Approx. Shipping Wt. Lb. 100 Pcs.
7650	2	1/2	.162	2.25
7651	1 3/8	1/2	.162	1.75
7652	1 1/2	3/8	.162	2.00
7653	2	1/4	.162	2.25
7654	1 1/4	3/16	.114	.75

Galvanized Rolled Point Staples

No.	Length Inches	Width Inside Inches	Thickness Inches	Approx. Shipping Wt. Lb. 100 Pcs.
8511	1	3/8	1/8	.75
8512	2	1/2	.162	2.25
8513	2	1 1/16	3/16	2.80
8521	3	3/4	1/4	6.65
8522	3	1 1/16	1/4	7.00
8523	3	1 1/2	1/4	7.75

Staples

For Ground Wire

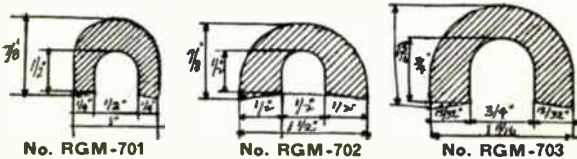


Packed in standard kegs weighing 100 pounds.
 Length.....inches 1 1/2
 Spread.....inches 3/16
 Galvanized Wire Gage No. 9
 Approximate Number in Keg. 7200
 Prices upon application.

For Ground Wire Moulding

Hot dipped galvanized after cutting.
 Packed in standard kegs weighing 100 pounds.
 Length.....inches 2 3
 Spread.....inches 1 1
 Size Wire.....inches 3/16 1/4
 Approximate Number in Keg. 2800 1200
 Prices upon application.

Rainier Fir Moulding

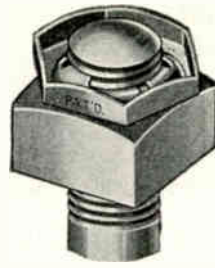


No.	RGM-701	RGM-702	RGM-703
Wt. per 1000 Lineal Ft. . . . lb.	120	180	310

Crapo Galvanized Ground Wire

For use in making economical, yet effective, pole grounds. Selected for its low electrical resistance and galvanized by the Crapo process.

B.W.G.	6	8	9
Diameter.....inches	0.203	0.165	0.148
Approx. Length Std. Coil.....feet	1320	2030	2520
Approx. Feet per Pound.....	8.94	13.53	17.0
Approx. Weight Std. Coil.....pounds	150	150	150



Hubbard Palnuts

Hot Galvanized

Applied after the regular nut is completely tightened. By continued turning of the Palnut, after it has contacted regular nut, prongs of Palnut are drawn into root of bolt thread locking the nut permanently. The resilient Palnut takes no load from the regular nut.

Palnut grips like the jaws of a chuck.

No.	4530	4531	4532	4533	4534
Bolt Size.....in.	3/8	1/2	5/8	3/4	7/8
Threads per Inch.....	16	13	11	10	9
Ship. Wt. per 100.....lb.	.39	.72	1.20	1.50	2.60

Prices upon application.

Hubbard Lock Washers

Hot Galvanized Spring Washers

Used for locking nuts on metal surfaces.



No.	Per 100	Size In.	Hole Diam. In.	Bolt Diam. In.	Ship. Wt. Lb. per 100
5034	\$.70	1/8x3/32	7/16	9/8	1.1
5035	1.40	1/64x1/8	9/16	1/2	2.4
5036	2.50	13/64x5/32	11/16	5/8	3.3
5037	3.50	1/4x3/16	13/16	3/4	5.5
5038	4.50	1/4x3/16	1 1/16	1	10.1

3-Prong Washers

Used on wood, the single point being buried in the wood and the two opposite points bent against adjacent sides of the nut.



No.	Per 100	Size In.	Hole Diam. In.	Bolt Diam. In.	Ship. Wt. Lb. per 100
5039	\$4.70	1 1/4x14 Ga.	9/16	1 1/2	5.5
5040	9.40	1 3/4x12 Ga.	1 1/16	5/8	11.0
5041	9.40	1 3/4x12 Ga.	1 3/16	3/4	11.0



Hubbard Pipe Straps

Hot Galvanized
 Furnished with nail or screw holes for attaching pipe or conduit to poles or buildings.

No.	Nom. Pipe Size In.	Approx. O.D. Pipe Size In.	Steel Size In.	Size Holes In.	Approx. Shipping Wt. Lb. 100 Pcs.
2140	1/4	17/32	7/8x18 Ga.	7/32	3.0
2141	3/8	1 1/16	7/8x18 Ga.	7/32	3.3
2142	1/2	27/32	7/8x18 Ga.	1/4	4.0
2143	3/4	1 1/16	7/8x18 Ga.	1/4	5.0
2144	1	1 5/16	1x16 Ga.	1/4	5.5
2145	1 1/4	1 11/16	1x16 Ga.	1/4	6.3
2146	1 1/2	1 15/16	1x16 Ga.	1/4	10.0
2147	2	2 3/8	1x16 Ga.	1/4	12.5
2148	2 1/2	2 7/8	1x12 Ga.	3/32	25.0
2149	3	3 1/2	1x12 Ga.	3/32	28.0
2150	3 1/2	4	1x12 Ga.	3/32	32.0
2151	4	4 1/2	1x12 Ga.	3/32	33.0

Hubbard Conduit Straps

Hot Galvanized



Used for attaching vertical conduit or pipe to wood poles. Nos. 8925 and 8926 are made of 1x1/4-inch steel and have holes for 3/8-inch lag screws. Nos. 8927 and 8928 are of 1 1/4x1/4-inch steel with holes for 1/2-inch lag screws and will accommodate two lines of conduit side by side.

No.	Single		Double	
	*8925	*8926	8927	8928
Per 100	\$27.50	36.10	37.30	53.20
Width Inside.....in.	2 1/2	3 1/2	4 3/4	7
Nom. Size Conduit.....in.	2	3	2	3
Ship. Wt. Per 100.....lb.	89	107	115	159

*Western Union Std.

Hubbard Square Washers

Hot Galvanized

Cleanly cut and smoothly galvanized. There are no irregularities of the zinc coating to interfere with the proper seating of bolt heads or nuts.

Can be supplied with nail holes at slight extra cost.



No.	Per 100	Size Inches	Diameter Hole Inches	Diameter Bolt Inches	Ship. Wt. Lb. per 100
7811	\$3.30	2 x2 x1/8	9/16	1/2	16
7812	3.30	2 x2 x1/8	11/16	5/8	16
7813	4.60	2 1/4 x2 1/4 x3/16	1 1/16	5/8	25
7813 1/2	4.60	2 1/4 x2 1/4 x3/16	9/16	1/2	25
††\$7814	4.60	2 1/4 x2 1/4 x3/16	13/16	3/4	25
7816	9.80	3 x3 x3/16	13/16	3/4	53
††\$7817	11.80	3 x3 x1/4	13/16	3/4	69
7818	16.10	4 x4 x3/16	13/16	3/4	96
†7819	21.00	4 x4 x1/4	15/16	3/4 & 7/8	127
††\$7820	42.90	4 x4 x1/2	1 1/16	1	251
†7826	27.50	3 1/2 x3 1/2 x3/8	13/16	3/4 & 7/8	136
†7827	73.50	6 x6 x3/8	1 1/16	1	407

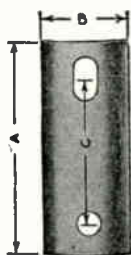
†A. T. & T. Co. Std. *Western Union Std. §E. E. I. (N. E. L. A.) Std. †A. R. A. Std.

Hubbard-Chance Load or Breast Plates

Hot Galvanized

Used as back bearing plates when either the guy loop and saddle or the straight-away loop and saddle are subject to heavy strains.

The curved plate is provided with one hole and one slot on four-inch centers.



No. 8877

No.	8877	8878
Per 100	\$26.20	26.20
Bolt Hole	3/4	7/8
Bolt Slot	3/4 x 1 1/4	7/8 x 1 1/2
Hole Spacing	4	4
Size Steel	7 x 2 1/2 x 3/4	7 x 2 1/2 x 3/4
Ship. Wt. per 100	112	112

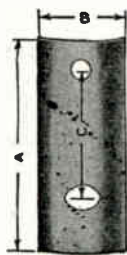
Hubbard Curved Lift Plates

Hot Galvanized

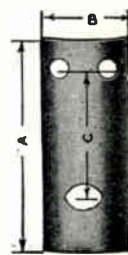
These plates are used under the eye of the Guyeye or Thimbleye angle bolts to distribute the strain of down-guys over a greater area.

Dimensions, 7x2 1/2 in.

All plates curved.



No. 8887



No. 8897

No.	Per 100	Diameter Bolt Inches	Size Bolt Hole Inches	Thick. Plate Inches	ATTACH. HOLES No.	Diam. In.	Shipping Wt. Lb. per 100
8887	\$21.40	5/8	1 1/16 x 15/16	3/16	1	9/16	99
8888	26.30	3/4	1 1/16 x 1 1/16	1/4	1	1 1/16	128
8889	31.10	1	1 1/16 x 1 1/16	5/16	1	1 1/16	151
8897	21.40	5/8	1 1/16 x 1 1/16	3/16	2	9/16	95
8898	26.20	3/4	1 1/16 x 1 1/16	1/4	2	9/16	124
8899	31.00	1	1 1/16 x 1 1/16	5/16	2	9/16	148

No. 8891 Hubbard Flat Guy Plates

Hot Galvanized

Used under the eye of the Guyeye or Thimbleye angle bolts to distribute the strain of down-guys over a greater area.

Dimensions, 7x2 1/2 inches. Bolt diameter, 1 inch and under; size bolt hole, 1 1/16 inches; plate thickness, 5/16 inch; 2 attachment holes; diameter of attachment holes, 9/16 inch.

A. T. & T. Co. Std.

No. 8891, Ship. Wt. 151 Pounds.....per 100 \$31.10



Hubbard Round Washers

Hot Galvanized

Cleanly cut and smoothly galvanized. There are no irregularities of the zinc coating to interfere with the proper seating of bolt heads or nuts.

Can be supplied with nail holes at slight extra cost.



No.	Per 100	O.D. In.	Gage No.	Diameter Hole Inches	Diameter Bolt Inches	Ship. Wt. Lb. per 100
††\$7801	\$.70	1	14	7/16	3/8	1.8
†7802	.90	1 1/4	14	1/2	3/8 Carriage	2.9
††\$7803	1.40	1 3/8	12	9/16	1/2	4.6
††\$7805	2.60	1 3/4	10	1 1/16	5/8	9.2
7805 1/2	2.60	1 3/4	10	13/16	3/4	9.2
7806	3.30	2	9	13/16	3/4	11.0
7808	5.70	2 1/2	8	1 1/16	1	19.0

†A. T. & T. Co. Std. *Western Union Std. §E. E. I. (N. E. L. A.) Std. †A. R. A. Std.

Hubbard Guy Shims

Hot Galvanized

Six or more guy shims are used per pole to prevent messenger or guy strand from cutting into the wood.

Diameter of nail holes, 1/4-inch.

No.	Per 100	Dimensions inches	Ship. Wt. Per 100 pounds
7570	\$11.90	1 1/2 x 7/8 x 8	57
7571	12.30	1 1/4 x 3/4 x 8	68

Hubbard Drop Forged Bolt Eyes

Hot Galvanized

Used extensively for dead-ending and guying. The standard bolt eye may be used for attaching dead-ending insulators to the cross arm. The long type is often used for supporting suspension insulators with a hook in the cap of the upper unit.

Unthreaded slot provides clearance for the insertion of bolt.



No. 7514



No. 7515

Standard Bolt Eye

No.	Per 100	Diam. Bolt In.	Bolt Hole In.	Width Eye In.	Length Eye In.	Shipping Wt. Lb. per 100
7514	\$46.50	5/8	1 1/16 x 13/16	1 1/8	12 1/2	83

Long Bolt Eye

No.	Per 100	Diam. Bolt In.	Bolt Hole In.	Width Eye In.	Length Eye In.	Shipping Wt. Lb. per 100
7515	\$65.20	5/8	1 1/16 x 13/16	1 3/8	3 3/8	117
7516	65.20	3/4	1 1/16 x 1 1/16	1 3/8	3 3/8	119
7517	50.20	5/8	1 1/16 x 1	1 1/2	2 1 3/8	109
7518	50.20	3/4	1 1/16 x 1 1/16	1 1/2	2 1 3/8	112

Hubbard Drop Forged Standard Eye Nuts
Hot Galvanized

This eye nut requires the use of a thimble. Used on through bolts, eye bolts, double arming bolts, etc. and for other attachments where it is desired to convert a standard, threaded bolt to a thimbleye bolt.

Commonly used for dead-ending a messenger wire or span guy on the threaded end of an angle thimbleye bolt on the opposite end of which is attached a down guy.

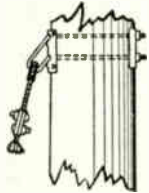


No.	Per 100	Diam. Bolt In.	Width Eye In.	Length Eye In.	Shipping Wt. Lb. Per 100
7500	\$41.60	1/2	1 1/8	1 1/8	55
7501	41.60	5/8	1 1/8	1 1/8	55
*7502	41.60	5/8	1 1/2	1 11/16	65
7503	41.60	3/4	1 1/2	1 11/16	65
7504	41.60	3/4	1 1/8	1 1/8	40
7505	41.60	1/2	1 1/8	1 1/8	40
7506	41.60	5/8	1 1/8	1 1/8	40

*Western Union Std.

Hubbard-Chance Guy Loops and Saddles
Hot Galvanized

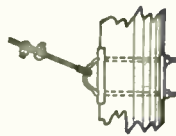
Provides a neat and sturdy attachment for down guys. The saddle is so designed that it supports and holds the loop in alignment. For heavy strains the load or breast plates should be used. Center to center spread between the legs, four inches.



No.	Per 100	Steel Diam. Loop In.	Diam. Pole In.	Shipping Wt. Lb. per 100
8756	\$117.10	5/8	6 to 8	338
8758	131.00	5/8	8 to 10	365
8760	144.90	5/8	10 to 12	394
8762	158.20	5/8	12 to 14	422
8764	170.00	5/8	14 to 16	465
8768	169.90	3/4	8 to 10	496
8770	186.20	3/4	10 to 12	532
8772	200.70	3/4	12 to 14	579
8774	214.60	3/4	14 to 16	621

Hubbard-Chance Straight-Away Loops and Saddles
Hot Galvanized

Used for dead-ending on poles or for attaching guy wires that make small angles with the horizontal. The saddle is so designed that it supports and holds the loop in alignment. For heavy strains the load or breast plates should be used. Center to center spread between legs, four inches.



No.	Per 100	Steel Diam. Loop In.	Diam. Pole In.	Shipping Wt. Lb. Per 100
8776	\$111.00	5/8	6 to 8	255
8778	124.80	5/8	8 to 10	285
8780	136.00	5/8	10 to 12	313
8782	151.00	5/8	12 to 14	343
8784	163.40	5/8	14 to 16	385
8788	142.40	3/4	8 to 10	414
8790	158.10	3/4	10 to 12	456
8792	172.30	3/4	12 to 14	498
8794	186.60	3/4	14 to 16	540

Hubbard-Chance Messenger Dead-Ends
Hot Galvanized



No. 1103 is made of drop forged steel 5/16 inch thick with reinforced slots. The thimble section follows the regular thimbleye design.

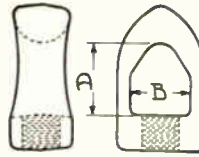
No. 1104 is similar to the No. 1103 with the addition of the thimbleye for attaching guys.



No.	Per 100	Size Slot	Messenger Strand Size	Guy Strand Size	Ship. Wt. per 100
1103	\$57.40	1 1/16 x 1 1/16	5/8 & Under	1/2 & Under	133

No.	Per 100	Size Slot	Messenger Strand Size	Guy Strand Size	Ship. Wt. per 100
1104	81.70	1 1/16 x 1 1/16	5/8 & Under	1/2 & Under	231

Hubbard Drop Forged Guyeye Nuts
Hot Galvanized



Used on through bolts, eye bolts, double arming bolts, straight and angle thimbleye bolts, cross arm bolts, anchor rods and for other attachments where it is desired to convert a standard, threaded bolt to a thimbleye bolt.

Commonly used for dead ending a messenger wire or span guy on the threaded end of an angle thimbleye bolt on the opposite end of which is attached a down guy.

No.	Per 100	Diameter Bolt	Dimension A, Length Eye	Dimension B, Width Eye	Ship. Weight per 100
7660	7661	7662	5/8	3/4	1
51.40	58.20	65.60	1 5/8	1 5/8	2
			1 5/16	1 5/16	1 3/4
			114	114	170

†A. T. & T. Co. Std.

Hubbard Drop Forged Straight Bolt Thimbleyes
Hot Galvanized



Thimbleye has unthreaded slot to provide clearance for the insertion of bolts. Used for cross arm guying where a circuit has been dead-ended, although it is suitable for many other guying and dead-ending needs.

Follows the standard thimbleye design. Will take strand 1/2 inch diameter and under.

No.	Per 100	Diameter Bolt	Bolt Hole	Width Eye	Length Eye	Shipping Weight per 100
7519	7520	5/8	3/4	1 1/16 x 1	1 3/8 x 1 1/8	138
\$58.00	61.90	1 1/16	1 1/8	2 1/2	138	

Hubbard Drop Forged Angle Bolt Thimbleyes
Hot Galvanized



Used almost exclusively for down guys. Eliminates the use of strain plates, guy hooks, guy thimbles, nails and lag screws and saves from three to five feet of guy strand. Often used on the nut end of a bolt for a down guy attachment with a straight bolt eye under the head of the bolt as a dead-end.

Nos. 1100 and 1101 will take strand 1/2 inch diameter and under. No. 1102 accommodates strand 5/8 inch diameter and under. Furnished with round unthreaded hole, no clearance being needed.

No.	Per 100	Diameter Bolt	Bolt Hole	Width Eye	Length Eye	Ship. Wt. per 100
1100	1101	1102	5/8	3/4	1	1
\$51.90	55.90	74.00	3/4	7/8	1 1/8	13 1/16
			5/8	3/4	1 1/4	172
			1	1	1 1/4	172

Hubbard Drop Forged Thimbleye Nuts
Hot Galvanized

Used on through bolts, eye bolts, double arming bolts, straight and angle thimbleye bolts, cross arm bolts, anchor rods and for other attachments where it is desired to convert a standard, threaded bolt to a thimbleye bolt.

Commonly used for dead ending a messenger wire or span guy on the threaded end of an angle thimbleye bolt on the opposite end of which is attached a down guy.



No.	Per 100	Diam. Bolt In.	Width Eye In.	Length Eye In.	Shipping Wt. Lb. Per 100
7509	\$51.10	1/2	7/8	1 1/2	118
7510	51.10	5/8	7/8	1 1/2	117
7511	57.90	3/4	7/8	1 1/2	116
7512	65.60	1	1 1/4	1 11/16	166

Hubbard Strain Plates

Hot Galvanized



No. 7575



No. 7576

Used to protect the pole fibres from being cut by messenger or guy strand.

Furnished standard, with offset to fit 1 1/4-inch maximum diameter ground wire moulding.

Diameter nail holes, 3/8 inch.

No.	†*7575	7576
Per 100	\$21.90	23.10
Type	Standard	Moulding
Dimensions	4x8	4x8
Gage	14	14
Ship. Wt. per 100	95	95

*Western Union Std. †A. R. A. Std.

Hubbard Strain Plates

Hot Galvanized



No. 7577



No. 7578

Used to protect the pole fibres from being cut by messenger or guy strand.

No. 7577 has a welded hook, one 1/16-inch guy hook and hole and two 1/8-inch lag screw holes.

No. 7578 furnished with the hook pressed out of the material and rounded to protect the strand.

No.	7577	7578
Per 100	\$45.80	23.70
Type	Heavy Guy Hook	Light Guy Hook
Dimensions	4x8	4x8
Gage	14	14
Ship. Wt. per 100	134	95

Hubbard Guy Hooks

Hot Galvanized



No. 7584



No. 7585



No. 7586

Necessary to meet the needs of various operating companies, both power and communication.

Constructed with rounded wire grooves to give the strand a safe bending radius. Made of steel.

No.	7583 1/2	†*7584	7585	7586	7587
Per 100	\$10.40	22.60	16.10	22.60	50.20
Description	Light	Med.	Hvy.	Hvy.	Angle
Material	1/4x1 1/4	3/8x1 3/4	3/8x1 1/2	3/8x1 1/2	1/16x1 3/4
Length	3 3/4	4	3 1/2	6	6 3/4
Upper Hole					
Diam.				3/16	3/16 (2)
Lower Hole					
Diam.	3/16	1/16	3/16	3/16	1/16
Ship. Wt. per 100	40	89	65	91	154

†A. T. & T. Co. Std. *Western Union Std. †A. R. A. Std.

Peirce Detachable Pole Steps

Hot Galvanized



To install this pole step, slip the plate, which acts as a bearing surface for step, over lag screw and drive lag in until plate bites into pole. Step slips down in a groove on each side of lag screw head and is prevented from turning by a lug projecting from bottom of plate. A nail driven through a hole in plate offers additional security against turning. Five steps per pole are generally used. Unlicensed climbing is prevented by removing steps.

No.	Per 100	Description	Lag Screw Inches	Extension from Pole	Shipping Wt. per 100
7235	\$31.50	Lag and Plate	3/16x4	...	93
7236	51.70	Step	...	5 1/8	50

Hubbard Pole Steps

For Wood Poles
Hot Galvanized



No. 7125



No. 7126



No. 7129

Made of open hearth steel and can be bent to an angle of 75° around its own diameter without fracture. Hook head step has drive head and fetter drive threads. Button head step has twist drive threads and a square shoulder.

No.	Per 100	Type Head	Diameter Inches	Length Overall	Shipping Wt. per 100
7123	\$17.60	Standard Hook	3/16	9	70
7124	19.80	Standard Hook	5/8	9	88
†*7125	21.30	Standard Hook	5/8	10	94
†7126	30.60	Long Hook	5/8	10	116
7128	22.10	Button	5/8	9 5/16	84
†*7129	23.90	Button	5/8	9 1/16	105
7130	35.30	Button	3/16	10	110

†A. T. & T. Co. Std. *Western Union Std. †E.E.I. (N.E.L.A.) Std. †A.R.A. Std.

Hubbard Steps for Tubular Poles

Hot Galvanized



Solid Type



Split Type

Made of 3/16x1 1/2-inch open hearth steel. Steps extend 5 1/4 inches from the pole. Ends are turned up 3/8 inch. Punched with oval holes and supplied with 1/2x1 5/8-inch oval shoulder clamp bolts.

POL, IN.	Solid Type			Split Type		
	No.	Per 100	Ship. Wt. per 100	No.	Per 100	Ship. Wt. per 100
4	7204	\$94.00	220	7304	\$96.80	284
4 1/2	7204 1/2	101.40	235	7304 1/2	103.80	291
5	7205	108.60	256	7305	110.10	298
6	7206	115.90	272	7306	121.20	320
7	7207	132.90	300	7307	132.00	345
8	7208	144.70	343	7308	143.00	370
9	7209	157.00	368	7309	154.00	395
10	7210	169.30	398	7310	167.50	420

Hubbard Grade Clamps

Hot Galvanized



No. 8985



No. 8989

Used to prevent creepage where cables are run on grades. Presteel type is made with a large clamping area so that the soft cable may be firmly gripped but not crushed. It is tightened by means of the 3/8x1-inch stove bolts furnished.

Drop-forged clamp is equipped with four 1/2-inch, oval neck clamp bolts, which cannot turn while nuts are being tightened.

Tolerances are held very close in order to grip both cable and messenger with the proper pressure when tightened in place.

Presteel—Stove Bolt Type

No.	Per 100	For Messenger Size Inches	For Cable Size Inches	Size Clamp Inches	Shipping Wt. Lb. per 100
8984	\$720.00	3/8 to 5/8	2 5/8	7 1/8x12	836
8985	720.00	3/8 to 5/8	3 1/2	7 1/8x12	850

†Drop Forged—4-Bolt Type

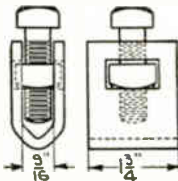
8986	\$388.20	5/16 to 1/2	1 3/8	5 1/4x4	495
8987	250.70	5/16 to 1/2	2 1/16	6 1/4x4	594
8988	262.10	5/16 to 1/2	2 1/2	7 x4	659
8989	272.30	5/16 to 1/2	2 3/8	7 3/8x4	704
8999	433.90	5/16 to 1/2	3 3/8	7 7/8x5	781

†Malleable Iron—4-Bolt Type

8982	\$178.00	5/16 to 1/2	1	4 3/4x4	495
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†No. 8956 Hubbard Strand Ground Clamps

Hot Galvanized

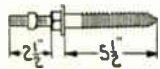


This clamp is used to provide a permanent electrical ground between cable sheath and messenger. Connection is soldered to the cable sheath and mechanically clamped to the messenger wire. Bolt can be completely removed so that clamp may be dropped over the messenger.

Size steel, 1/16x1 3/4 inches. Overall length, 2 1/2 inches. Bolt size, 1/2x1 3/4 inches. No. 8956, Ship. Wt. 57 Pounds.....per 100 \$18.60

†No. 8966 Hubbard Cable Suspension Screws

Hot Galvanized



Used in place of a standard through bolt or double arming bolt. Suspension clamps are mounted over the 5/8-inch stud.

Overall length, 8 3/4 inches. Length lag end under shoulder, 5 1/2 inches; machine screw end above shoulder, 2 1/2 inches.

No. 8966, Ship. Wt. 131 Pounds.....per 100

†Hubbard Reinforcing Links

Hot Galvanized



Used to relieve side strains at angles in the line. Will stand strains of 4000 pounds.

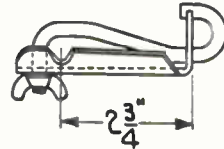
No.	Per 100	8919	*†8929
Overall Length.....	in.	5 3/4	8 3/8
Steel Size.....	in.	1/2	1/2
Mounting Hole Diam.....	in.	9/16	9/16
Ship. Wt. per 100.....	lb.	107	125

†A.T.&T. Co. Std. *Western Union Std. †A.R.A. Std.

Hubbard Span Clamps

Hot Galvanized

No. 8917



This clamp is used for taking off telephone service connections between wire spans in connection with wire clamps which attach through the wire attachment loop.

Strand size, 1/4 to 3/8 inch. Steel size, No. 11 gage.

Length of cable groove to wire attachment loop, 3 1/4 inches.

No. 8917, Ship. Wt. 144

Pounds.....per 100 \$28.50

No. 8918



Used for the same purpose as No. 8917. Consists of a clamp and spacer with holes for two knobs.

Strand size, 1/4 to 1/16 inch.

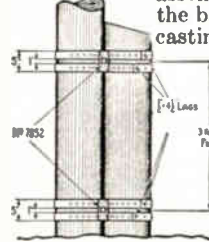
Steel size, 1/8 inch. Insulator spacing, 5 3/4 inches. No. 8918, Ship. Wt. 152 Pounds.....per 100 \$111.90

Type A Hubbard Pole Reinforcing Material

Hot Galvanized



When pole butts become rotted and weakened, reinforcing or stubbing is accomplished by the application of bands. Band and pipe assemblies are tightened in place by drawing the band together. No. 7852-A is a malleable casting which serves the same purpose as the pipe.



Band is attached first by a nail through the small hole in end. After wrapping pole and stub tightly by hand, a 1/2-inch lag screw is driven through loose end so that it engages both inside and outside wrap. Lag screws may be driven in either of end holes which are spaced farther apart than others.

This allows lining up with nearest inside hole. Four bands and four pipes are needed for a set.

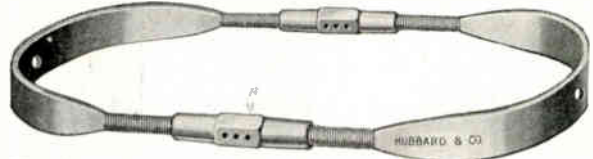
Lag screws and take-up bolts should be ordered separately.

No.	Per 100	Description	Size	Ship. Wt. Lb. per 100
†7850	\$91.50	Reinforcing Band...	12-Ga. x 2" x 68 1/2"	451
†7851	116.40	Reinforcing Band...	12-Ga. x 2" x 89 1/2"	577
†7852	72.40	Reinforcing Pipe...	Ex. Hvy. 2" x 5"	242
7852-A	72.40	Reinforcing Casting	5 1/16" Long, 1 1/4" Rad.	150
†7855	128.90	Reinforcing Band...	12-Ga. x 2" x 99"	858
†7856	155.80	Reinforcing Band...	12-Ga. x 2" x 120"	1100

†A. T. & T. Co. Std.

Hubbard Sleeve Nut Reinforcing Bands

Hot Galvanized



Tension is provided on the sleeve nut band by the turn-buckle nut. In general, poles are stubbed across the line. If they must be stubbed on the line, dowels are used.

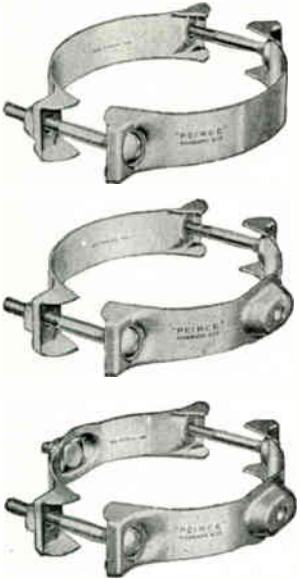
Peep-holes are provided in the nut for gauging take-up. Order two bands for a set.

No.	Per 100	Pole and Stub Diameter Inches	Length Nut Inches	Shipping Weight Pounds per 100
7750	\$272.90	8	4 1/2	367
7751	290.30	10	6	550
7752	307.70	12	6	625
7753	326.40	14	6	700
7754	342.70	16	6	780
7755	386.40	18	8	950
7756	403.70	20	8	1020
7757	421.30	22	8	1100

Peirce Adjustable Pole Bands

Hot Galvanized

For attaching racks, pole steps, crossarms, etc. to wood, steel, or concrete poles.



No.	Less Bolts per 100	Price	Plain		Single Cup		Double Cup	
			Outside Pole Diam. Adjustable Range, In.	Shp. Wt. Lb. per 100	Outside Pole Diam. Adjustable Range, In.	Shp. Wt. Lb. per 100	Outside Pole Diam. Adjustable Range, In.	Shp. Wt. Lb. per 100
8333	\$76.60	3 1/2 - 4	153	8353	\$80.70	3 1/2 - 4	158	
8334	84.60	4 - 4 1/2	165	8354	88.40	4 - 4 1/2	169	
8335	88.40	4 1/2 - 5 1/2	176	8355	92.40	4 1/2 - 5 1/2	180	
8336	96.20	5 1/2 - 7	199	8356	102.10	5 1/2 - 7	203	
8338	102.30	7 - 9	234	8358	108.40	7 - 9	238	
8340	119.70	9 - 11 1/2	281	8360	123.90	9 - 11 1/2	284	
8342	206.20	11 1/2 - 14 1/2	338	8362	147.00	11 1/2 - 14 1/2	342	
8373	\$84.80	3 1/2 - 4	162	8377	96.00	4 1/2 - 5 1/2	184	
8374	92.50	4 - 4 1/2	173	8376	107.90	5 1/2 - 7	207	
8375	96.00	4 1/2 - 5 1/2	184	8378	113.90	7 - 9	242	
8376	107.90	5 1/2 - 7	207	8380	127.40	9 - 11 1/2	289	
8378	113.90	7 - 9	242	8382	151.10	11 1/2 - 14 1/2	346	
8380	127.40	9 - 11 1/2	289					
8382	151.10	11 1/2 - 14 1/2	346					

Table for Determining Size of Band to Fit Specified Outside Pole Diameters

Outside Pole Diameter Inches	BAND NOS.		
	Plain	Single Cup	Double Cup
3 1/2, 3 3/4, 4	8333	8353	8373
4, 4 1/4, 4 1/2	8334	8354	8374
4 1/2, 4 3/4, 5, 5 1/4, 5 1/2	8335	8355	8375
5 1/2, 5 3/4, 6, 6 1/4, 6 1/2, 6 3/4, 7	8336	8356	8376
7, 7 1/4, 7 1/2, 7 3/4, 8, 8 1/4, 8 1/2, 8 3/4, 9	8338	8358	8378
9, 9 1/4, 9 1/2, 9 3/4, 10, 10 1/4, 10 1/2, 10 3/4, 11	8340	8360	8380
11 1/4, 11 1/2	8342	8362	8382
11 1/2, 11 3/4, 12, 12 1/4, 12 1/2, 12 3/4, 13, 13 1/4, 13 1/2, 13 3/4, 14, 14 1/4, 14 1/2			

Hubbard Solid Type Trolley Pole Bands

Hot Galvanized

For attaching span wires to tubular poles. Formed from 3/8x1 1/2-inch open hearth steel. Equipped with 1/2x1 5/8-inch elliptical shoulder clamp bolts.



1-Bolt Type

Nom. Pole Diam.	O.D.	1-Bolt Type			2-Bolt Type		
		No.	Per 100	Shp. Wt. Lb. per 100	No.	Per 100	Shp. Wt. Lb. per 100
3	3 1/2	7213	\$66.20	136	7223	\$84.70	170
3 1/2	4	7213 1/2	71.80	150	7223 1/2	90.60	184
4	4 1/2	7214	77.10	164	7224	96.70	198
4 1/2	5	7214 1/2	83.00	178	7224 1/2	102.40	212
5	5 1/2	7215	89.20	192	7225	108.50	226
6	6 5/8	7216	101.40	224	7226	121.00	258
7	7 7/8	7217	117.10	252	7227	133.50	286
8	8 7/8	7218	132.90	280	7228	149.00	314

Hubbard Split Type Trolley Pole Bands

Hot Galvanized

For attaching span wires to tubular poles. Made of 3/8x1 1/2-inch flat steel. With 1/2x1 5/8-inch clamp bolts.

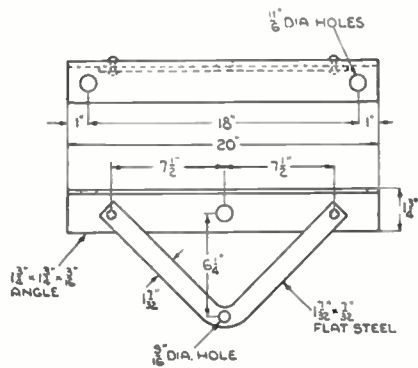


2-Bolt Type

Nom. Pole Diam.	O.D.	2-Bolt Type			3-Bolt Type		
		No.	Per 100	Shp. Wt. Lb. per 100	No.	Per 100	Shp. Wt. Lb. per 100
3	3 1/2	7323	\$82.60	178	7333	\$105.10	215
3 1/2	4	7323 1/2	88.90	192	7333 1/2	111.40	231
4	4 1/2	7324	98.70	206	7334	118.20	247
4 1/2	5	7324 1/2	106.30	220	7334 1/2	125.50	263
5	5 1/2	7325	113.30	234	7335	132.90	279
6	6 5/8	7326	122.90	266	7336	141.50	311
7	7 7/8	7327	139.20	294	7337	162.90	343
8	8 7/8	7328	152.90	322	7338	178.30	375

No. 3008 Telephone Pole Top Brackets

Hot Galvanized



Used primarily for oil line construction.

Any low voltage 5/8-inch diameter short shank pin may be used on this type bracket. Nos. 8015 and 8072 are recommended.

Pin hole size, 1/16 inch. Steel dimensions: brace, 1 1/2x1/2 inches; angle, 1 1/2x1 1/4x3/16 inches.

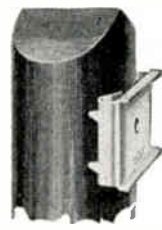
Shipping weight per 100, 520 pounds. No. 3008.....per 100 \$124.10

Peirce Pole Gains and Reinforcing Plates

Hot Galvanized

Peirce Pole Gains and Crossarm Reinforcing Plates used together form a highly efficient method of attaching and reinforcing a crossarm.

Presteel Pole Gains



Used for attaching crossarms to poles efficiently and quickly without the need for gaining the pole.

Permits easy adjustment for alignment of the crossarm and spaces the arm away from the pole allowing ample drainage and ventilation.

Compared with gaining a pole for double arming, an added spacing of approximately 2 inches between arms is obtained by using metal gains. The four spurs on the gain insure permanence of the original alignment.

No.	Per 100	Arm Size Inches	Bearing Surface on Crossarm Inches	Steel Gage No.	Shp. Wt. Lb. per 100
5091	\$93.80	3 1/4 x 4 1/4	4 1/4 x 6	9	288
5092	93.80	4 1/2 x 4 1/2	4 1/2 x 6	9	288
5093	93.80	3 3/4 x 4 3/4	4 3/4 x 6	9	288
5094	93.80	4 x 5	5 x 6	9	288

Crossarm Reinforcing Plates

Designed to give greater effectiveness than the square washer.

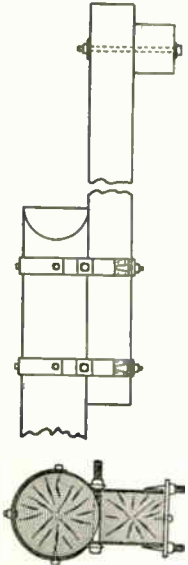
Prevents checking and splitting of the crossarm at the point of attachment.



No.	Per 100	Arm Size Inches	Bearing Surface on Crossarm Inches	Steel Gage No.	Shp. Wt. Lb. per 100
5042	\$40.00	3 1/4 x 4 1/4	4 1/4 x 3 7/8	7	120
5043	40.00	3 1/2 x 4 1/2	4 1/2 x 3 7/8	7	128
5044	40.60	3 3/4 x 4 3/4	4 3/4 x 3 7/8	7	136
5045	42.80	4 x 5	5 x 3 7/8	7	144
5046	54.80	3 3/4 x 5 3/4	5 3/4 x 3 7/8	7	160
5047	59.50	6 x 8	8 x 3 7/8	7	206

Hubbard Pole Extension Bands

Hot Galvanized



If desired to construct an extension for an additional arm, using a timber support instead of steel, an extension band is used. Installation is made by tightening band around the extension timber by means of a keeper and drawing sides together with through bolt.

Through bolts should be 5/8 inch diameter and 3 inches longer than thickness of extension timber. Partial installation of through bolt should be made before applying final tension on strap studs. After strap is completely tightened, through bolt is given its final take-up. Two bands are required for installation.

Bands are made of No. 12 gage by 2-inch steel with a stud attached at ends. Holes are provided for 5/8-inch lag screws to lock band against rotation.

Illustration shows vertical attachment of a 3 1/2 x 4 1/2-inch cross arm to a pole top using 2 No. 7858 extension bands.

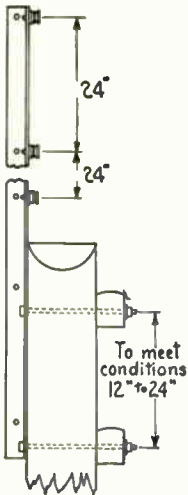
Lag screws, through bolt not included.

Size of extension timber: Minimum, 3 1/4 x 4 1/4 inches; maximum, 6 x 8 inches.

Size of pole top: Minimum, 5 inches; maximum, 10 inches. Approximate shipping weight, 100 pieces, 660 pounds.

Hubbard Highway Crossover Brackets

Hot Galvanized



Used to obtain clearance for carrying telephone wires to houses or over cross lines.

Holes 7/16 inch in diameter are provided for insulator attachments, which consist of porcelain knobs Nos. 9225 or 9226. Wireholder No. 1654 may also be used on No. 2384 by adding a 3/8-inch nut.

No. 2384 has two 1/2-inch pole mounting holes spaced 10 inches apart, and one 1/6-inch insulator attachment hole in each angle leg at the top.

No. 2385 is mounted on two 5/8-inch cross arm through bolts. Adaptable to cross arm spacings of 12, 18 or 24 inches. Three sets of insulator attachment holes are provided spaced 24 inches apart.

Knobs, insulators and mounting bolts are not included.

No.	2384	2385
Per 100	\$182.10	314.40
Size Steel	1 1/4 x 1 1/4 x 1/8	1 1/2 x 1 1/2 x 1/4
Length	72	90
Ship. Wt. per 100	660	1930

Hubbard Angle Steel Cable Crossarms

Hot Galvanized



For telephone cables. Furnished complete with No. 8901 messenger clamps, clamp bolts and nut spacers.

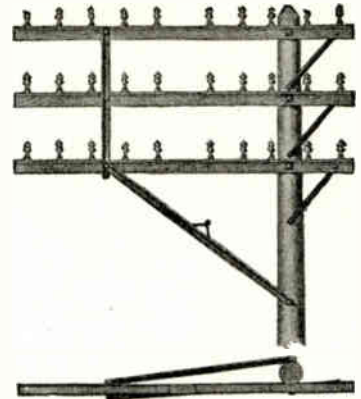
Braces and brace bolt are not included.

No.	Per 100	Use Crossarm Brace No.	Overall No. of Cables	Length In.	SPACING BETWEEN CABLES, INCHES			Size Angle Inches	Ship. Wt. Lb. per 100
					Center Two	Side			
8922	\$480.60	8120	2	24	20	..	3x3x1/4	1325	
8923	703.80	8120	4	36	20	6	3x3x1/4	2225	
8924	815.20	8130	6	48	20	6	3x3x1/4	3025	
8933	917.20	8120	4	36	20	6	5x3x3/16	3225	
8934	1407.60	8130	6	48	20	6	5x3x3/16	4425	
†8938	2035.60	8130	4	48	32	6	5x3x1/2	6525	
8939	2107.90	8130	6	48	20	6	5x3x1/2	6625	

†A. T. & T. Co. Std.

Hubbard Extension Fixtures

Hot Galvanized



Diagonal Brace, Back Brace, and Vertical Brace Installed

When it is necessary to clear buildings or trees without the use of high poles, these fixtures are used. Also used to offset arms on a pole where such construction will partially relieve the strain of a slight angle in the line. This method of offsetting is also useful where lines follow country roads with many slight bends in both directions. With extension fixtures the poles may be set at the roadside, and by extending arms either toward road or away from road, to compensate for conditions, the wires may be strung in a straight line. A. T. & T. Co. Standard.

No. 8050 Diagonal Braces

For use on both 6 and 10-pin arms. Provided with a 6-inch step for lineman and may be used on either side of pole. Fastened to side of pole by a 1/2-inch lag screw and to cross arm by a 1/2-inch machine bolt.

Made of 2x2x3/16-inch angle steel. Bolts not included.

Length overall, 83 inches.

No. 8050, Ship. Wt. 1892 Pounds.....per 100 \$322.80

†Back Braces

This brace is attached to pole by a 5/8-inch through bolt and to cross arm by a 1/2-inch machine or carriage bolt.

Made of 2x2x1/4-inch angle steel. Bolts not included.

No.	8051	8052
Per 100	\$256.90	342.10
For Use with Arms	6-Pin	10-Pin
Length Over All	54 1/2	66 1/8
Approx. Ship. Wt. per 100 Pcs.	1364	1892

†A. T. & T. Co. Std.

No. 8054 Vertical Braces—Communication Type

Designed for three arms spaced 12 inches apart, or two arms on 24-inch centers, additional arms being cared for by placing other Vertical Braces in Series with the first.

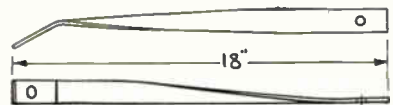
Made of 1 3/4 x 1 3/4 x 1/4-in. angle and provided with holes for 1/2-in. bolts. Bolts are not included. Length over all, 30 3/8 in.

No. 8054, Ship. Wt. 792 Pounds.....per 100 \$148.90

†A. T. & T. Co. Std.

No. 9240 Hubbard Guard Arm Braces

Hot Galvanized



This guard arm brace is used for supporting guard arms at points on poles where a cable is suspended.

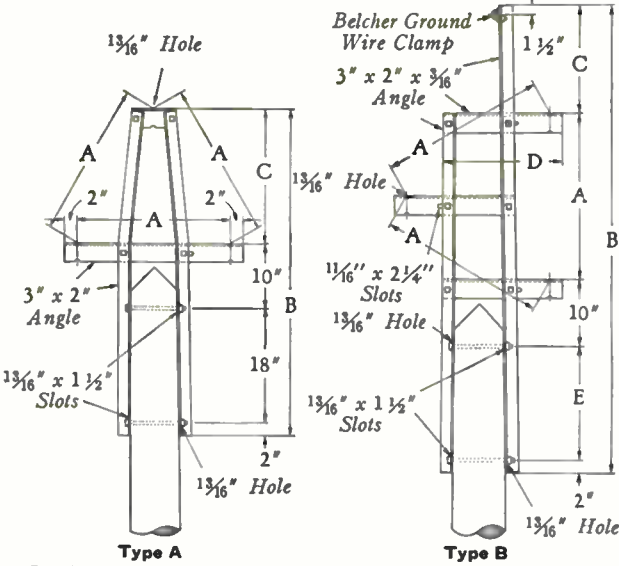
Steel size, 18x1 1/2 x 1/4 inches. Diameter hole straight end, 7/16 inch. Diameter hole bent end, 3/16 inch.

No. 9240, Ship. Wt. 170 Pounds.....per 100 \$40.40

†A. T. & T. Co. Std.

Hubbard High Tension Extensions

Hot Galvanized



Replacement of poles in order to secure room for an additional crossarm may often be avoided by the use of pole extensions. Extension has $\frac{1}{16}$ -inch pin holes. Notched to receive Peirce Clamp Pins. Special extensions can be made to suit requirements.

No.	Per 100	Triangular Wire Spacing Inches	DIMENSIONS, INCHES					Pole Diam.	Ship. Wt. Lb. per 100
			A	B	C	D	E		
2370	\$686.80	24	24	51	21	..	..	6 to 10	3850
2371	882.90	36	36	61 1/4	31 1/4	..	..	6 to 10	4950

No.	Per 100	Wire Spacing Inches	DIMENSIONS, INCHES					Pole Diam.	Ship. Wt. Lb. per 100
			A	B	C	D	E		
2380	\$981.20	26	26	74	18	19	18	7 to 10	5500
2381	1197.20	36	36	90 1/2	24 1/2	24	18	7 to 10	6710
2382	1570.10	52	52	126	32	30	30	7 to 10	8800

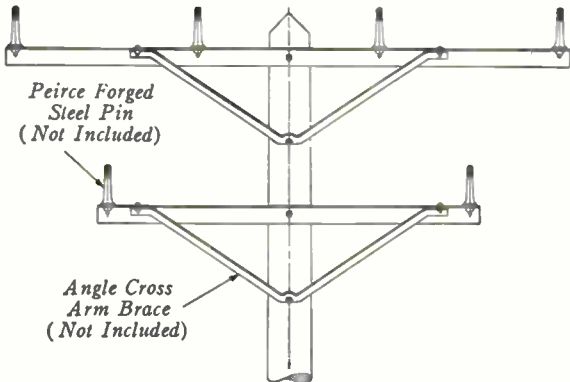
Hubbard Angle Steel Crossarms

Hot Galvanized

Pin holes, $\frac{1}{16}$ inch. Pole mounting hole, $\frac{1}{16}$ inch.

No.	No. Pins	Lgth. In.	BRACE No. Style	PIN SPACING, IN.		Size Angle In.	Ship. Wt. Lb. per 100
				Pole Pins	Side Pins		
7612	2	36	8120 Flat	30	..	3 x3 x 1/4	1625
7614	4	65	8126 Flat	30	14 1/2	3 x3 x 1/4	2915
7616	6	94	7940 Angle	30	14 1/2	3 1/2 x3 1/2 x 3/16	6215
7620	8	117 3/4	7941 Angle	30	13 3/8	3 1/2 x3 1/2 x 3/16	7770

Power Transmission Arms

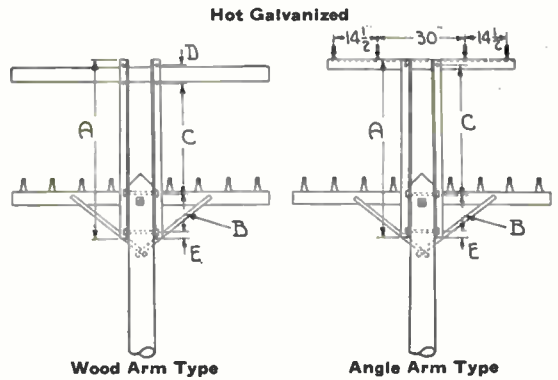


7622	2	28	8120 Flat	24	..	3 x3 x 1/4	1290
7632	2	40	8120 Flat	36	..	3 x3 x 1/4	1840
7642	2	52	8120 Flat	48	..	3 x3 x 1/4	2410
7624	4	76	7950 Angle	24	24	3 x3 x 1/4	3490
*7672	2	80	7940 Angle	74	..	3 1/2 x3 1/2 x 3/16	5280
*7634	4	116	7942 Angle	38	36	3 1/2 x3 1/2 x 3/16	7645

*E.E.I. (N.E.L.A.) standard pin spacing. Prices upon application.

Hubbard Pole Extensions

Hot Galvanized



Replacement of poles in order to secure room for an additional cross arm may often be avoided by the use of pole extensions. For the dimensions in the table to hold true, these extensions should be installed so that the upper through bolt of extensions is located at the top of telephone arm.

Each fixture has $\frac{1}{16}$ -inch holes for $\frac{5}{8}$ -inch pole bolts, one hole in each leg being slotted $1\frac{1}{2}$ inches long. Pole bolts and crossarm straps are not included. Assembly bolts and pins are included with Nos. 2376 and 2377.

No. 2375 consists of two $3 \times 3 \times \frac{1}{4}$ -inch angles, to which the crossarm is clamped by two crossarm straps.

No. 2374 is the same as No. 2375 except that the extension is greater.

No. 2376 consists of two $3 \times 3 \times \frac{1}{4}$ -inch angle steel legs and a crossarm 65 inches long of the same material, with four 1-inch thread pins spaced 30 inches between pole pins and $14\frac{1}{2}$ inches between side pins.

No. 2377 is the same as No. 2376 except that the extension is greater.

Wood Arm—Angles Only

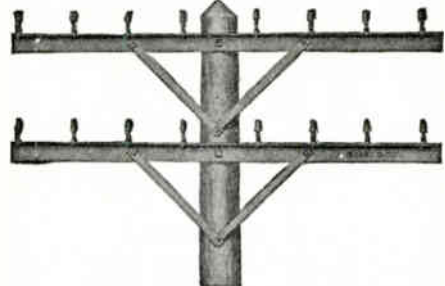
No.	2375	2374
Per 100.	\$1123.10	1576.20
A Dimension. inches	76	100
B Dimension. inches	24	24
C Dimension. inches	43 3/16	67 1/4
D Dimension. inches	4 1/4 to 5	4 1/4 to 5
E Dimension. inches	2	2
Ship. Wt., Per 100. pounds	6600	9100

Angle Arm—Complete

No.	2376	2377
Per 100.	\$1654.80	2047.10
A Dimension. inches	74	96
B Dimension. inches	24	24
C Dimension. inches	46 1/2	68 1/2
E Dimension. inches	2	2
Ship. Wt., Per 100. pounds	9570	11780

Hubbard Angle Steel Telephone Crossarms

Hot Galvanized



Pin hole size, $\frac{1}{16}$ inch. Pole mounting hole size, $\frac{1}{16}$ inch. Pole pin spacing, 16 inches. Side pin spacing, 10 inches. Flat style brace.

No.	7602	7604	7606	7608	7610
No. of Pins.	2	4	6	8	10
Length. inches	20	40	60	80	100
Brace No.	8020	8020	8022	8030	8032
Size Angle. inches	3x2x3/16	3x2x3/16	3x3x1/4	3x3x1/4	3x3x1/4
Ship. Wt. Per 100. lb.	575	1125	2700	3600	4510

Prices upon application.

Standard Western Union or Signal Pins

Hot Galvanized

For use with standard insulators having one-inch pin holes. Furnished with air dried oak cobs, boiled in paraffine. Pins of high-carbon steel, with clean threads and square nuts.

Long Shank Pins For Wood Crossarms

No.	†*8000	†*8005
Plain..... per 100	\$21.80	\$27.60
Galvanized..... per 100	24.50	31.90
Diameter Shank..... in.	1/2	5/8
Length above Shoulder..... in.	4 1/4	4 1/4
Length below Shoulder..... in.	5	5
Ship. Wt. Per 100..... lb.	88	125

Lag Screw Pins For Wood Arms and Poles

No.	8006	8007
Galvanized..... per 100	\$27.20	40.60
Diameter Shank..... in.	1/2	5/8
Length above Shoulder..... in.	4 1/4	4 1/4
Length below Shoulder..... in.	3	3
Ship. Wt. Per 100..... lb.	61	99

†A. T. & T. Co. Std. *Western Union Std. †A. R. A. Std.

Standard Western Union or Signal Pins

Hot Galvanized
Short Shank Pins

For use with standard insulators having one-inch pin holes. Furnished with air dried oak cobs, boiled in paraffine. Pins of high-carbon steel, with clean thread and square nuts.

For Steel Crossarms, Transposition Brackets and Break Irons

No.	†*8010	†*8015	8015A
Galvanized..... per 100	\$27.00	33.40	33.60
Diam. Shank..... in.	1/2	5/8	5/8
Lgth. above Shoulder in.	4 1/4	4 1/4	4 1/4
Lgth. below Shoulder in.	1	1	1 3/8
Ship. Wt. Per 100..... lb.	55	82	102

With Long Cob for Transposition Insulators

No.	8011	8016
Galvanized..... per 100	\$35.60	43.50
Diameter Shank..... in.	1/2	5/8
Length above Shoulder..... in.	5	5
Length below Shoulder..... in.	1	1
Ship. Wt. Per 100..... lb.	58	100

†A. T. & T. Co. Std. *Western Union Std. †A. R. A. Std.

Hubbard Wood Top Pins

With Steel Bolts
Hot Galvanized

Made of properly seasoned wood tops, thoroughly impregnated with paraffine. The head of the solid steel bolt is sunk in the pin top to eliminate pressure against insulator. Furnished assembled.

For 1-Inch Insulator Pin Hole



No. 8070

No. 8078

No.	Per 100	Wood Top		Diam. Bolt		Lgth. Be-Ship. low Wt. Wood Lb. per 100
		Diam. Top In.	Diam. Bot. In.	Lgth. In.	Diam. In.	
8064	\$27.70	1	1 13/16	4	1 1/2	9 5 80
8070	31.50	1	1 7/8	4 1/2	1 1/2	5 1/2 1 60
8071	39.70	1	2 1/4	5 1/4	1 1/2	6 1/2 1 1/4 78
8074	36.20	1	1 7/8	4 1/2	1 1/2	9 1/2 5 87
8075	44.30	1	2 1/4	5 1/4	1 1/2	10 1/2 5 1/4 101
8076	45.00	1	2 1/4	5 1/4	1 1/2	11 1/2 6 1/4 113

For 1 3/8-Inch Insulator Pin Hole

8072	\$48.90	1 3/8	2 1/4	4 1/2	5/8	5 1/2	1	110
8073	52.30	1 3/8	2 1/4	5 1/4	5/8	6 1/2	1 1/4	114
8077	57.40	1 3/8	2 1/4	4 1/2	5/8	9 1/2	5	147
8078	59.60	1 3/8	2 1/4	4 1/2	5/8	10 1/2	6	156
8079	59.80	1 3/8	2 1/4	5 1/4	5/8	10 1/2	5 1/4	164
8080	66.90	1 3/8	2 1/4	6 1/2	5/8	12 1/2	6	204
8081	80.40	1 3/8	2 1/4	8	5/8	14	6	247
8082	88.90	1 3/8	2 3/4	9	5/8	16	7	275

Hubbard Steel Insulator Pins

Hot Galvanized



No. 8060



No. 8061

Specially designed, steel threaded insulator pins for spindle threaded insulators.

Generally used with a lead foil cushion between the thread and insulator.

No.	8060	8061
Diameter Shank..... inches	5/8	5/8
Length above Shoulder..... inches	4 3/8	4 3/8
Length below Shoulder..... inches	5 1/16	1 3/8
Ship. Wt. Per 100..... lb.	125	85

Prices upon application.

No. 800 Economy Pins

Hot Galvanized



The wedge clip at the base of the pin is made of the best grade of stainless steel obtainable. It provides a solid, positive, locking device which holds the pin firmly in the arm. Strength in any direction horizontally (four inches above arm) is sufficient to offset 800 pounds strain with less than 10° deflection. Uplifts is resisted by the wedge shape of the clip. Crossarm pin holes should be 1 1/16-inch in diameter.

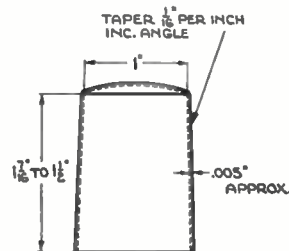
Made of No. 12-gage steel.

One installing rod is furnished with each lot of 100 pins.

Length overall, 8 5/8 inches. Diameter shank, 5/8 inch. Diameter body, 5/8 inch. Diameter pin thread, 1 inch. Size square base, 1 5/8 inches. Above base, 4 3/8 inches. Below base, 3 7/8 inches.

No. 800, Ship. Wt. 60 Pounds..... per 100 \$27.00

Lead Adapters



Used exclusively on the No. 800 Economy Pin. Variations of the insulator holes are absorbed by this thin lead adapter, which also cushions bottom of insulator hole and prevents popping of insulator heads.

Peirce Forged Steel Feeder Pins

Hot Galvanized



No. 3825

Used with composition feeder insulators.

Height above arm, 4 1/2 inches; diameter base, 2 1/2 inches; 1-inch die-forged insulator threads.

No.	3820	*3825
Per 100.....	\$171.90	163.10
Shank, Lgth. x Diam. inches	4x1 1/2	3 7/8x1 1/4
Ship. Wt. per 100..... pounds	389	326

*Threaded; with nut and 2-inch round washer.

Peirce Forged Steel Pins

With 1-Inch Lead Thread for Low Voltage Insulators
Hot Galvanized

Pin is scored and notched. Method of casting threads guarantees a standard thread, accurate in size and shape, and free from fins. When lead thread is cast it actually becomes a part of the pin.

Pin top is recessed in center.

Long Shank Type—For Wood Crossarms

Furnished with lock washers.



Flat Base No.	Curved Base No.	Per 100	Diam. In.	Lgth. In.	LENGTH, INCHES				Ship. Wt. Lb. Per 100
					Diam. Base	Above Base	Below Base	Overall	
971	20971	\$42.40	1/2	2 1/2	1 3/4	4 3/4	5	9 3/4	162
974	20974	42.40	1/2	3	1 3/4	4 3/4	5 1/2	10 1/4	167
980	20980	51.90	5/8	2 1/2	2	4 3/4	5	9 3/4	205
981	20981	52.00	5/8	2 1/2	2	4 3/4	5 1/2	10 1/4	210
981-A	20981-A	56.60	5/8	2 1/2	2	4 3/4	6 1/2	11 1/4	224
985	.....	85.50	5/8	2 1/2	2	4 3/4	8	12 3/4	245
982	20982	69.40	5/8	2 1/2	2	6	5	11	218
984	20984	69.50	5/8	2 1/2	2	6	5 1/2	11 1/2	220
983	20983	75.90	5/8	2 1/2	2	6	6 1/2	12 1/2	228
990-A	20990-A	91.10	3/4	2 1/2	2 1/2	4 3/4	5 3/4	10 3/4	248
990	20990	96.90	3/4	2 1/2	2 1/2	6	5 3/4	11 3/4	262
991	20991	103.70	3/4	2 1/2	2 1/2	6	6 3/4	12 3/4	271

Short Shank Type—For Wood Crossarms

Furnished with spring lock washers.



No.	Per 100	DIAMETER INCHES		LENGTH, INCHES			Ship. Wt. Lb. Per 100
		Shank	Base	Above Base	Below Base	Overall	
972	\$42.10	1/2	1 3/4	4 3/4	1 1/4	6	125
986	51.50	5/8	2	4 3/4	1 1/4	6	154
987	69.10	5/8	2	6	1 1/4	7 1/4	174
993-A	90.70	3/4	2 1/2	4 3/4	1 1/2	6 1/4	190
993	96.30	3/4	2 1/2	6	1 1/2	7 1/2	202

Lag Screw Type—For Pole and Transformer Wiring

No.	Per 100	DIAMETER INCHES		LENGTH, INCHES			Ship. Wt. Lb. Per 100
		Shank	Base	Above Base	Below Base	Overall	
973	\$40.40	1/2	1 3/4	4 3/4	3	7 3/4	144
975	43.90	1/2	1 3/4	6	3	9	147
988	45.60	5/8	2	4 3/4	3	7 3/4	163
989	69.30	5/8	2	7 1/2	4	11 1/2	195
994	75.80	3/4	2 1/2	6	4	10	198

Peirce Forged Steel Pins

With 1-Inch Spring Thread for Low Voltage Insulators
Hot Galvanized

For lighting, telephone and telegraph lines on which insulators with 1-inch pin holes are used. Eliminates danger of extreme temperature changes causing rupture of porcelain due to expansion.

Pins can be driven into crossarms or poles without injury to thread, although driving is not recommended.

Long Shank Type—For Wood Crossarms

Furnished with lock washers.



Flat Base No.	Curved Base No.	Per 100	Diam. In.	Lgth. In.	LENGTH, INCHES				Ship. Wt. Lb. Per 100
					Diam. Base	Above Base	Below Base	Overall	
71	20071	\$42.40	1/2	2 1/2	1 3/4	4 3/4	5	9 3/4	142
74	20074	42.40	1/2	3	1 3/4	4 3/4	5 1/2	10 1/4	147
80	20080	51.90	5/8	2 1/2	2	4 3/4	5	9 3/4	185
81	20081	52.00	5/8	2 1/2	2	4 3/4	5 1/2	10 1/4	190
81-A	20081-A	56.60	5/8	2 1/2	2	4 3/4	6 1/2	11 1/4	204
82	20082	69.40	5/8	2 1/2	2	6	5	11	198
84	20084	69.50	5/8	2 1/2	2	6	5 1/2	11 1/2	200
83	20083	75.90	5/8	2 1/2	2	6	6 1/2	12 1/2	208
90-A	20090-A	91.10	3/4	2 1/2	2 1/2	4 3/4	5 3/4	10 3/4	228
90	20090	96.90	3/4	2 1/2	2 1/2	6	5 3/4	11 3/4	242
91	20091	103.70	3/4	2 1/2	2 1/2	6	6 3/4	12 3/4	251

Peirce Forged Steel Pins

With 1-Inch Spring Thread for Low Voltage Insulators
Hot Galvanized

For lighting, telephone, and telegraph lines on which insulators with 1-inch pin holes are used. Eliminates danger of extreme temperature changes causing rupture of porcelain due to expansion.

Pins can be driven into crossarms or poles without injury to thread, although driving is not recommended.

Short Shank Type—For Steel Crossarms and Brackets

Furnished with spring lock washers.



No.	Per 100	DIAMETER INCHES		LENGTH, INCHES			Ship. Wt. Lb. per 100
		Shank	Base	Above Base	Below Base	Overall	
72	\$42.10	1/2	1 3/4	4 3/4	1 1/4	6	105
86	51.50	5/8	2	4 3/4	1 1/4	6	134
87	69.10	5/8	2	6	1 1/4	7 1/4	154
93-A	90.70	3/4	2 1/2	4 3/4	1 1/2	6 1/4	170
93	96.30	3/4	2 1/2	6	1 1/2	7 1/2	182

Lag Screw Type—For Pole and Transformer Wiring

Used largely wherever attachments of vertical runs of wires down poles are necessary, as in feeders to arc and series tungsten lamps, signal wires, etc. Also used on sides of crossarms for supporting transformer leads.

Threads are of Copperweld steel.



No.	Per 100	DIAMETER INCHES		LENGTH, INCHES			Ship. Wt. Lb. per 100
		Shank	Base	Above Base	Below Base	Overall	
73	\$40.40	1/2	1 3/4	4 3/4	3	7 3/4	124
75	43.90	1/2	1 3/4	6	3	9	127
88	45.60	5/8	2	4 3/4	3	7 3/4	143
89	69.30	5/8	2	7 1/2	4	11 1/2	175
94	75.80	3/4	2 1/2	6	4	10	178

Lag Screw Type—With 1-Inch Pressed Metal Thread

Thread is formed in two halves which are welded on opposite sides of pin top. Vertical weld further divides thread into four parts, similar to wings on which insulator rides and which have sufficient amount of spring to absorb expansion. Thread is drawn slightly in toward pin body when insulator is screwed down, providing a snug fit which is maintained by natural resiliency of the metal.



No.	Per 100	DIAMETER INCHES		LENGTH, INCHES			Ship. Wt. Lb. per 100
		Shank	Base	Above Base	Below Base	Overall	
973-P	\$40.40	1/2	1 3/4	4 3/4	3	7 3/4	144
975-P	43.90	1/2	1 3/4	6	3	9	147
988-P	45.60	5/8	2	4 3/4	3	7 3/4	163
989-P	69.30	5/8	2	7 1/2	4	11 1/2	195
994-P	75.80	3/4	2 1/2	6	4	10	198

Peirce Broad Base Forged Steel Pins

With 1-Inch Pin Hole

Hot Galvanized

For supporting heavy primary and secondary lines on wood crossarms. For flat top arms and roofed arms. Width base, 2 1/2 inches. Diameter shank, 5/8 inch; with 2 1/2 inches of cut thread and No. 5040 lock washer. Height above arm, 4 1/2 inches.

With Lead Thread

Flat Base		Curved Base		Lgth. in.	Ship. Wt. Lb. per 100
No.	Per 100	No.	Per 100		
1091	\$92.40	1090	\$100.40	5 1/2	209
1093	113.60	1092	123.10	6 1/2	219

With Spring Thread

No.	Per 100	No.	Per 100	Lgth. in.	Ship. Wt. Lb. per 100
1081	\$92.40	1080	\$100.40	5 1/2	198
1083	113.60	1082	123.10	6 1/2	208



Peirce Transformer Pins With 1-Inch Thread Hot Galvanized

Nos. 123 and 126 are used for running transformer leads from the line crossarm to transformer arm. May also be used on pole for lamp leads, or for attaching any wires which are not subjected to line strains.
Screw: No. 22x2 inches.

Presteel Type

Fitted with 5/8-inch hole for insertion of screwdriver for tightening.

No.	Spring Thread	Lead Thread
No.	122	123
Per 100.....	\$55.30	55.30
Length Above Shoulder inches	4 3/4	4 3/4
Length Overall..... inches	6 3/4	6 3/4
Diameter Base..... inches	2 1/2	2 1/2
Shipping Weight per 100.... lb.	91	110



No. 123

Forged Steel Type

Has square shoulder.

No.	Spring Thread	Lead Thread
No.	125	126
Per 100.....	\$55.30	55.30
Length Above Shoulder inches	5	5
Length Overall..... inches	7	7
Diameter Base..... inches	2	2
Shipping Weight per 100.... lb.	110	130



No. 126

Peirce 1-Inch Drop-Forged Clamp Pins

Hot Galvanized

May be used at angles in the line when assembled with a crossarm reinforcing plate.

On straight line runs the pin is used without the plate and is prevented from canting by two 1/4-inch lugs. Mounting slots are for 1/2-inch diameter crossarm straps.

Size of crossarm, 4x5 inches and smaller.

Pin height above arm, 4 3/4 inches.

No.	1-Inch Spring Thread	1-Inch Lead Thread
No.	4410	4420
Per 100.....	\$82.60	82.60
Shipping Weight per 100..... pounds	155	175



Peirce Wide Base Clamp Pins

For 1-Inch Pin Hole

Hot Galvanized

Designed for angle and corner construction.

Each pin is forged from a single piece of hot rolled open hearth steel. The broad base rests evenly on the arm and prevents pin from cutting into the wood, while the four lugs hold the pin from twisting on the crossarm.

Pins are used with 5/8-inch crossarm straps.

Pin height above arm, 5 3/4 inches.



No. 4320

Peirce Drop-Forged Crossarm Straps

Hot Galvanized

For Side Arm Mounting

For attaching clamp pins.

Designed with the spread equal to the larger dimension of the arm.

Thread length is 2 inches.



Light Type

No.	Per 100	Size of Arm Inches	SIZE STRAP, INCHES				Ship. Wt. Lb. per 100
			Spread	Lgth.	Flat Section	Round Section	
1001	\$44.90	3 1/4 x 4 1/4	4 1/4	5	3/16 x 1 1/8	1/2	103
1002	48.40	3 1/2 x 4 1/2	4 1/2	5 1/4	3/16 x 1 1/8	1/2	108
1003	51.80	3 3/4 x 4 3/4	4 3/4	5 1/2	3/16 x 1 1/8	1/2	112
1004	55.30	4 x 5	5	5 3/4	3/16 x 1 1/8	1/2	121

Heavy Type

2001	\$50.40	3 1/4 x 4 1/4	4 1/4	5	1/4 x 1 3/8	5/8	145
2002	55.00	3 1/2 x 4 1/2	4 1/2	5 1/4	1/4 x 1 3/8	5/8	152
2003	59.60	3 3/4 x 4 3/4	4 3/4	5 1/2	1/4 x 1 3/8	5/8	158
2004	64.10	4 x 5	5	5 3/4	1/4 x 1 3/8	5/8	165

For Mounting on Top or Bottom of Arm

Similar to the crossarm straps listed above except that the spread is equal to the smaller dimension of the arm.

Thread length is 2 inches.



Light Type

1871	\$45.00	3 1/4 x 4 1/4	3 1/4	6	3/16 x 1 1/8	1/2	103
1872	48.40	3 1/2 x 4 1/2	3 1/2	6 1/4	3/16 x 1 1/8	1/2	108
1873	51.90	3 3/4 x 4 3/4	3 3/4	6 1/2	3/16 x 1 1/8	1/2	112
1874	55.40	4 x 5	4	6 3/4	3/16 x 1 1/8	1/2	121

Heavy Type

1881	\$51.00	3 1/4 x 4 1/4	3 1/4	5 3/8	1/4 x 1 3/8	5/8	145
1882	55.60	3 1/2 x 4 1/2	3 1/2	5 5/8	1/4 x 1 3/8	5/8	152
1883	60.20	3 3/4 x 4 3/4	3 3/4	5 7/8	1/4 x 1 3/8	5/8	158
1884	64.90	4 x 5	4	6 1/8	1/4 x 1 3/8	5/8	165

With Lead and Pressed Metal Threads

Lead Thread Flat Base No.	Curved Base No.	Pressed Metal Thread Flat Base No.	Curved Base No.	Per 100	Size of Crossarm Inches	Ship. Wt. Lb. per 100
4320	4220	4320-P	4220-P	\$126.70	3 1/4 x 4 1/4	405
4321	4221	4321-P	4221-P	126.70	3 1/2 x 4 1/2	405
4322	4222	4322-P	4222-P	151.50	3 3/4 x 4 3/4	475
4323	4223	4323-P	4223-P	151.50	4 x 5	475

With Spring Thread

Flat Base No.	Curved Base No.	Per 100	Size of Cross Arm Inches	Ship. Wt. Lb. per 100
4310	4210	\$126.70	3 1/4 x 4 1/4	385
4311	4211	126.70	3 1/2 x 4 1/2	385
4312	4212	151.50	3 3/4 x 4 3/4	455
4313	4213	151.50	4 x 5	455

Peirce Crossarm Reinforcing Plates

Hot Galvanized

Used on angles and corners of lines as a reinforcement to clamp pins.

Holds the pin rigid under strains of 1200 pounds in any direction.

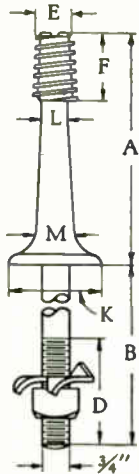
Used in connection with crossarm straps as listed in table.



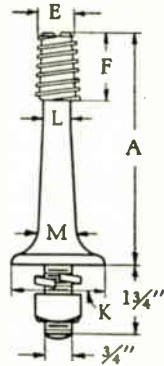
No. 5072

Flat Top Arm No.	Roofed Top Arm No.	Per 100	Size of Arm Inches	Use Cross-Arm Strap No.	Ship. Wt. Lb. per 100
5071	5081	\$32.80	3 1/4 x 4 1/4	1001	110
5072	5082	33.40	3 1/2 x 4 1/2	1002	116
5073	5083	34.90	3 3/4 x 4 3/4	1003	122
5074	5084	35.20	4 x 5	1004	128
5075	5085	32.80	3 1/4 x 4 1/4	2001	110
5076	5086	33.40	3 1/2 x 4 1/2	2002	116
5077	5087	34.90	3 3/4 x 4 3/4	2003	122
5078	5088	35.20	4 x 5	2004	128

Peirce Forged Steel Pins
Tapered Body—Lead Thread
Hot Galvanized



Long Shank Type



Short Shank Type

Designed to carry the full strength of the pin body to the top regardless of the length. Under excessive strain where a yielding of the pin occurs, it will be found to take place in a uniform manner indicating the absence of any weak spots. The yield also occurs below the pin threads eliminating all danger of insulator fracture from this cause.

Lead threads are securely bonded to the steel and carefully formed to meet insulator manufacturers' standards. There are no troublesome fins or mold marks to hinder insulator installation or to cause imperfect seating of the insulator. Lead tops are recessed to prevent localized pressure on the insulator top when it is turned down too tightly. This feature eliminates popping off insulator tops. Base diameters insure proper bearing on the arm for maximum resistance to strain.

Made solid, of one-piece forgings. There are no joints, seams, or weak spots.

Pins are furnished with lock washers. Add letter P to Nos. to obtain the same style pin with pressed metal threads.

Long Shank for Wood Arms
1-Inch Lead Threads

No.	Per 100	DIMENSIONS, INCHES							Ship. Wt. Lb. per 100	
		A	B	D	E	F	K	L		M
5704	\$130.80	4	5 1/2	1 3/4	1	1 3/4	2 1/2	3/4	1 3/16	240
5708	137.10	5	5 1/2	1 3/4	1	1 3/4	2 1/2	3/4	7/8	261
5712	143.80	6	5 1/2	1 3/4	1	1 3/4	2 1/2	3/4	15/16	293

1 1/8-Inch Lead Threads

5724	\$164.60	6	7	3	1 3/8	2 1/8	3	1 1/8	1 3/32	506
5726	169.60	7	7	3	1 3/8	2 1/8	3	1 1/8	1 11/32	528
5728	177.10	8	7	3	1 3/8	2 1/8	3	1 1/8	1 13/32	568
5730	202.80	9	7	3	1 3/8	2 1/8	3 1/2	1 1/8	1 15/32	710
5732	211.50	10	7	3	1 3/8	2 1/8	3 1/2	1 1/8	1 17/32	741
5734	226.10	11	7	3	1 3/8	2 1/8	3 3/4	1 1/8	1 19/32	924
5736	239.50	12	7	3	1 3/8	2 1/8	3 3/4	1 1/8	1 21/32	959
5738	253.40	13	7	3	1 3/8	2 1/8	3 3/4	1 1/8	1 23/32	1060

Short Shank for Steel Arms
1-Inch Lead Threads

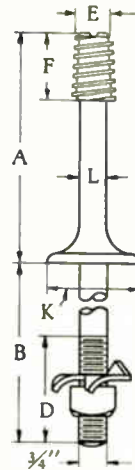
No.	Per 100	DIMENSIONS, INCHES					Ship. Wt. Lb. per 100	
		A	E	F	K	L		M
5703	\$130.80	4	1	1 3/4	2 1/2	3/4	1 3/16	205
5707	137.10	5	1	1 3/4	2 1/2	3/4	7/8	219
5711	143.80	6	1	1 3/4	2 1/2	3/4	15/16	233

1 1/8-Inch Lead Threads

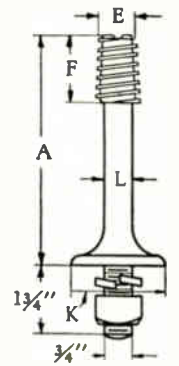
5723	\$164.60	6	1 3/8	2 1/8	3	1 1/8	1 3/32	420
5725	169.60	7	1 3/8	2 1/8	3	1 1/8	1 11/32	456
5727	177.10	8	1 3/8	2 1/8	3	1 1/8	1 13/32	526
5729	202.80	9	1 3/8	2 1/8	3 1/2	1 1/8	1 15/32	616
5731	211.50	10	1 3/8	2 1/8	3 1/2	1 1/8	1 17/32	666
5733	226.10	11	1 3/8	2 1/8	3 3/4	1 1/8	1 19/32	773
5735	239.50	12	1 3/8	2 1/8	3 3/4	1 1/8	1 21/32	871
5737	253.40	13	1 3/8	2 1/8	3 3/4	1 1/8	1 23/32	915

Special pins for insulators having 1 1/2-inch pin hole can be furnished.

Peirce Forged Steel Pins
Tapered Body—Steel Thread for Separable Thimble
Hot Galvanized



Long Shank Type



Short Shank Type

Designed for thimbles or for insulators with thimbles cemented in them.

Full strength is carried to the top of the pin regardless of height above the arm. Base diameters insure proper bearing on the arm for maximum resistance to strain.

It is general practice for some engineers to specify insulators with cemented-in thimbles in which case the assembly is screwed on the pin with no preliminary work. If it is preferred to buy thimbles and insulators separately, No. 5151 thimble is used on pin Nos. 5605 to 5612 and Nos. 5603 to 5611, inclusive. No. 5052 thimble is used on pin Nos. 5624 to 5638 and Nos. 5623 to 5637 inclusive. Insulators for these assemblies should have 1 and 1 1/8-inch pin holes respectively.

Pins are furnished with lock washers.

Long Shank for Wood Arms

No.	With Thimble per 100	Without Thimble per 100	DIMENSIONS, INCHES							Ship. Wt. Lb. per 100	
			A	B	D	E	F	K	L		M
5604	\$130.80	\$105.10	4	5 1/2	1 3/4	3/4	1 3/4	2 1/2	3/4	1 3/16	227
5608	137.10	111.40	5	5 1/2	1 3/4	3/4	1 3/4	2 1/2	3/4	7/8	243
5612	143.80	118.10	6	5 1/2	1 3/4	3/4	1 3/4	2 1/2	3/4	15/16	270

1 1/8-Inch Steel Threads

5624	\$164.60	\$135.80	6	7	3	1 1/8	2 1/8	3	1 1/8	1 3/32	444
5626	169.60	140.80	7	7	3	1 1/8	2 1/8	3	1 1/8	1 11/32	484
5628	177.10	148.30	8	7	3	1 1/8	2 1/8	3	1 1/8	1 13/32	528
5630	202.80	174.00	9	7	3	1 1/8	2 1/8	3 1/2	1 1/8	1 15/32	644
5632	211.50	182.70	10	7	3	1 1/8	2 1/8	3 1/2	1 1/8	1 17/32	709
5634	226.10	197.30	11	7	3	1 1/8	2 1/8	3 3/4	1 1/8	1 19/32	798
5636	239.50	210.70	12	7	3	1 1/8	2 1/8	3 3/4	1 1/8	1 21/32	872
5638	253.40	224.60	13	7	3	1 1/8	2 1/8	3 3/4	1 1/8	1 23/32	923

Short Shank for Steel Arms

No.	With Thimble per 100	Without Thimble per 100	DIMENSIONS, INCHES					Ship. Wt. Lb. per 100	
			A	E	F	K	L		M
5603	\$130.80	\$105.10	4	3/4	1 3/4	2 1/2	3/4	1 3/16	169
5607	137.10	111.40	5	3/4	1 3/4	2 1/2	3/4	7/8	188
5611	143.80	118.10	6	3/4	1 3/4	2 1/2	3/4	15/16	224

1 1/8-Inch Steel Threads

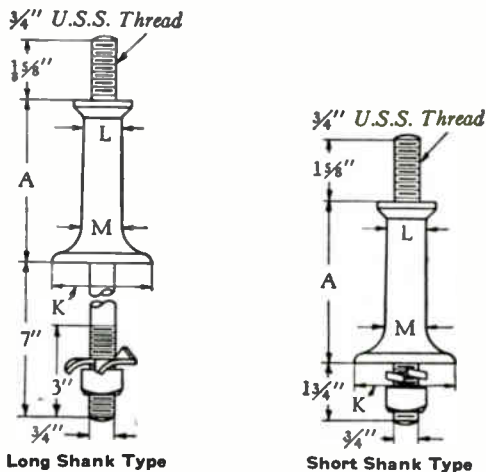
5623	\$164.60	\$135.80	6	1 1/8	2 1/8	3	1 1/8	1 3/32	348
5625	169.60	140.80	7	1 1/8	2 1/8	3	1 1/8	1 11/32	389
5627	177.10	148.30	8	1 1/8	2 1/8	3	1 1/8	1 13/32	468
5629	202.80	174.00	9	1 1/8	2 1/8	3 1/2	1 1/8	1 15/32	543
5631	211.50	182.70	10	1 1/8	2 1/8	3 1/2	1 1/8	1 17/32	609
5633	226.10	197.30	11	1 1/8	2 1/8	3 3/4	1 1/8	1 19/32	677
5635	239.50	210.70	12	1 1/8	2 1/8	3 3/4	1 1/8	1 21/32	710
5637	253.40	224.60	13	1 1/8	2 1/8	3 3/4	1 1/8	1 23/32	823

Special pins for insulators having 1 1/2-inch pin hole can be furnished.

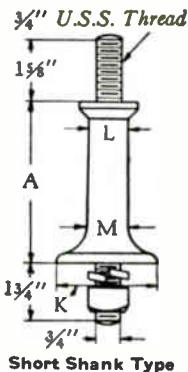
Peirce Forged Steel Pins

Tapered Thread— $\frac{3}{4}$ -Inch U.S.S. Thread for Separable Thimble

Hot Galvanized



Long Shank Type



Short Shank Type

Fitted at the top with a wide shoulder for a thimble seat and a $\frac{3}{4}$ -inch U.S.S. machine threaded stud. The entire pin is a one-piece forging with no seams, joints, or weak spots.

By applying various thimbles or adaptors to this pin it can be made to suit almost any desirable purpose in the high tension pin field. The following suggestions are an indication of this versatility:

No. 5017 thimble adapter will provide a 1-inch lead thread.

No. 5018 thimble adapter will provide a $1\frac{1}{8}$ -inch lead thread.

No. 5059 adapter will provide a $5\frac{1}{4}$ -inch extension above the shoulder with a 1-inch lead thread.

No. 5059 adapter with No. 5023 thimble adapter will provide the $5\frac{1}{4}$ -inch extension with a $1\frac{1}{8}$ -inch lead thread.

No. 5021 is a malleable iron thimble for cementing into insulators and threaded to fit the No. 4100 series pins.

No. 5019 adapter is for adapting the pin top to zinc thimbles on which $1\frac{1}{8}$ -inch insulators may be used.

Pins are furnished with lock washers.

Long Shank for Wood Arms

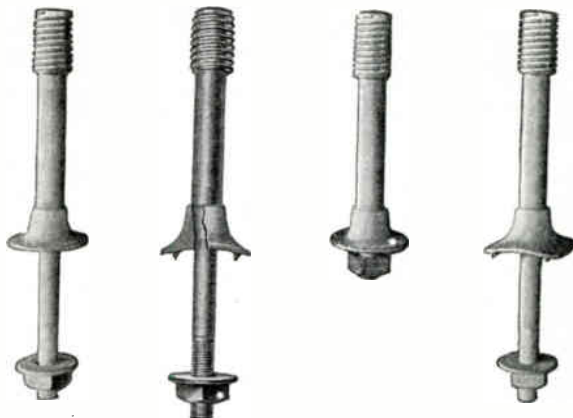
No.	With Thimble Per 100	Without Thimble Per 100	DIMENSIONS, INCHES				Shipping Weight Pounds per 100
			A	K	L	M	
4124	\$191.40	\$150.40	3 $\frac{1}{2}$	3	1 $\frac{1}{8}$	1 $\frac{13}{32}$	432
4126	198.40	157.40	4 $\frac{1}{2}$	3 $\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{11}{32}$	498
4128	207.30	166.30	5 $\frac{1}{2}$	3 $\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{13}{32}$	562
4130	236.10	195.20	6 $\frac{1}{2}$	3 $\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{15}{32}$	616
4132	246.70	205.70	7 $\frac{1}{2}$	3 $\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{17}{32}$	676
4134	266.00	226.00	8 $\frac{1}{2}$	4 $\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{9}{16}$	850
4136	280.00	239.00	9 $\frac{1}{2}$	4 $\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{5}{8}$	913
4138	296.00	255.60	10 $\frac{1}{2}$	4 $\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{11}{16}$	1090

Short Shank for Steel Arms

4123	\$162.60	\$121.60	3 $\frac{1}{2}$	3	1 $\frac{1}{8}$	1 $\frac{9}{32}$	352
4125	169.40	128.40	4 $\frac{1}{2}$	3 $\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{11}{32}$	412
4127	178.10	137.10	5 $\frac{1}{2}$	3 $\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{13}{32}$	476
4129	207.40	166.60	6 $\frac{1}{2}$	3 $\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{15}{32}$	531
4131	217.50	176.50	7 $\frac{1}{2}$	3 $\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{17}{32}$	594
4133	236.10	195.20	8 $\frac{1}{2}$	4 $\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{9}{16}$	770
4135	251.00	210.00	9 $\frac{1}{2}$	4 $\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{5}{8}$	830
4137	267.60	226.60	10 $\frac{1}{2}$	4 $\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{11}{16}$	1000

Hubbard-O-B Crossarm Pins

Hot Galvanized



Pins have bases designed to give 100 per cent contact area with the top of the arm, developing the full strength of the wood area involved, and extra strength in the shanks which pass through the crossarm.

The body portion is made of high grade cold drawn steel. A conical section fits into a corresponding socket in the forged steel base, as illustrated by the cut-away view, the two parts acting as a unit under load. Obtainable with permanent bond lead threads and separable cut steel thimbles.

Complete tabulations covering pins for roofed and flat top arms and flat steel arms sent upon request.

Peirce Lead Thread Thimble Adapters

For Pin Threads without Taper

No. 5020 is thimble No. 5051 with a lead thread cast over it to screw into standard 1-inch pin holes.



No. 5025 is No. 5052 thimble with a lead thread cast over it to screw into standard $1\frac{1}{8}$ -inch pin holes.

No.	5020	5025
Per 100	\$40.90	\$49.00
Diam. Overall	1 in.	1 $\frac{1}{8}$ in.
Inside Root of Thread	2 $\frac{1}{32}$ in.	1 $\frac{1}{8}$ in.
Length	2 $\frac{1}{8}$ in.	2 $\frac{1}{2}$ in.
Fits Over Pin Thread	3 $\frac{1}{4}$ in.	1 $\frac{1}{8}$ in.
Ship. Wt. per 100	65 lb.	77 lb.

Hubbard Lead Thread Thimble Adapters

Hot Galvanized

Fitted with lead threads and broad shoulders for use on pins or bolts.

Nos. 5058 and 5059 are specially designed with sufficient extension for insulator clearance when used on bolt ends. They seat against the pole or crossarm in this case and are popular for rural line construction.



No.	Per 100	Std. Ins. Thrd. Size In.	Diam. Mch. Screw Thrd. In.	For Max. Stud Lgth. In.	Over-All Lgth. In.	Ship. Wt. per 100 lb.
5016	\$64.40	1	5 $\frac{5}{8}$	1 $\frac{3}{4}$	2 $\frac{1}{4}$	66
5017	64.40	1	3 $\frac{3}{4}$	1 $\frac{3}{4}$	2 $\frac{1}{4}$	66
5018	64.40	1 $\frac{3}{8}$	3 $\frac{3}{4}$	2	3 $\frac{1}{8}$	143
5058	82.90	1	5 $\frac{5}{8}$	2 $\frac{7}{8}$	5 $\frac{1}{4}$	165
5059	82.90	1	3 $\frac{3}{4}$	2 $\frac{7}{8}$	5 $\frac{1}{4}$	165

No. 5019 Peirce Adapters for Zinc Thimbles

Hot Galvanized

Provides a method for using insulators in which Peirce Drawn Zinc Separable Thimbles are cemented on old lines equipped with cast iron separable thimble pins.

The outside of the adapter is threaded to fit a $1\frac{1}{2}$ -inch Peirce Drawn Separable Thimble, the inside is tapped for a standard $\frac{3}{4}$ -inch center bolt.

Serrated portion: Top o.d., $1\frac{1}{8}$ inches; bottom o.d., $1\frac{1}{8}$ inches. Diameter of machine screw thread, $\frac{3}{4}$ inch. For maximum stud length, 2 inches. Overall length, 3 inches.

Shipping weight per 100, 98 pounds.
No. 5019.....per 100 \$40.90

Peirce Crossarm Saddles
Hot Galvanized
Presteel Type



Used in adapting a roofed top arm to a flat base pin. Fits the curve of the arm and presents a broad, flat area as a seat for the pin base.

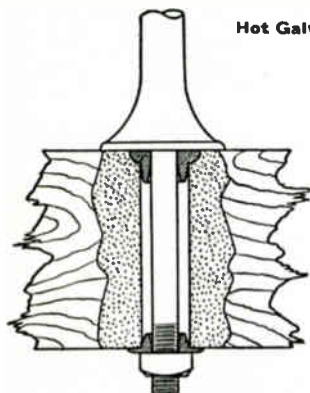
No.	Per 100	Width of Crossarm Inches	Diameter Pin Hole Inches	Shipping Weight Pounds per 100
5001	\$23.40	3 1/4	1 3/16	104
5002	26.70	3 1/2	1 3/16	114
5003	28.10	3 3/4	1 3/16	124
5004	29.30	4	1 3/16	134
5005	35.60	5	1 3/16	144
5011	23.40	3 1/4	1 1/16	104
5012	26.70	3 1/2	1 1/16	114
5013	28.10	3 3/4	1 1/16	124
5014	29.10	4	1 1/16	134
5015	35.60	5	1 1/16	144

No. 5008—Malleable Iron Type



Crossarm is made in all widths. Diameter of pin hole, 1 3/16 inch. Shipping weight per 100, 109 pounds. No. 5008 per 100 \$44.20

Hubbard Centering Washers



Hot Galvanized

Used on stock cross arms which have been drilled for wood pins, to adopt washer to smaller shanks of steel pins. Top centering washer designed to draw down into pin hole when pin is tightened on arm, leaving top surface clear for pin base. May be used on either flat or roofed arms.

Top centering washer may also be used on bottom of arm if a standard flat washer is placed between it and nut.

Malleable Iron Bottom Centering Washers



No.	Per 100	DIAM. PIN HOLE, IN. In Arm	O.D. Washer Inches	Shipping Wt. Lb. per 100	
5027	\$20.90	1 1/2	1 1/16	2 1/2	33
5028	20.90	1 1/4	1 3/16	2 1/2	33

Malleable Iron Top Centering Washers



Provided with wings which are drawn into wood as a means of preventing turning and to provide a more solid installation.

No.	Per 100	DIAM. PIN HOLE, IN. In Arm	O.D. Washer Inches	Shipping Wt. Lb. per 100	
72237	\$20.90	1 1/2	1 1/16	1 1/2	37
72225	20.90	1 1/2	1 3/16	1 1/2	44

Pressed Steel Bottom Centering Washers

No. 5032 is used in conjunction with a standard flat washer.



No.	Per 100	DIAM. PIN HOLE, IN. In Arm	O.D. Washer Inches	Shipping Wt. Lb. per 100	
5030	\$23.20	1 1/4	1 3/16	2 1/16	34
5031	23.20	1 1/4	1 1/16	2 1/16	34
5032	23.20	1 1/2	1 3/16	2 1/16	34
5033	23.20	1 1/2	1 1/16	2 1/16	34
5029	23.20	2	1 3/16	2 1/8	39

Forged Steel Bottom Centering Washers



No.	Per 100	DIAM. PIN HOLE, IN. In Arm	O.D. Washer Inches	Shipping Wt. Lb. per 100	
72238	\$23.10	1 1/2	2 1/32	3 3/4	87
70346	23.10	1 1/2	2 3/32	3 3/4	87

Hubbard Solid Steel Pole Top Pins

Hot Galvanized



With two holes at right angles to permit alternate use for lining up insulator grooves.

Bolts must be ordered separately.

Nos. 3152 and 4152 include a square washer and nut. No. 4152 also includes a 5 1/2 x 3 1/4-inch curved plate washer.

When ordering machine bolts, allow an extra inch for the pin in order to equal the eye bolt which is measured under the eye.

Furnished in mild. open hearth steel.

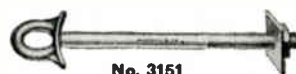
No.	1 3/8-Inch Lead Thread		*1 1/2-Inch Metal Thread		†1 3/4-Inch Stud		Over-All Lgth. In.	Diam. Pin Body In.	Recom- mended Hole Spacing
	Per 100	Ship. Wt. Lb. per 100	No.	Wt. Lb. per 100	No.	Wt. Lb. per 100			
3118	\$136.30	634	3218	614	...	...	18	1	8
3120	151.40	660	3220	640	3420	660	20	1	8
3122	179.00	686	3222	666	...	...	22	1	8
3124	190.70	711	3224	791	3424	711	24	1	8
3125	215.60	770	3225	750	3425	770	24	1 1/8	8
3127	230.80	833	3227	813	...	...	26	1 1/8	10
3129	246.20	896	3229	876	...	...	28	1 1/8	10
3131	261.40	957	3231	937	3431	957	30	1 1/8	10
3133	278.30	1056	3233	1036	...	...	33	1 1/8	10
3137	295.10	1155	3237	1135	3437	1155	36	1 1/8	10

*For zinc thimble.

†For malleable iron thimble.

‡Prices upon application.

Eye Bolts for Pole Top Pins



No. 3151



No. 4151

Shoulder Type Washer Type

With 1-Inch Pin Body, No.	3149	3151	3153	4149	4151	4153
With 1 1/8-Inch Pin Body, No.	3150	3152	3154	4150	4152	4154
Per 100	\$53.00	55.30	57.50	52.90	55.00	57.20
Lgth. Under Eye . . . in.	10	12	14	10	12	14
Diameter in.	5/8	5/8	5/8	5/8	5/8	5/8
Lgth. Thread in.	4	4	4	4	4	4
Ship. Wt. per 100 . . lb.	158	176	198	158	176	198

Hubbard Low Voltage Ridge Irons

Hot Galvanized



Fastened to the pole by four 1/2-inch lag screws, the holes for which are staggered to prevent splitting the pole top.

Short shank pins can be used with a shank diameter of 1/2-inch for No. 9407, 5/8-inch for No. 9408, and 3/4-inch for No. 9409.

No.	Per 100	Steel Size In.	Ht. In.	Pole Diam. In.	Width Top In.	Pin Hole Diam. In.	Ship. Wt. Lb. per 100
9407	\$62.50	2 1/4 x 9 Ga.	7	6	2 1/16	3/16	154
9408	98.90	3/16 x 2 3/4	8	7	3 1/2	1 1/16	308
9409	122.00	1/4 x 2 3/4	8 1/4	7	4 1/8	1 3/16	440

Peirce Standard Presteel Pole Top Pins

Hot Galvanized

Made from No. 9 gage sheet steel, pressed to a channel shape measuring $1\frac{3}{4} \times 1\frac{1}{8}$ inches.

Lead Thread Type

No.	Per 100	Lgth. Over-All In.	Hole Spacing In.	Diam. Thrd. In.	Ship. Wt. per 100 Lb.
3034	\$120.40	18	8	1	319
3039	132.70	18	8	1 $\frac{3}{8}$	409
3044	164.00	24	8	1	424
3049	176.10	24	8	1 $\frac{3}{8}$	506

Spring Thread Type

3040	\$120.40	18	8	1	319
3045	164.00	24	8	1	434

Separable Zinc Thimble Type

No.	With Thimble per 100	With out Thimble per 100	Lgth. All In.	Hole Spacing In.	Diam. Thrd. In.	For Thimble No.	Ship. Wt. Lb.
3042	\$120.40	\$94.70	18	8	$\frac{3}{4}$	5051	303
3043	132.70	103.90	18	8	1 $\frac{1}{8}$	5052	314
3047	164.00	138.30	24	8	$\frac{3}{4}$	5051	423
3048	176.10	147.30	24	8	1 $\frac{1}{8}$	5052	448

Peirce Pole Top Pins

Hot Galvanized

For higher voltage lines, extra heavy pipe pins are often used because of their high strength and light weight. They offer a considerable extension above the pole top.

Mounting holes are $\frac{1}{16}$ inch in diameter.

If it is desired to mount these pins by means of the pipe supporting fixtures listed below, specify pins with bottom mounting hole only.

1 $\frac{1}{8}$ -Inch Lead Thread

No.	Per 100	Lgth. In.	Nom. Size Pipe, In.	Hole Spacing In.	Ship. Wt. per 100 Lb.
3070	*	18	1 $\frac{1}{4}$	8	385
3071	\$246.90	18	1 $\frac{1}{2}$	8	503
3073	299.40	24	1 $\frac{1}{2}$	8	908
3075	*	28	1 $\frac{1}{2}$	8	985
3076	514.10	28	2	8	1207
3077	*	32	1 $\frac{1}{2}$	10	1040
3078	*	32	2	10	1391
3079	*	36	2	10	1576
†3093	*	22 $\frac{1}{2}$	1 $\frac{1}{2}$	8	908

No. 3079

* $\frac{1}{32}$ -Inch Metal Thread

No.	Ship. Wt. per 100 Lb.	No.	Ship. Wt. per 100 Lb.	Lgth. In.	Nom. Size Pipe, In.	Hole Spacing In.
3060	385	3080	385	18	1 $\frac{1}{4}$	8
3061	503	3081	503	18	1 $\frac{1}{2}$	8
3063	908	3083	908	24	1 $\frac{1}{2}$	8
3065	985	3085	985	28	1 $\frac{1}{2}$	8
3066	1207	3086	1207	28	2	8
3067	1040	3087	1040	32	1 $\frac{1}{2}$	10
3068	1391	3088	1391	32	2	10
3069	1576	3089	1576	36	2	10

Pipe pins without top mounting hole for use with supporting fixtures can be furnished when specified.

*Prices upon application.

†With 5-in. offset; provides an insulator separation of 10 inches plus the pole top diameter.

‡For zinc thimble No. 5052.

§For malleable iron thimble No. 5021.

Peirce Pipe Pin Supporting Fixtures

Hot Galvanized

Provides great ultimate pin strength due to the elimination of the one mounting hole and the broad surface over which fixture binds the pin. The 1 $\frac{1}{2}$ and 2-inch sizes furnished in extra heavy pipe.

No.	3090	3091	3092
Per 100	\$33.50	34.20	49.90
Nominal Size Pipe Pin..... inches	1 $\frac{1}{2}$	1 $\frac{1}{2}$	2
Bolt Hole..... inches	1 $\frac{1}{16}$	1 $\frac{1}{16}$	1 $\frac{1}{16}$
Shipping Weight per 100... pounds	61	73	89

Hubbard Insulated Clevises

Hot Galvanized

No. 1342

A standard, flat steel type clevis for mounting on a through bolt or an insulator bolt. Designed for $\frac{5}{8}$ -inch bolts. Uses the standard No. 355 dry process insulator for low voltage lines. Oval mounting hole, $1\frac{1}{16} \times \frac{3}{4}$ inches.

Shipping weight, 253 pounds per 100.



No. 1342, with Insulators.....per 100 \$59.00

Nos. 1341 and 1343

Uses the No. 1606 dry process insulator.

These clevises are similar except for the attachment hole. No. 1341 has oval hole for $\frac{5}{8}$ -inch bolts; No. 1343 has round hole for $\frac{1}{2}$ -inch bolts.

Shipping weight, 154 pounds per 100.



No. 1343

No.	1341	1343
With Insulators.....per 100	\$47.40	47.40
Mounting Hole.....inches	$1\frac{1}{16} \times \frac{3}{4}$ Oval	$\frac{1}{2}$ Round

No. 1339

Popular for rural construction. Has sufficient conductor clearance for low or medium voltage lines.

Uses No. 1608 wet process insulator.

Oval mounting hole, $1\frac{1}{16} \times \frac{3}{4}$ inches.

Shipping weight, 165 pounds per 100.

No. 1339, with Insulators.....per 100 \$53.40



No. 1340

This clevis has a higher flash-over rating than the No. 1339. Used where high mechanical strength is desirable as well as electrical efficiency.

Furnished in $\frac{3}{16} \times \frac{1}{2}$ -inch steel with $\frac{5}{8}$ -inch diameter cotter bolt. Uses No. 1609 wet process insulator. Oval mounting hole, $1\frac{1}{16} \times \frac{3}{4}$ inches.

Shipping weight, 288 pounds per 100.

No. 1340, with Insulators.....per 100 \$63.60



No. 1330

Used extensively on medium voltage lines for corner or dead-end attachments. Especially for 4000-volt primaries.

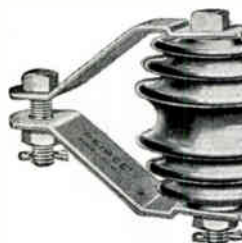
The $\frac{5}{8}$ -inch attachment bolt is designed for fastening on eye or hook bolts. Pole mounting bolts not included. With lead sleeve on insulator bolt at extra cost.

Uses No. 1613 wet process insulator.

Machine mounting bolt, $\frac{3}{8} \times 2\frac{3}{8}$ inches.

Shipping weight, 572 pounds per 100.

No. 1330, with Insulators.....per 100 \$145.10



No. 1344

Designed for through bolt or crossarm bolt mounting. Similar to No. 1330 clevis shown above.

Mounting bolts are not included. With lead sleeve on insulator at extra cost.

Uses No. 1613 wet process insulator.

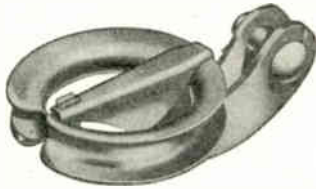
Oval mounting hole, $1\frac{1}{16} \times \frac{3}{4}$ inches.

Shipping weight, 550 lbs. per 100.

No. 1344, with Insulators.....per 100 \$128.60



No. 674 Hubbard Open Side Thimble Clevises



Designed to eliminate the difficulties of line threading. Intended for angle work from 30° to 60°; can be used for lesser angles if desired.

Tie-wires can be used safely without danger of crystallization.

Side wire groove, 3/4 inch; diameter of thimble, 3 1/4 inches. Length overall, 6 5/8 inches.
No. 674, Shipping Weight 145 Pounds.....per 100 **\$90.10**

Hubbard Insulated Clevises

Hot Galvanized

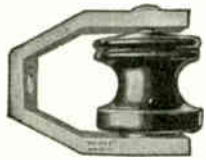
No. 561

Formed of 1 1/2 x 3/16-inch channel steel. A sturdy dead-end or corner attachment.

Used with No. 355 dry process insulator for low voltage lines.

Oval mounting hole, 1 1/16 x 25/32 inches. Shipping weight, 242 pounds per 100.

No. 561, with Insulators.....per 100 **\$64.70**



Nos. 641

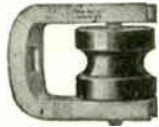
Formed of channel steel.

Has 1 1/16-inch square mounting hole for 5/8-inch mounting bolts.

Uses No. 357 dry process insulator.

Shipping weight, 116 pounds per 100.

No. 641, with Insulators...per 100 **\$43.60**



No. 8820

Formed of flat steel.

Has 1 1/16-inch round mounting hole for 5/8-inch mounting bolts.

Uses No. 357 dry process insulator.

Shipping weight, 131 pounds per 100.

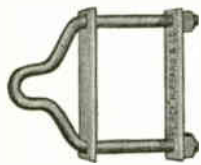
No. 8820, with Insulators..per 100 **\$52.60**



Peirce Crossarm Clevises

Hot Galvanized

For dead-ending line wires on single arms.



No.	Per 100	Cross-Arm In.	Diam. In.	Steel Plates In.	Wt. per 100 lb.	Ship. per 100
549	\$70.30	3 1/4 x 4 1/4	1/2	1/32 x 1 1/2	193	
550	73.70	3 1/2 x 4 1/2	1/2	1/32 x 1 1/2	198	
551	77.20	3 3/4 x 4 3/4	1/2	1/32 x 1 1/2	203	
552	80.70	4 x 5	1/2	1/32 x 1 1/2	209	

Hubbard Insulated Fork Bolts

Type No. 1

Hot Galvanized

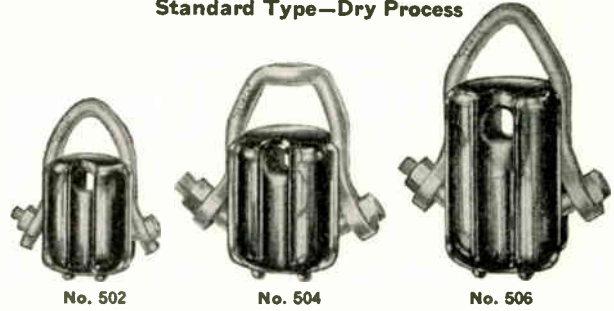


Equipped with insulator No. 357.

No.	8810	8811	8812	8813	8814	8815
Per 100	\$79.10	82.40	85.40	87.40	90.80	94.70
Length of Bolt						
.....in.	7 13/16	9 13/16	11 13/16	9 13/16	11 13/16	13 13/16
Diameter.....in.	1/2	1/2	1/2	5/8	5/8	5/8
Ship. Wt. per 100.....lb.	191	205	218	213	226	247

Peirce Porcelain Strain Insulators

Standard Type—Dry Process



Ordinarily used for dead-ending secondary circuits or guying.

Made with dimensions in accordance with recommended specifications of the Edison Electric Institute (N.E.L.A.). Sharp corners and edges have been eliminated.

The radius of bolt or wire hole gives maximum bearing surface on clevis bolt. It may be used with guy strand or insulated wire.

When ordering insulators and clevises not listed as being applicable to each other, or when fitting different makes of insulators on clevises, make certain that proper clearances are allowed.

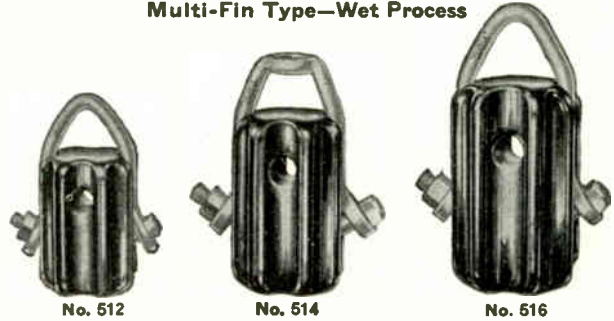
Clevises are not included with insulators.

No.	502	504	506
Per 100	\$44.40	55.10	90.20
Length Overall.....inches	3 1/4	3 3/4	5 1/4
Diameter Overall.....inches	2 5/8	2 7/8	3 3/8
Diameter Over Groove.....inches	1 7/8	2 1/8	2 3/8
Shipping Weight per 100.....pounds	128	158	299

Clevises Used With Insulators

Insulator No.	502	504	506
Heavy Double Type Clevis, No.....	782	785 1/2	789
Light Type Clevis, No.....	805	807 1/2	811 1/2
Heavy Type Clevis, No.....	825	827 1/2	831 1/2
Eye Type Clevis, No.....	845	847 1/2	851 1/2
Barmack Forged Type Clevis, No...	865	871	869
Light Double Type Clevis, No.....	882	885 1/2	889
Flexible Bale Type Clevis, No.....	1552	1554	1556

Multi-Fin Type—Wet Process



For dead-ending primary circuits or guying high tension lines. With rugged fins and well-rounded edges.

When Hubbard Clevises and Peirce Multi-Fin Strain Insulators are used together, clevis leg rides at bottom of groove where unequal strain is best absorbed.

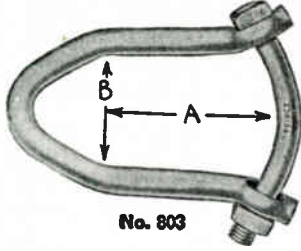
No.	512	514	516
Per 100	\$59.60	122.00	165.00
Length Overall.....inches	3 1/2	5 5/8	6 3/4
Diameter Overall.....inches	2 15/16	3 5/8	3 15/16
Diameter Over Groove.....inches	1 7/8	2 1/8	2 3/8
Shipping Weight per 100.....pounds	158	268	418

Clevises Used With Insulators

Insulator No.	512	514	516
Heavy Double Type Clevis, No.....	789	785 1/2	782
Light Type Clevis, No.....	812	808	805
Heavy Type Clevis, No.....	832	828	825
Eye Type Clevis, No.....	852	848	845
Barmack Forged Type Clevis, No..	869	871	865
Light Double Type Clevis, No.....	889	885 1/2	882
Flexible Bale Type Clevis, No.....	1556	1554	1552

Hubbard Strain Insulator Clevises

Hot Galvanized

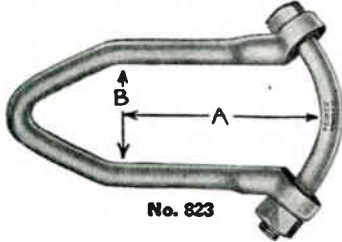


No. 803

Light Type

Drop-forged from $\frac{1}{16}$ -inch diameter open hearth steel. Ultimate strength, 8000 pounds. Has $\frac{3}{8}$ -inch bolt and lock washer.

A 1-inch inside diameter eye is required to accommodate this clevis.



No. 823

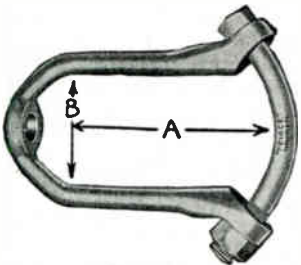
Heavy Type

Drop-forged from $\frac{1}{2}$ -inch diameter open hearth steel. Ultimate strength, 13,000 pounds. Has $\frac{1}{2}$ -inch bolt and lock washer.

A $1\frac{1}{2}$ -inch inside diameter eye is required to accommodate this clevis.

No.	Light Type		Heavy Type		Ship. Wt. Lb. per 100	DIMENSIONS INCHES	A	B	USED WITH HUBBARD STRAIN INSULATOR No.	
	Per 100	Ship. Wt. Lb. per 100	No.	Per 100					Dry Process	Wet Process
801	\$49.90	68	821	\$64.00	119	3	1 1/2	...	...
802	53.80	79	822	68.00	136	4	1 1/2	...	...
803	50.40	73	823	64.70	128	3	1 3/4	...	...
804	53.90	88	824	68.10	142	4	1 3/4	...	...
805	51.20	81	825	65.30	119	3	2	502	512	
806	55.30	91	826	69.50	140	4	2	...	...
807	55.20	80	827	69.40	132	3	2 1/4	...	...
807 1/2	55.80	84	827 1/2	69.90	136	3 1/2	2 1/4	504	...	
808	55.90	92	828	70.00	145	4	2 1/4	...	514	
808 1/2	57.80	101	828 1/2	71.60	149	4 1/2	2 1/4	...	...
809	59.80	110	829	73.80	159	5	2 1/4	...	...
810	53.40	84	830	90.50	140	3	2 1/2	...	...
811	55.90	93	831	69.90	151	4	2 1/2	...	...
811 1/2	60.10	100	831 1/2	72.00	156	4 1/2	2 1/2	506	...	
812	60.20	115	832	74.40	161	5	2 1/2	...	516	

Eye Type



No. 843

Similar to the heavy type shown above, except that this clevis has a drop-forged $\frac{1}{16}$ -inch diameter eye in the crotch. This eye permits clevis to be attached to head end of a through bolt, nut end of a through bolt, double arming bolt, eye bolt, or double arming eye bolt.

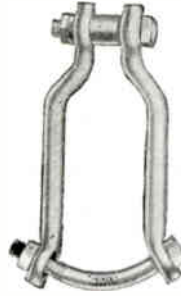
With $\frac{1}{2}$ -inch diameter curved clevis bolt and lock washer.

No.	Per 100	DIMENSIONS INCHES		A	B	USED WITH HUBBARD STRAIN INSULATOR No.		Ship. Wt. Lb. per 100
		Process	Process					
841	\$94.90	3	1 1/2	...	...	...	136
842	105.10	4	1 1/2	...	...	...	151
843	97.10	3	1 3/4	...	...	...	138
844	106.80	4	1 3/4	...	...	...	146
845	98.60	3	2	502	512	...	141	
846	108.20	4	2	...	...	...	150
847	100.20	3	2 1/4	...	...	...	145
847 1/2	102.90	3 1/2	2 1/4	504	...	...	150
848	111.70	4	2 1/4	...	514	...	153	
848 1/2	116.80	4 1/2	2 1/4	...	...	...	155
849	119.50	5	2 1/4	...	...	...	160
850	102.50	3	2 1/2	...	...	...	150
851	115.80	4	2 1/2	...	...	...	158
851 1/2	119.70	4 1/2	2 1/2	506	...	...	165
852	121.90	5	2 1/2	...	516	...	169	

Hubbard Strain Insulator Clevises

Barmack Drop-Forged Type (Patented)

Hot Galvanized



Designed to provide a strong and adjustable means for dead-ending wires. Will fit many sizes and types of strain insulators. Well adapted to dead-ending on steel work where the size of the attaching hole is too small to permit the use of the ordinary steel clevis. Also used to assemble two strain insulators in series.

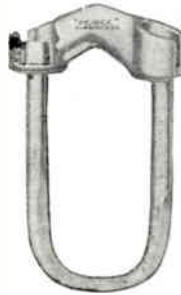
To assemble the split clevis place the two members into opposite grooves of insulator and estimate the spacing between parallel flat flanges of clevis. Insert curved bolt and screw nut on until above spacing is obtained. Then securely fasten assembly to eyelet or

steel structure with the $\frac{1}{2}$ -inch bolt.

No.	861	865	869	871
Per 100	\$66.20	84.40	89.60	84.40
Inside Length	3	4	5	4
Inside Width	1 1/2	2	2 1/2	2 1/4
Shipping Weight per 100 pounds	103	114	126	115

Copper Bail Single Type

Hot Galvanized Yoke



No. 1535 clevis was designed to meet the demand for a boltless clevis, one easy to assemble with the insulator and with a bail made of soft metal (copper) to distribute strain over entire bearing surface of insulator.

Drop-forged yoke may be used through eye of a standard $\frac{3}{8}$ -inch eye bolt, No. 7502 eye nut, or No. 7515 bolt eye.

Diameter of head of copper bail, $\frac{3}{4}$ inch.

No. 1533 is similar to No. 1535 except that each end is threaded $\frac{1}{16}$ -inch diameter and fitted with nut which traps in the yoke.

No.	1533	1535
Per 100	\$156.90	156.90
Inside Length	3 5/8 - 4 3/16	5 3/8
Inside Width	1 7/8	2 3/4
For Use with Hubbard Insulator No.	502, 512	...
Shipping Weight per 100	155	165

Standard Double Type

Hot Galvanized

Light Type

Made from $\frac{1}{16}$ -inch round steel with $\frac{3}{8}$ -inch curved bolts.

No.	Per 100	Inside Lgth. In.	Inside Width In.	Used With Insulator No.	Ship. Wt. Lb. per 100
881	\$82.50	8	1 1/2	...	136
882	85.80	8	2	502 or 512	139
882 1/2	89.10	8	2 1/4	504	140
883	89.10	8	2 1/2	...	141
884	95.40	10	1 1/2	...	155
885	100.40	10	2	502 or 512	157
885 1/2	123.20	10	2 1/4	504 or 514	158
886	123.20	10	2 1/2	506	160
887	121.90	12	1 1/2	...	176
888	125.80	12	2	502 or 512	180
888 1/2	130.10	12	2 1/4	504 or 514	183
889	130.10	12	2 1/2	506 or 516	185

Heavy Type

Made from $\frac{1}{2}$ -inch round steel with $\frac{1}{2}$ -inch curved bolts.

No.	Per 100	Inside Lgth. In.	Inside Width In.	Used With Insulator No.	Ship. Wt. Lb. per 100
781	\$113.60	8	1 1/2	...	148
782	113.60	8	2	502 or 512	151
782 1/2	113.60	8	2 1/4	504	152
783	113.60	8	2 1/2	...	153
784	124.00	10	1 1/2	...	178
785	124.00	10	2	502 or 512	180
785 1/2	124.00	10	2 1/4	504 or 514	182
786	124.00	10	2 1/2	506	183
787	130.30	12	1 1/2	...	200
788	130.30	12	2	502 or 512	202
788 1/2	130.30	12	2 1/4	504 or 514	204
789	130.30	12	2 1/2	506 or 516	205

No. 885

Hewlett Suspension Type Insulator Clevises

Hot Galvanized



Made from 1/2-inch round steel with drop-forged eyes. Radius of curve in clevis bolt is 1 13/16 inches. Fits 6, 7 1/2, and 10-inch Hewlett insulators. Diameter: clevis, 1/2 inch; clevis bolt, 3/8 inch. Length inside, 1 13/16 inches; width inside, 3 3/8 inches. No. 895, Ship. Wt. 75 Lb. per 100 \$77.60

Hubbard Flexible Bail Clevises

Hot Galvanized



The stranded bail, when placed under tension, forms to fit any size or curvature of insulator. Yokes can be mounted on eye bolts or machine bolts (square head recommended). A groove around side of yoke is provided to keep eye centered.

Diameter bail, 1/16 inch; with 1/2-inch machine threaded studs on ends. Bail nuts are trapped in yoke.

Galv. Strand Bails		With Copperweld Strand Bails		Inside Lgth. In.	INSIDE WIDTH INCHES		Used with Insulator No.	Ship. Wt. Lb. per 100
No.	Per 100	No.	Per 100		Min.	Max.		
1552	\$130.20	1562	\$155.30	3 7/8	1 3/4	2 1/2	502 or 512	160
1554	130.20	1564	155.30	4 13/16	1 3/4	2 1/2	504 or 514	165
1556	130.20	1566	155.30	5 1/2	1 3/4	2 1/2	506 or 516	170

No. 655 Peirce Forged Steel Thimble Clevises

Hot Galvanized

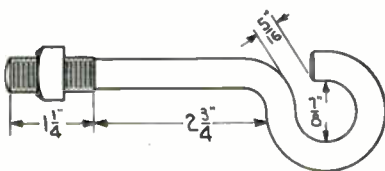


For dead-ending lines to suspension insulators. With 5/8-inch cotter bolt; will develop an ultimate strength of 20,000 pounds. A 1/2-inch cotter bolt may be substituted for the 5/8-inch size if fittings require.

Diameter wire groove, 1 1/4 inches. Shipping weight 122 pounds. No. 655 per 100 \$44.10

No. 9245 Hubbard Guard Arm Hooks

Hot Galvanized



Used on guard arms as dead-ends for telephone services. Fastened by bolting through the arm. Diameter steel, 1/2 inch. Overall length, 5 7/8 inches. Diameter eye, 1/8 inch. A. T. & T. Co. Std. Shipping weight 45 pounds. No. 9245 per 100 \$18.60

No. 9268 Hubbard Transposition Brackets

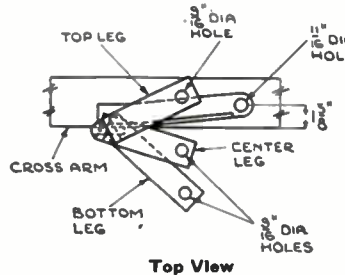
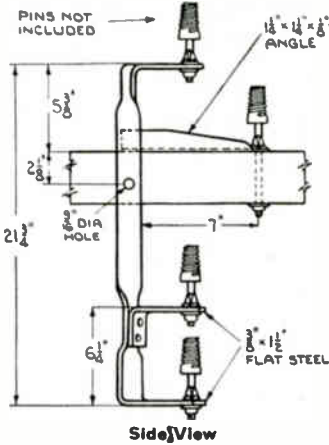
Rigid Type
For Phantom Circuits

Hot Galvanized

Used on phantom circuits and differs from the standard types by the addition of an arm which reaches out to the next pin hole and bolts under the base of the pin. This arm keeps the bracket flat against the side of the crossarm and prevents the bracket from pulling out of vertical alignment.

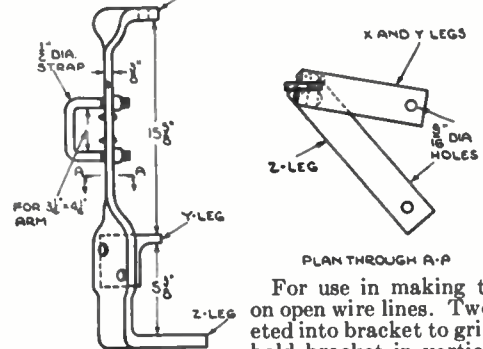
Three points. Size steel, 1 1/2 x 3/8 inches. Any size crossarm can be used.

No. 9268, Ship. Wt. 750 Lb. per 100 \$324.00



No. 9263 Hubbard Transposition Brackets
For Phantom Circuits

Hot Galvanized

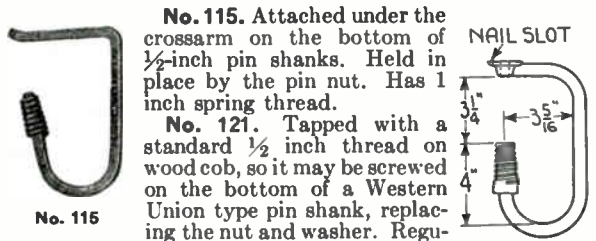


For use in making transpositions on open wire lines. Two lugs are riveted into bracket to grip the arm and hold bracket in vertical alignment. Should be used with three No. 8010 pins.

Three points. Steel size, 1 1/2 x 3/8 inches. Crossarm size, 3 1/4 x 4 1/4 inches. No. 9263, Ship. Wt. 735 Pounds per 100 \$272.90

Hubbard Single Point Transposition Brackets

Hot Galvanized



No. 115. Attached under the crossarm on the bottom of 1/2-inch pin shanks. Held in place by the pin nut. Has 1 inch spring thread. No. 121. Tapped with a standard 1/2 inch thread on wood cob, so it may be screwed on the bottom of a Western Union type pin shank, replacing the nut and washer. Regular nut may be used as a lock nut if the shank extends a sufficient distance below the arm. No. 115 115 \$69.10 No. 121 121 118.80 Per 100 Size Steel inches 1 x 1/2 (Channel) 5/8 (Round) Ship. Wt. per 100 Pieces pounds 174 176

Hubbard Standard Transposition Brackets

Hot Galvanized

Nos. 9252 and 9255 furnished in heavy stock for use with pins having transposition insulators.

Except for No. 9255 all have 3/8-inch hole for a wood screw and holes for 3/8-inch carriage bolt. No. 9255 has 1/16-inch wood screw hole and 9/16-inch carriage bolt hole.



No.	Per 100	Steel Size Inches	Crossarm Size Inches	Ship. Wt. Lb. Per 100
9249	\$87.50	1 1/4 x 5/16	2 3/4 x 3 3/4	277
*9250	87.50	1 1/4 x 5/16	3 x 4	286
†9251	87.50	1 1/4 x 5/16	3 1/4 x 4 1/4	284
†9252	120.10	1 1/2 x 3/8	3 1/4 x 4 1/4	416
9255	153.10	1 1/2 x 1/2	3 1/2 x 4 1/2	475

†A. T. & T. Co. Std. *Western Union Std.

Peirce Single Point Transposition Brackets

Hot Galvanized



Nos. 110 and 111



No. 114

Made of channel steel and fitted for only one insulator. Threads are standard, one-inch diameter.

Nos. 110 and 20110 are for normal spans. Nos. 111 and 20110 for long spans, and No. 114 for use with transposition insulators.

Unless otherwise specified, crossarm U-bolt No. 1021 for 3 1/4 x 4 1/4-inch arms will be furnished.

Lead Thread, No.	20110	20111	.....
Spring Thread, No.	110	111	114
Per 100.	\$71.20	91.60	125.20
Size Channel Steel. in.	3/4 x 3/8 x 1/8	1 x 1/2 x 1/8	1 x 1/2 x 1/8
Ship. Wt. per 100. lb.	101	171	176

Peirce Transposition Brackets

Multipoint Type
Hot Galvanized

Nos. 20237 and 237 are for two-wire transposition.

Nos. 20437 and 437 are for transposing four wires of two circuits on which a phantom is connected.

Made with an angle steel back to which pressed steel points are riveted. Equipped with spring threads for insulators having a standard one-inch pin hole.

Brackets are punched with two holes and a slot so that they may be mounted on various size arms by means of the crossarm U-bolts. Attachment to the arm may be made horizontally or vertically.

Unless otherwise specified, furnished with No. 1021 U-bolt for 3 1/4 x 4 1/4-inch crossarms.

Can be obtained with a hole for a crossarm brace if desired.



No. 237



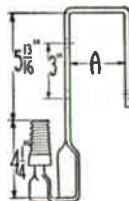
No. 437

Lead Thread, No.	20237	20437
Spring Thread, No.	237	437
Per 100.	\$107.40	243.20
Gage of Steel Points.	12	12
Size Steel Back (Angle).... inches	1 1/4 x 1 1/4 x 1/8	1 1/4 x 1 1/4 x 1/8
Length Over All. inches	14 3/16	27 3/16
Ship. Wt. per 100. lb.	297	528

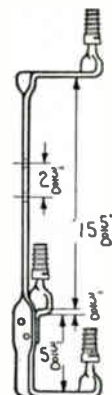
Hubbard 1-Piece Transposition Brackets

For Phantom Circuits

Hot Galvanized



No. 9260



No. 9262

The end of this bracket is turned up and fitted with a standard wood cob. No. 9262 is mounted with 1/2-inch machine bolts.

No.	9260	9261	9262
Per 100.	\$138.70	117.30	483.20
No. of Points.	1	1	3
Steel Size. inches	1 1/4 x 5/16	1 1/4 x 5/16	1 1/2 x 3/8
Cross Arm Size. inches	3 x 4	3 1/4 x 4 1/4	All Sizes
Ship. Wt. per 100. pounds	341	346	918

No. 9275 Hubbard Transposition Brackets

For Phantom Circuits

Hot Galvanized

Furnished in two pieces.

Pin holes are for 1/2-inch short shank pins.

Assembly on arm is accomplished with 1/2-inch machine bolts.

Size steel, 1 1/2 x 3/8 inches. Any size crossarm can be used.

Pins and bolts are not included.

Western Union Std.

No. 9275, Ship. Wt. 797 Lb.
..... per 100 \$283.00



No. 9270 Hubbard Transposition Brace Plates

Hot Galvanized

This brace plate is designed to prevent the transposition bracket from being pulled out of vertical, on slight angles in the line, because of the constant strain in one direction.

Holds the bracket in perfect alignment under excessive side pull.

Used with Nos. 9262 and 9275 on R.S.A. roofed cross arms.

No. 9270, Ship. Wt. 58 Pounds. per 100 \$38.70



Peirce Crossarm Spreader Brackets

Hot Galvanized



No. 317

Nos. 20217 and 217. Furnished with a hole so that Nos. 217A or 20217A, consisting of a single point and attachment bolt, may be added, forming a three point bracket similar to No. 317.

Nos. 201, 301, 20201, and 20301. May be adjusted vertically on arm when used with crossarm strap. If desired, may be bolted to arm through side holes in back. May also be used as house brackets for service wires.

Nos. 202, 302, 20202, and 20302. With rest riveted to back; aids in fastening bracket to crossarm, as well as keeping bracket in vertical alignment on crossarm.



No. 301

Two No. 3301 washers are included with angle back type brackets. Used for abridging slot between back angles to furnish a seat for the nuts of the crossarm strap.

Insulator points of angle back spreader brackets are of 1x1/2-inch channel steel, extending 4 1/4 inches from arm. Back is composed of two angles, spaced 3/16 inch apart, 2 3/16 inches wide with 1/16-inch bolt holes.

Presteele Type

No.	With 1-Inch Lead Thread		With 1-Inch Spring Thread		Per 100	No. Wires	Wire Spacing In.	Steel Size In.
	Wt. Lb. per 100	Ship. per 100	No.	Wt. Lb. per 100				
20217	390		*217	330	\$204.80	2	13	No. 9 Ga.
20217A	128		217A	98	47.00	1		No. 9 Ga.
20317	500		*317	410	238.80	3	6 1/2	No. 9 Ga.

Angle Type

No.	Wt. Lb. per 100	No.	Wt. Lb. per 100	Per 100	No. Wires	Wire Spacing In.	Angle
20201	368	201	308	\$127.90	2	10	1x1x1/8 Angle
20301	520	301	430	178.80	3	6 1/2	1x1x1/8 Angle
20202	405	202	345	144.40	2	12	1x1x1/8 Angle
20302	585	302	495	189.50	3	6 1/2	1x1x1/8 Angle

*Price does not include crossarm straps.

Peirce Wireholders

Multi-Point Type

Hot Galvanized



No. 4299

The insulators can be installed after back has been mounted to building. Insulators can be easily removed or installed to make wireholders of various wire spacing. For example, a 2-wire 9-inch spacing wireholder can be converted into a 3-wire 4 1/2-inch spacing by the addition of another insulator.

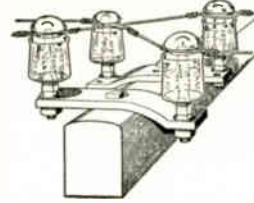
Back pressed from 12-gage steel; has 1/16-inch holes in center of 3/16x1 1/2-inch slot.

No.	No. Wires	Wire Spacing In.	Ext. to Ctr. of Wire Hole, In.	Insulator No.	Ship. Wt. Lb. per 100
4296	2	6	2 3/8	1664	295
4299	2	9	2 3/8	1664	325
4394	3	4 1/2	2 3/8	1664	425
4396	3	6	2 3/8	1664	460
5296	2	6	2 1/2	1674	310
5299	2	9	2 1/2	1674	340
5394	3	4 1/2	2 1/2	1674	450
5396	3	6	2 1/2	1674	480
24296	2	6	2	4-11-64	245
24299	2	9	2	4-11-64	260
24394	3	4 1/2	2	4-11-64	330
24396	3	6	2	4-11-64	365
25296	2	6	2 1/8	7-11-94	305
25299	2	9	2 1/8	7-11-94	340
25394	3	4 1/2	2 1/8	7-11-94	440
25396	3	6	2 1/8	7-11-94	455
3296	2	6	2 1/2	1654	297
3299	2	9	2 1/2	1654	325
3394	3	4 1/2	2 1/2	1654	410
3396	3	6	2 1/2	1654	435
1664	Insulator with 3/8" Bolt & Cork Washer				100
1674	Insulator with 3/8" Bolt & Cork Washer				110
4-11-64	Insulator with 3/8" Bolt				70
7-11-94	Insulator with 3/8" Bolt				100
1654	Insulator with 3/8" Bolt & Cork Washer				90

Prices upon application.

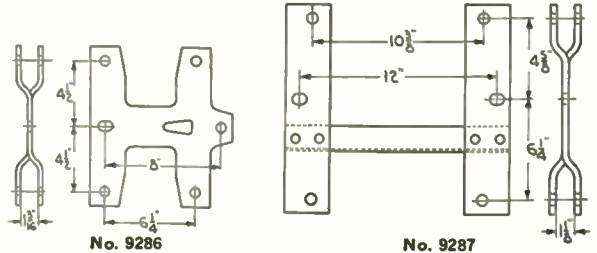
Hubbard Transposition Break Iron Brackets

Hot Galvanized



No. 9285

No. 9285 covers a plate, two No. 8061 pins and a machine bolt. Two sets are needed for transposition. Pins and 3/8-inch bolt are included.



No. 9286

No. 9287

Nos. 9286 and 9287 accomplish the same result except that the entire assembly is made up in one piece. Neither pins nor mounting bolts are included.

No.	9285	†9286	†9287
Per 100	\$191.70	279.80	466.50
Type	Single	Double	Riveted
Size Steel	1/2 inches	3/16	3/8
Size Mounting Holes	1 1/16 inches	1 1/16x1	1 1/16x7/8
Diameter of Pin Holes	1 1/16 inches	1 1/16	1 1/16
Ship. Wt. per 100	470 lb.	660	1100

†A. T. & T. Co. Standard.

No. 9280 Break Iron Brackets

Hot Galvanized



Used for dead-ending and breaking communication system wires for take-off.

Furnished complete with pins and bolt. Pin spacing, 6 1/2 inches; size wood cob, 1 inch; pin extension, 4 1/4 inches.

Western Union Standard. A. R. A. Standard. No. 9280, Ship. Wt. 448 Lb. per 100 \$178.50

GraybaR QUALITY
 Everything Electrical
 GraybaR
 ELECTRIC COMPANY
 OFFICES IN ALL PRINCIPAL CITIES

Hubbard Telephone Distributing Brackets

Hot Galvanized

No. 9200 L House Type

Used at the house end of a telephone service for dead ending twisted pair telephone wires. Size steel, $\frac{3}{16} \times 1\frac{1}{4}$ inches. Length legs, $3\frac{3}{8} \times 2$ inches.

A. T. & T. Co. Std.

No. 9200, Ship. Wt. 56 Pounds...per 100 \$19.10

L Pole Type

For taking off telephone services, or for short runs on poles.

Size steel, $\frac{1}{4} \times 2$ inches. Length legs, 4×2 inches. Approximate shipping weight, 100 pieces, 97 pounds.

No. 9202 *9203
Per 100... \$26.10 26.20

No. of Holes... 3 2

Size Holes... inches $1\frac{5}{16}$ $\frac{3}{8}$

†A. T. & T. Co. Std. *Western Union Std.



No. 9200

Hubbard Telephone Corner Brackets

Hot Galvanized

Used where leads from the pole come to the building at an angle and to carry leads around the corner of a building.



No.	*9204	*9205	†9206	†9207
Per 100	\$38.70	45.90	25.90	30.90
Mounting Hole Size in.	$1\frac{1}{32}$	$1\frac{1}{32}$	$\frac{3}{32}$	$\frac{3}{32}$
Insulated Holes in.	$1\frac{1}{32}$	$1\frac{1}{32}$	$1\frac{1}{32}$	$1\frac{1}{32}$
Size Steel in.	$\frac{7}{32} \times 1\frac{7}{32}$	$\frac{7}{32} \times 1\frac{7}{32}$	$\frac{3}{16} \times \frac{1}{2}$	$1\frac{1}{4} \times 1\frac{1}{2}$
Length Overall in.	$4\frac{3}{8} \times 2\frac{1}{2}$	$8\frac{1}{2} \times 1\frac{5}{8}$	$3\frac{1}{4} \times 3\frac{3}{8}$	$3\frac{1}{4} \times 4\frac{7}{8}$
Ship. Wt. per 100 lb.	66	96	71	121

†A. T. & T. Co. Std. *Western Union Std.

Porcelain Knobs for Telephone Brackets

Dry Process

White glaze, porcelain knob insulator for use with telephone corner brackets.



No.	9225	9226
Per 100	\$11.20	19.20
No. of Grooves	2	4
Diam. Bolt Hole in.	$\frac{3}{8}$	$\frac{1}{2}$
O.D. in.	$1\frac{1}{8}$	$1\frac{3}{4}$
Height in.	$1\frac{1}{16}$	$2\frac{1}{4}$
Ship. Wt. per 100 lbs.	22	40



No. 9226

Hubbard Bolts for Telephone Brackets

Hot Galvanized

Used for attaching porcelain knob insulators to telephone pole or house brackets.

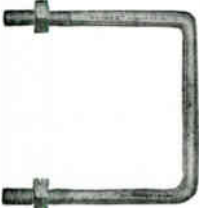
No.	Stove Bolt		Machine Bolt	
	9232	9233	9603	9605 $\frac{1}{2}$
Per 100	\$2.40	...	3.40	5.10
Diam. in.	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{8}$	$\frac{3}{8}$
Length in.	2	3	3	$5\frac{1}{2}$
Ship. Wt. per 100 lb.	6.6	8.6	13.8	22.9

Peirce Cross Arm U-Bolts

Horizontal Construction

Hot Galvanized

Used in position illustrated. Formed of $\frac{3}{8}$ -inch round steel. Has $1\frac{1}{2}$ inches of thread.



No.	1021	1022	1023	1024
Per 100	\$32.90	32.90	32.90	32.90
Size Crossarm in.	$3\frac{1}{4} \times 4\frac{1}{4}$	$3\frac{1}{2} \times 4\frac{1}{2}$	$3\frac{3}{4} \times 4\frac{3}{4}$	4×5
Diameter of Steel in.	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$
Spread in.	$4\frac{1}{4}$	$4\frac{1}{2}$	$4\frac{3}{4}$	5
Length of Bolt in.	$4\frac{1}{4}$	$4\frac{1}{2}$	$4\frac{3}{4}$	5
Ship. Wt. per 100 pounds	53	59	66	73

Peirce Electroweld Type Secondary Racks

Hot Galvanized

Made by butt-welding the Pre-steel points to the pressed back. This construction provides a smooth surfaced, seamless product that eliminates weeping joints, and at the same time provides exceptional strength.

Heavy Service Type

Insulator No. 355 is standard equipment.



No. 3848



No. 3838

Line Wire Spacing Wires In.	With Insulators per 100	Without Insulators per 100	With Extended Back		With Non-Extended Back		
			No.	Over-All Lgth. In.	No.	Over-All Lgth. In.	
2 4	\$171.90	\$136.50	2844	13 $\frac{1}{4}$	686	2834	9 $\frac{3}{4}$
2 6	206.70	171.30	2846	15 $\frac{1}{4}$	786	2836	11 $\frac{3}{4}$
2 8	206.70	171.30	2848	17 $\frac{1}{4}$	841	2838	13 $\frac{3}{4}$
2 12	243.50	208.10	...	...	...	2842	17 $\frac{3}{4}$
3 4	224.40	171.30	3844	17 $\frac{1}{4}$	949	3834	13 $\frac{3}{4}$
3 6	304.10	251.00	3846	21 $\frac{1}{4}$	1189	3836	17 $\frac{3}{4}$
3 8	304.10	251.00	3848	25 $\frac{1}{4}$	1234	3838	21 $\frac{3}{4}$
3 12	368.50	315.40	...	...	...	3842	29 $\frac{3}{4}$
4 4	279.10	208.30	4844	21 $\frac{1}{4}$	1207	4834	17 $\frac{3}{4}$
4 6	386.20	315.40	4846	27 $\frac{1}{4}$	1562	4836	23 $\frac{3}{4}$
4 8	386.20	315.40	4848	33 $\frac{1}{4}$	1637	4838	29 $\frac{3}{4}$

Medium Service Type

Back is formed of 12-gage steel. Meets the general requirements of secondary construction. Width of back, $2\frac{3}{4}$ inches; extension to center of rack bolt, $3\frac{3}{8}$ inches. Mounting bolts may be installed either behind insulators or between them. Rack bolts, $\frac{5}{8}$ inch in diameter. Insulator No. 355 is standard equipment.

2 4	\$171.90	\$136.50	2644	13 $\frac{1}{4}$	666	2634	9 $\frac{3}{4}$	651
2 6	206.70	171.30	2646	15 $\frac{1}{4}$	761	2636	11 $\frac{3}{4}$	741
2 8	206.70	171.30	2648	17 $\frac{1}{4}$	811	2638	13 $\frac{3}{4}$	781
2 12	243.50	208.10	...	...	...	2642	17 $\frac{3}{4}$	876
3 4	224.40	171.30	3644	17 $\frac{1}{4}$	919	3634	13 $\frac{3}{4}$	894
3 6	304.10	251.00	3646	21 $\frac{1}{4}$	1149	3636	17 $\frac{3}{4}$	1119
3 8	304.10	251.00	3648	25 $\frac{1}{4}$	1189	3638	21 $\frac{3}{4}$	1149
3 12	368.50	315.40	...	...	...	3642	29 $\frac{3}{4}$	1224
4 4	279.10	208.30	4644	21 $\frac{1}{4}$	1172	4634	17 $\frac{3}{4}$	1137
4 6	386.20	315.40	4646	27 $\frac{1}{4}$	1517	4636	23 $\frac{3}{4}$	1462
4 8	386.20	315.40	4648	33 $\frac{1}{4}$	1582	4638	29 $\frac{3}{4}$	1527

Light Service Type

With Extended Back

Back is formed of 12-gage steel. Offsets are provided for lag screw heads when mounting is accomplished by means of the side slots. Insulator No. 1606 is standard equipment.



No. 3746

No.	With Insulators per 100	Without Insulators per 100	No. Line Wires	Line Wire Spacing In.	Overall Length Back In.	With Insulators Ship. Wt. Lb. per 100
2744	\$126.90	\$107.10	2	4	13	382
2746	128.40	108.60	2	6	15	482
2748	134.10	114.30	2	8	17	517
2752	168.00	148.20	2	12	21	587
3744	177.00	147.30	3	4	17	573
3746	177.90	148.20	3	6	21	633
3748	189.50	159.80	3	8	25	708
3752	235.40	205.70	3	12	33	858
4744	187.80	148.20	4	4	21	734
4746	227.00	187.40	4	6	27	824
4748	245.70	206.10	4	8	33	1024



No. 1378

Peirce U Through Type Secondary Racks
Heavy Type
 Hot Galvanized

Used largely by power companies. Points are formed in the shape of a U, inserted through back and riveted in place. Under tension, strain is distributed over entire area of back. Rivets do not carry any dead end load. Under heavy line strains, they keep points from bending away from the back.

Points are pressed from 12-gage steel, formed and mounted so that smooth, round side is inside, toward line wire. Rack back is pressed from 9-gage steel and is 3 1/2 inches wide. Extension to center of insulator bolt is 4 inches. Racks may be mounted by using bolts behind insulators or between them. No. 355 insulator is standard.

When 4-inch spacing racks are specified, shield No. 3372, for attaching over upper edges of points, is furnished to prevent injury to insulation when stringing the wire.

No.	With Extended Back		No. Line Wires	Line Wire Spacing In.	Overall Lgth. Back In.	With Insulators Shipped per 100
	With Insulators per 100	Without Insulators per 100				
1271	\$78.50	\$60.80	1	8	9 1/4	338
1278	165.90	130.50	2	8	17 1/4	786
1282	181.00	145.60	2	12	21 1/4	831
1374	183.60	130.50	3	4	17 1/4	879
1378	237.90	184.80	3	8	25 1/4	1234
1382	266.30	213.20	3	12	33 1/4	1259
1478	308.60	237.80	4	8	33 1/4	1612

No.	With Non-Extended Back		No. Line Wires	Line Wire Spacing In.	Overall Lgth. Back In.	With Insulators Shipped per 100
	With Insulators per 100	Without Insulators per 100				
1728	\$165.90	\$130.50	2	8	14	761
1732	181.00	145.60	2	12	18	801
1734	183.60	130.50	3	4	14	804
1738	237.90	184.80	3	8	22	1189
1742	266.30	213.20	3	12	30	1214
1748	308.60	237.80	4	8	30	1557



No. 3768

Peirce U Through Type Secondary Racks
Light Type
 Hot Galvanized

Points are formed in the shape of a U, inserted through back and riveted in place. Under tension, strain is distributed over entire area of back. Rivets do not carry any dead end load. Under heavy line strains, they keep points from bending away from the back.

Points are pressed from 12-gage steel, looped through the back. Back is pressed from 12-gage steel. No. 1606 insulator is standard.

Extension to center of insulator bolt is 3 inches. Back width is 3 1/2 inches giving exceptional resistance to line strains.

When 4-inch spacing racks are specified, shield No. 3371 for attaching over upper edges of points, is furnished to prevent injury to the insulation when stringing the wire.

No.	With Extended Back		No. Line Wires	Line Wire Spacing In.	Overall Lgth. Back In.	With Insulators Shipped per 100
	With Insulators per 100	Without Insulators per 100				
1276	\$128.40	\$108.60	2	6	13 1/4	532
2768	134.10	114.30	2	8	16 1/2	567
2772	168.00	148.20	2	12	19 1/4	597
1376	177.00	147.30	3	6	19 1/4	688
3768	189.50	159.80	3	8	24 1/2	733
3772	235.40	205.70	3	12	31 1/4	808
1476	227.00	187.40	4	6	25 1/4	804
4768	245.70	206.10	4	8	32 1/2	1029

No.	With Non-Extended Back		No. Line Wires	Line Wire Spacing In.	Overall Lgth. Back In.	With Insulators Shipped per 100
	With Insulators per 100	Without Insulators per 100				
1026	\$128.40	\$108.60	2	6	11 1/2	512
1028	134.10	114.30	2	8	13 1/2	542
1032	168.00	148.20	2	12	17 1/2	572
1036	177.00	147.30	3	6	17 1/2	663
1038	189.50	159.80	3	8	21 1/2	703
1042	235.40	205.70	3	12	29 1/2	773
1046	227.00	187.40	4	6	23 1/2	774
1048	245.70	206.10	4	8	29 1/2	989



No. 2901

Peirce Distributing Knob Racks
 Hot Galvanized

Used for running twisted pair telephone wires along poles and for attaching service take-off wires.

Made up of two solid steel points, or eyes, securely riveted to a 1 1/4 x 5/8 x 1/8-inch channel back. No. 9214 knobs are included. Rack bolts for these knobs are 3/8-inch in diameter, threaded at the lower end.

Racks are mounted by means of 1/2-inch lag screws through 3/8-inch holes in each end. Extension from pole to center of insulators is 2 3/8 inches. Spacing between corresponding grooves of adjacent insulators, or between insulator centers is 1 1/2 inches.

No.	2900	2901	2902
Per 100	\$121.50	168.20	198.70
No. of Knobs	4	6	8
Length Over All	10 5/8 inches	13 3/4	16 7/8
Ship. Wt. per 100	308 pound	418	511

No. 9214 Peirce Porcelain Telephone Rack Knobs



Made of brown glazed dry process porcelain, 1 1/2 inches high and 1 1/4 inches diameter. Wire groove 3/4 inch wide is divided by a fin which keeps the two wires of the twisted pair separated. Bolt hole is 2 3/4 inch diameter.

No. 9214, Ship. Wt. 25 Pounds per 100 \$17.60

Peirce Swinging Knob and Knob Strap Fixtures
 Hot Galvanized



No. 2922



No. 2924

The swinging knob furnishes a flexibility of attachment that eliminates wear and crystallization of wires. With 1/2-inch attachment hole. Extension to center of the insulator is 3 1/4 inches. Knob straps are used with wood screws for house attachments. Spacing between corresponding holes is 3 1/4 inches.

Made of No. 12 gage steel.

No.	2922	2924
Per 100	\$33.10	27.60
Overall Length	4 1/8 inches	5 1/4
Shipping Weight per 100	85 pounds	61

No. 1316 Hubbard Drive Hooks
 Hot Galvanized



Used for wire clamp attachments on poles, arms or buildings. Has fetter drive threads and a drive head.

Steel diameter, 5/16 inch. Overall length, 5 1/8 inches. Length of thread, 2 inches.

No. 1316, Ship. Wt. 29 Pounds per 100 \$15.80

No. 8930 Hubbard Crossover Clamps
 Hot Galvanized



Used for clamping messengers together when they cross at right angles.

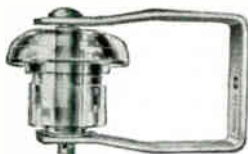
Size of strand, 5/16 to 1/2 inch. Size of sides, 3 1/4 x 1 1/2 x 1/2 inches.

Bolts furnished are 1/2-inch oval shoulder, clamp bolts.

No. 8930, Ship. Wt. 170 Pounds per 100 \$108.80

Hubbard Dead-Ending Shackles

Hot Galvanized



No. 9290 Shackle
No. 9291 Insulator

Used by signal and railroad companies for dead-ending or breaking bare signal wires. Made to clamp around crossarm.

Square holes for 1/2-inch carriage bolt, running vertically through arm; 3/8-inch lag screw at side of arm.

Shackles

Size crossarm, 3 1/4 x 4 1/4 inches. Size steel, 3/16 x 1 1/16 inches.

No.	Description	Ship. Wt. Lb. per 100	Per 100
*9290	Shackle Only, less Insulator	265	\$128.00
9296	Shackle with No. 1609 Wet Process Brown Porcelain Insulator	401	153.80

Insulators

No.	Description	Overall Length Inches	Ship. Wt. Lb. per 100	Per 100
1612	Wet Process Brown Porcelain, Skirt Style	3 7/16	148	\$51.20
*9291	Glass, Double Skirt Style	3 1/4	192	

*Western Union Standard.

Peirce Dead-End Brackets

For Railway Signal Circuits

Hot Galvanized



A 3/8 x 1/2-inch carriage bolt with 1 1/4 inches of thread is riveted to base of bracket. This makes bracket suitable for mounting on crossarms 3 1/4 x 4 1/4 to 4 x 5 inches.

No.	195	1195
With Insulators	per 100 \$61.00	137.50
Insulator Hole	in. 1 1/2 x 1 1/16	1 1/8 x 1 1/8
Extension to Center of Insulator Hole	in. 1 5/8	1 15/16
With Insulator No.	1602	1604
Shipping Weight per 100	lb. 122	240

Klauber Universal Dead-End Clevises

Hot Galvanized

For metal cap insulators using eye type connection; hook type connection, installed in same manner, with hook on cap end of insulator; clevis type connection with legs attaching on outside of clevis.



No. 555 Clevis



Eye Connection

Used on 1/2" or 5/8" bolts. Between legs inside, 3/16"; total width across legs, 15/16". Diameter: mounting hole, 1 1/16"; cotter bolt, 5/8". Steel size, 3/16" x 1 1/2".

No.	555	557
Per 100	\$49.70	83.00
Extension to Center Cotter Bolt	inches 3 1/2	4 1/2
Shipping Weight per 100	pounds 129	153

Peirce Secondary Racks

Chicago Type
Hot Galvanized



Presteel U-shaped points of 12-gage steel, riveted to 1/4" x 1 1/4" flat steel non-extended back. No. 355 insulators attached with 5/8" button head bolt. Pole mounting holes 1 1/16" x 1" for 5/8" through bolts or lag screws.

No.	With Insulators		Without Insulators		Line Wire No. Spacing	Over-All Lgth. Back In.
	Per 100	Ship. Wt. Lb. per 100	Per 100	Ship. Wt. Lb. per 100		
248	\$134.10	686	\$98.70	2	8	12 1/2
252	165.00	776	129.00	2	12	16 1/2
344	151.80	804	98.70	3	4	12 1/2
348	193.90	1044	140.80	3	8	20 1/2
352	235.50	1184	182.40	3	12	28 1/2
448	253.90	1382	183.10	4	8	28 1/2
544	229.30	1280	140.80	5	4	20 1/2
1744	307.00	1736	183.10	7	4	28 1/2

Hubbard Wireholders

Hot Galvanized



No. 4-11-44

Will accommodate all normal sized service wires or cables which formerly needed a special sized wire hole.

Screws are smooth, sharp pointed for easy starting and full threaded so they will hold any normal loading even when attached through timbers thinner than the length of the screw.

Size of wire hole, 7/8 x 1 inch.

No.	Type Bolt or Screw	Size Screw or Bolt, Gage No. or In.	Length Screw or Bolt, In.	Ship. Wt., Lb. per 100
4-11-40	Toggle Bolt	5/16	4 1/2	80
4-11-42	Carriage Bolt	3/8	5	80
4-11-44	Wood Screw	No. 22	2 1/4	65
4-11-45	Wood Screw	No. 22	3	67
4-11-46	Wood Screw	No. 22	4	69
4-11-48	Wood Screw	No. 22	6	73
4-11-64	Stud Bolt	3/8	1 1/2	65
4-11-100	Wood Screw	No. 22	2 1/4	65

Prices upon application.

Peirce Wireholders

All-Porcelain Type



Nos. 1607, 1617, 1707, 1717



Nos. 1614, 1624



Nos. 1621, 1631



Nos. 1625, 1635, 1725, 1735

With Insulators as on No. 1607—Wire Hole 3/4 x 1 1/16 Inches

Screw or Bolt In	Screw Cemented or Bolt Leaded In	Size of Screw or Bolt Inches	In-ulator Dry	Ship. Wt. Lb. Process per 100
1607	1607L	No. 22x2 1/4 Galv. Screw	Dry	95
1617	1617L	No. 22x2 1/4 Brass Screw	Dry	95
1627	1627L	1/4 x 4 1/2 Toggle Bolt	Dry	100
1637	1637L	3/8 x 5 Carriage Bolt	Dry	125
1657	1657L	1/4 x 4 1/2 Brass Toggle Bolt	Dry	105
1707	1707L	No. 22x2 1/4 Galv. Screw	Wet	100
1717	1717L	No. 22x2 1/4 Brass Screw	Wet	100

With Insulators as on No. 1614—Wire Hole 1 1/16 x 1 3/16 Inches

1614	1614L	No. 20x2 1/4 Galvanized Screw	Dry	95
1624	1624L	No. 20x2 1/4 Brass Screw	Dry	95
1634	1634L	1/4 x 4 1/2 Toggle Bolt	Dry	100
1644	1644L	3/8 x 5 Carriage Bolt	Dry	125

With Insulators as on No. 1621—Wire Hole 5/8" Dia.

1621	1621L	No. 20x2 1/4 Galvanized Screw	Dry	65
	1621A	No. 20x1 1/2 Galvanized Screw	Dry	60
1623	1623L	No. 22x2 1/4 Galvanized Screw	Dry	70
1631	1631L	No. 20x2 1/4 Brass Screw	Dry	65
1633	1633L	No. 22x2 1/4 Brass Screw	Dry	65
1641	1641L	1/4 x 4 1/2 Toggle Bolt	Dry	80
1651	1651L	3/8 x 5 Carriage Bolt	Dry	80

With Insulators as on No. 1625—Wire Hole 2 9/32" Dia.

1625	1625L	No. 22x2 1/4 Galvanized Screw	Dry	125
1635	1635L	No. 22x2 1/4 Brass Screw	Dry	125
1645	1645L	1/4 x 4 1/2 Toggle Bolt	Dry	150
1655	1655L	3/8 x 5 Carriage Bolt	Dry	140
1725	1725L	No. 22x2 1/4 Galvanized Screw	Wet	135
1735	1735L	No. 22x2 1/4 Brass Screw	Wet	135

No. 1670 Leaded in Screw Only—Wire Hole 1 1/2" Diam.

1670 5/8 x 3, Gimlet Point Lag Screw. Dry 390

Prices upon application.

Peirce Wireholders

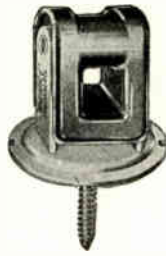
Standard Type
Hot Galvanized



No. 190

Not affected by temperature changes or by difference in coefficient of expansion of parts.

No. 190 is for making house service connections. Copper cotter pin interlocks insulator with metal portion of wireholder. No. 290 is similar to No. 190 except has wet process porcelain insulator.



No. 1190

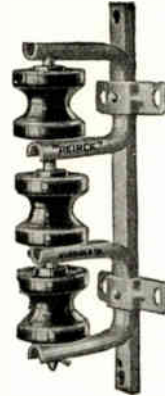
No.	With Insulators Per 100	Size of Screw, Bolt, or Tap	Extension Base to Ctr. Wire Hole In.	Size of Wire Hole In.	Ship. Wt. Lb. per 100
190		No. 22x2" Wood Screw	1 5/8	1/2 x 1 1/16	105
190A		No. 22x2" Wood Screw	2 1/4	1/2 x 1 1/16	115
190R		No. 22x2" Wood Screw	4 1/4	1/2 x 1 1/16	150
194		5/8" Tap	1 3/32	1/2 x 1 1/16	95
195	\$61.00	3/8" x 4 1/2" Carriage Bolt	1 5/8	1/2 x 1 1/16	140
290		No. 22x2" Wood Screw	1 5/8	1/2 x 1 1/16	105
1190		No. 24x2 1/2" Wood Screw	1 15/16	1 1/2 x 1 1/8	228
1195	137.50	3/8" x 4 5/8" Carriage Bolt	1 15/16	1 1/2 x 1 1/8	240

Peirce Presteel House Racks

Hot Galvanized

Designed as a house bracket; also used for carrying secondary wires vertically on poles where conductor is lighter than No. 3 wire. Made with 3/4-inch channel back and Presteel points. Mounting slots, 1/16 x 1/2 inch.

Assembled with No. 1603 insulators. No. 501 corner iron is of 12-gage 1-inch flat steel.



No.	With Insulators per 100	No. Wires	Wire Spacing In.	Extension In.	Over-all Lgth. In.	Ship. Wt. Lb. per 100
183	\$63.00	1	0	3	6 3/8	150
286	112.10	2	6	3	12 3/8	275
383	122.10	3	3	3	12 3/8	343
386	161.60	3	6	3	18 3/8	470
583	179.80	5	3	3	18 3/8	556
501	22.10	Corner Iron.....				44

Peirce Secondary Racks

Standard Type
Hot Galvanized

Rack points are of No. 9 gage steel with rounded tops so that wire insulation will not be harmed while stringing. Play between points and insulator is sufficient to eliminate jammed wires. Mounting may be accomplished at any point through the back with through bolts, using the No. 3350 mounting washers furnished.

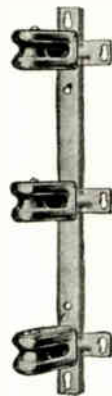
Side mounting slots are for 3/8-inch lag screws.



No. 191-A



No. 296



No. 396

No. 299A is same as No. 299 except that it has a hole in center of back. When No. 191A is mounted in this hole it changes No. 299 from 2-wire 9-inch spacing to 3-wire 4 1/2-inch spacing. No. 191A is equipped with 5/16 x 5/8-inch stove bolt for attaching to back. Mounting slots are for 1/4 and 3/8-inch screws.

No.	With Insulators Per 100	No. Wires	Wire Spacing Inches	Shipping Wt. Lb. per 100
191	\$44.20	1	0	94
191A	40.30	1	0	77
296	87.70	2	6	211
299	90.70	2	9	229
299A	90.70	2	9	229
394	120.00	3	4 1/2	299
396	122.40	3	6	330
494	166.10	4	4 1/2	430
1602	17.10	Insulator Only-Wire Hole 1/2" x 1 1/16" 38		

Light Type

No.	With Insulators Per 100	No. Wires	Wire Spacing Inches	Shipping Wt. Lb. per 100
1191	\$108.40	1	0	222
1296	169.50	2	6	440
1299	175.40	2	9	468
1396	250.70	3	6	568
1604	27.80	Insulator Only-Wire Hole 1 1/8" x 1 1/8" 77		

Heavy Type

No.	With Insulators Per 100	No. Wires	Wire Spacing Inches	Shipping Wt. Lb. per 100
1191	\$108.40	1	0	222
1296	169.50	2	6	440
1299	175.40	2	9	468
1396	250.70	3	6	568
1604	27.80	Insulator Only-Wire Hole 1 1/8" x 1 1/8" 77		

Peirce Corner Irons

Hot Galvanized

Attached by 5/16-inch screws or expansion bolts. Made of 12-gage, 1-inch steel.



No.	Per 100	Extension from Bend in.	Mounting Holes in.	Mounting Slots in.	Size Bolt in.	Ship. Wt. per 100 lb.
501	\$22.10	1 1/16	1 1/2	1 1/2	1/16 x 1 1/8	52
503	34.00	3	1 1/2	1 1/2	1/16 x 1 1/8	52
504	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
505	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
506	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
507	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
508	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
509	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
510	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
511	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
512	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
513	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
514	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
515	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
516	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
517	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
518	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
519	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
520	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
521	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
522	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
523	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
524	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
525	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
526	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
527	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
528	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
529	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
530	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
531	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
532	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
533	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
534	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
535	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
536	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
537	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
538	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
539	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
540	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
541	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
542	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
543	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
544	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
545	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
546	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
547	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
548	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
549	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52
550	3	3	1 1/2	1 1/2	1/16 x 1 1/8	52

Peirce Porcelain Insulators for Secondary Racks



Nos. 1603 and 1703



Nos. 1606 and 1706



Nos. 355 and 455



Nos. 356 and 456

No.	Per 100	Kind of Porcelain	Color of Glaze	Ship. Wt. Lb. per 100
1603	\$9.20	Dry Process	Brown	48
1703	*	Wet Process	Brown	48
1606	9.90	Dry Process	Brown or White	46
1706	16.10	Wet Process	Brown	46
355	17.70	Dry Process	Brown or White	118
455	21.40	Wet Process	Brown	118
356	*	Dry Process	Brown	118
456	23.20	Wet Process	Brown	118

*Price upon application.

Peirce Insulated Telephone Knob Screws

Hot Galvanized

No. 2919

Porcelain knob used generally for running telephone wires along the sides of buildings.

Provided with small white glaze insulator No. 2917. Overall length, 3 inches. Size screw, No. 11x1 1/8 inches.

No. 2919, with Insulators, Ship. Wt. 11 Pounds.....per 100 \$17.70

No. 2920

May be used for dead-ending duplex or twisted pair telephone wires. Also as a service attachment for low voltage power lines in localities not visited by snow and sleet.

Provided with large brown glaze insulator No. 2927. Overall length, 4 1/4 inches. Size screw, No. 22x2 1/2 inches. No. 2920, with Insulators, Ship. Wt. 48 Pounds.....per 100 \$26.80

Peirce Swinging Knob Fixtures

Hot Galvanized



The sister hook feature of this bracket permits the removal of the insulator for driving the screw without the usual trouble with small bolts, nuts, or movable parts.

The 3/8x3-inch gimlet point lag screw is trapped in the eye in such a manner as to be locked against turning.

No.....	2928	2929
With Insulators.....per 100	\$75.90	128.60
Insulator No.....	1606	355
Extension.....inches	4 1/16	5 1/8
Steel Size.....	11 Ga. x 1 1/2"	9 & 11 Ga.
Ship. Wt. per 100.....pounds	160	288

Peirce Telephone Wireholders

All Porcelain Type

Nos. 1621 and 1622 wireholders are for duplex and twisted pair telephone wire. They are furnished with sharp pointed, deep cut, galvanized or brass wood screws for easy starting and holding strength. The portion around which wires are looped is smooth and well rounded.

Unless otherwise specified, cemented-in screws will be furnished. Leaded in screws are optional, but must be specified by adding the letter L to the catalog number.

No.	Type	Screw Gage	Length No.	Length Inches	Size Wire Hole	Approx. Ship. Wt. Lb. per 100 Pcs.
||1621	Single	20	2 1/4	2 1/4	5/8 Diam.	65
||1622	Double	20	2 1/4	2 1/4	5/16x3/4	65
||1623	Single	22	2 1/4	2 1/4	5/8 Diam.	65
¶1631	Single	20	2 1/4	2 1/4	5/8 Diam.	65
¶1632	Double	20	2 1/4	2 1/4	5/16x3/4	65
¶1633	Single	22	2 1/4	2 1/4	5/8 Diam.	65

||Galvanized screw.

¶Brass screw.

Prices upon application.

Peirce Primary Lead Wireholders

A wet process porcelain wireholder so designed that it has sufficient leakage distance for primary voltages.

Either style may be used in the arm or pole. Unless otherwise specified No. 1650 will be furnished with cemented-in screw. If desired that screws be leaded in, specify by adding the letter L after the number.

Diameter of wire hole, 1 inch.

No.	Per 100	Size Screw	Kind of Screw	Ext. Base to Cr. Wire Hole, in.	Ship. Wt. Lb. per 100
1640	On	No. 24x2 1/4" Wood	Galv. Steel	3 1/2	225
1650	App.	No. 22x2" Wood	Brass	3 1/2	220
1660	\$194.50	1/2"x3" G.P. Lag	Galv. Steel	5 1/2	265

Peirce Dead-Ending Straps

For Secondary Racks

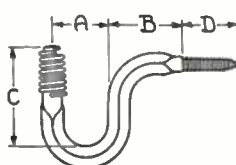
Hot Galvanized



No.	Per 100	Type	Mounting Pole	Holes, In. Rack	Steel Size In.	Ship. Wt. Lb. per 100
998	\$27.20	Hook	3/16	..	1/4 x 1 1/2	132
999	24.40	Light	3/16	1 1/16	1/4 Ga. x 1 1/4	42
1000	27.20	Heavy	3/16	1 1/16	1/4 x 1 1/4	118
1010	59.00	Long	3/16	3/4	1/4 x 1 1/4	190

Peirce Prussian Hook Brackets

Hot Galvanized



Used for supporting wires on poles, trees and houses.

Nos. 311 and 313 are formed from 5/8-inch round steel and equipped with a 1-inch spring thread for an insulator and a 5/8-inch lag screw thread for mounting.

Nos. 911 and 913 are similar to Nos. 311 and 313 except that they have a 1-inch lead thread for an insulator.

No. 314

Nos. 314 and 914 are formed from 5/8-inch square steel and are furnished with a 5/8-inch gimlet point lag screw thread for mounting. No. 314 is furnished with a 1-inch spring thread and No. 914 with a 1-inch lead thread.

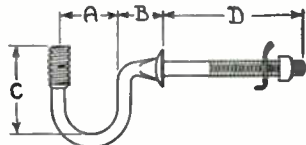
Nos. 315 and 915 are formed from 1/2-inch square steel with a 1/2-inch gimlet point lag screw thread for attachment. No. 315 is furnished with a 1-inch spring thread and No. 915 with a 1-inch lead thread.

Nos. 316 and 916 are formed from 1/2-inch round steel with a 1/2-inch lag screw thread for attachment. No. 316 is furnished with a 1-inch spring thread and No. 916 with a 1-inch lead thread.

No.	With Lead Thread		With Spring Thread		DIMENSIONS, INCHES				
	Per 100	Ship. Wt. Lb. per 100	No.	Per 100	A	B	C	D Length Thread	
911	\$70.80	222	311	\$70.90	192	2 13/16	2 7/16	4 1/4	4
913	57.60	184	313	57.70	154	2 3/16	1 15/16	3 3/4	3
914	65.00	211	314	65.10	181	2 3/16	3 1/16	4	2 1/2
915	51.40	162	315	51.50	132	2 7/8	1 3/8	4	2 1/2
916	43.50	113	316	43.50	101	2 1/8	1 3/8	4	2 1/2

Hubbard Insulator Hook Bolts

Hot Galvanized



No. 412

Used on rural secondary lines and are furnished for pole diameters from 5 to 13 inches.

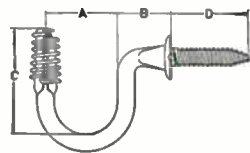
With a square section as a wrench hold just above the base.

No.....	412	413	414
A Dimen., Length of Shank.....inches	8	10	12
B Dimen., Extension from Pole.....inches	4 1/2	4 1/2	4 1/2
C Dimension.....inches	3 3/4	3 3/4	3 3/4
D Dimension.....inches	3/16	3/16	3/16
Ship. Wt. per 100.....pounds	220	240	260

Prices upon application.

Peirce Forged Hook Brackets

Hot Galvanized



Used for running secondaries on poles and for making service attachments on buildings.

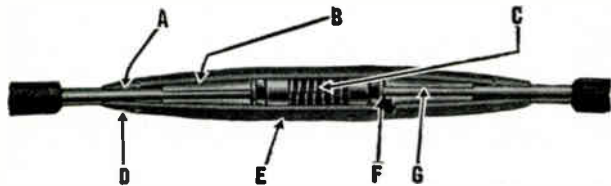
Drop forged from 5/8-inch open hearth steel with a 5/8x2 3/4-inch gimlet point lag screw thread for mounting. Base is 1 1/8-inch diameter with two notches for nails.

No.	Per 100	1-in. Lead Thrd.	1-in. Spring Thrd.
No.	912	312	
Per 100.....	\$67.00	\$65.80	
A Dimension.....inches	2 9/16	2 9/16	
B Dimension.....inches	1 15/16	1 15/16	
C Dimension.....inches	3 3/4	3 3/4	
D Dimension.....inches	2 3/4	2 3/4	
Ship. Wt. per 100.....lb.	184	154	

Reliable Straightline Splices

For Copper Wires and Solid Copperweld

Straightline splices make positive joints that are as strong as the wire in the line. The weather has no serious effect on the splice. Parts are all non-ferrous.



A—Ends fit wire closely, prevent insertion of burred or out of shape wires. Such wires would project between jaws and prevent jaws from clamping. This close fit prevents insertion of over-sized wire, which cannot be held properly.

D—Ends of tube dampen vibrations before they reach clamping jaws.

B—Working taper permits jaws to hold full strength of wires one size smaller. This insures proper holding of used wires that have been stretched or scraped.

C—Strong phosphor bronze spring is needed to prevent the possibility of screwing wire out of splice on a light twisting pull when installing wire.

D—Tapered end permits pulling over cross arm without catching and kinking the wire.

E—Release hole permits easy salvage of splice by engaging washer with pin when jaws are pushed back of clamping position. Screw driver slot release holes furnished when specified.

F—Jaws ride in slots of a husky washer and cannot cluster to permit a strand to slip between them and cause trouble.

G—Jaws are forged silicon bronze, much harder than the wire, to insure that they will hold hard drawn wire repeatedly. Serrations develop approximately full strength of stranded as well as solid wire and do not allow wire to be screwed out of splice when not under tension.

For Copper Wires and Solid Copperweld



The straight line splice will break soft, medium or hard drawn copper, solid, three strand, or seven strand at approximately its full strength.

No.	WIRE SIZE B&S GAGE			Marking	Ship. Wt. Lb. per 100
	Solid	7-Strand	3-Strand		
61	6 & 8	8	...	6 & 8 Sol. 8 Str.	19
41	4	6	6	4 Sol. 6 Str.	25
21	2 & 3	4 & 3	4	2 & 3 Sol. 3 & 4 Str.	37
27	1	2	3	2 Str. 1 Sol.	39
101	1/0	1	2	1 Str. 1/0 Sol.	56
107	2/0	1/0	1	1/0 Str. 2/0 Sol.	60
207	3/0	2/0	1/0	2/0 Str. 3/0 Sol.	78
307	4/0	3/0	...	3/0 Str. 4/0 Sol.	95
407	...	4/0	...	4/0 Str.	138
250	250	MCM	...	250 MCM	144

Prices upon application.

For Copperweld Type A and 3-Strand



The jaws grip the wire over a long enough surface to insure consistent holding of this three strand wire with its long lay.

No.	8A	6A	4A
Wire Size	8A	6A & 7A	4A
Shipping Weight per 100	56	70	85

Prices upon application.

Reliable Straightline Splices

For Steel Wires



Same construction as copper, but steel parts are hot dip galvanized.

No.	WIRE SIZE BWG		Ship. Wt. Lb. per 100
	Solid	3-Strand	
81RSC	8	...	40
61RSC	6	8	50
41RSC	4	6	75

Prices upon application.

Reliable Straightline Splice Reducers

For Copper Wire



For copper wire combinations. Make it possible to change wire size without a double dead end.

No.	WIRE SIZE B&S GAGE				Ship. Wt. Lb. per 100
	LARGE END		SMALL END		
	Solid	Strand	Solid	Strand	
4161	4	6	6 or 8	8	20
2161	2 or 3	3 or 4	6 or 8	8	25
2141	2 or 3	3 or 4	4	6	29
2761	1	2	6 or 8	8	30
2741	1	2	4	6	34
2721	1	2	2 or 3	3 or 4	40
10127	1/0	1	1	2	41
10721	2/0	1/0	2 or 3	3 or 4	43
10727	2/0	1/0	1	2	44
10741	2/0	1/0	4	6	56
107101	2/0	1/0	1/0	1	63
20727	3/0	2/0	1	2	65
207101	3/0	2/0	1/0	1	66
207107	3/0	2/0	2/0	1/0	72
407207	...	4/0	3/0	2/0	90
407307	...	4/0	4/0	3/0	106
250407	250 MCM	...	4/0	4/0	151

For Type A Copperweld Wire

No.	WIRE SIZE B&S GAGE				Ship. Wt. Lb. per 100
	LARGE END		SMALL END		
6A-8A	...	6A	...	8A	60

Prices upon application.

Reliable Straightline Splice Adapters

For Dead Ending Copper Wires



Used with standard straight line splice for dead end on spool or strain insulator.

No.	WIRE SIZE B&S GAGE			Ship. Wt. Lb. per 100
	Solid	7-Strand	3-Strand	
61DD	6 & 8	8	...	6 1/2
41DD	4	6	6	11
21DD	2 & 3	4 & 3	4	18
27DD	1	2	3	22
101DD	1/0	1	2	30
107DD	2/0	1/0	1	37
207DD	3/0	2/0	1/0	50
307DD	4/0	3/0	...	66
407DD	...	4/0	...	95
250DD	250 MCM	...	...	95

Prices upon application.

Reliable Straightline Insulated Splices For Copper Wires



For series street lighting, where an insulated section is necessary.

Distribution secondaries easily sectionalized without removing wires from structure. Insulated splices may be inserted in the line without the necessity of dead-ending which requires cutting in additional wire.

Insulated section made of non-moisture absorbing plastic. All sizes designed to hold full wire strength. Insulated splices used without fuse clips can be supplied with a thin bakelite disc, for identification in the line. Specify when ordering. No additional charge.

Available with 5/8, 1, and 3-inch insulation, additional length of insulation furnished, depending upon voltage. Wire gripping features the same as used on all Reliable Straightline Splices.

Splices with clips for attaching fuses may be secured at a slight increase in cost over the regular Insulated Splice. These clips are adjustable to fit the various size fuses.

Insulated Splice 5/8-Inch Insulation

With Fuse Clips No.	Without Fuse Clips No.	WIRE SIZE B&S GAGE			Length Over All In.	Ship. Wt. Lb. per 100
		Solid	7-Strand	3-Strand		
61XC	61X	6 & 8	8	...	6 3/4	24
41XC	41X	4	6	6	7 1/16	36
21XC	21X	2 & 3	4 & 3	4	8 3/8	47
27XC	27X	1	2	3	8 1/2	52
101XC	101X	1/0	1	2	9	66
107XC	107X	2/0	1/0	1	9 1/8	75
207XC	207X	3/0	2/0	1/0	9 5/8	102
307XC	307X	4/0	3/0	...	9 3/4	115
407XC	407X	...	4/0	...	10 5/8	167
250XC	250X	250	MCM	...	10 7/8	181

Prices upon application.

Reliable Rigid Clevis Type Dead Ends For Copper Wires



For use on standard disc type insulators. Clevis is steel hot galvanized and electro tinned to avoid galvanic action. Easy to install and low in cost.

No.	Solid	WIRE SIZE B&S GAGE		Ship. Wt. Lb. per 100
		7 Strand	3 Strand	
61D	6 & 8	8	...	56
41D	4	6	6	60
21D	2 & 3	3 & 4	4	62
27D	1	2	3	64
101D	1/0	1	2	97
107D	2/0	1/0	1	105
207D	3/0	2/0	1/0	110
307D	4/0	3/0	...	118
407D	...	4/0	...	151
250D	250	MCM	...	160

For Copperweld Type A Wires

Same design as dead end for copper wires using longer jaws as in straightline splice for Type A Copperweld.

8AD	...	8A	...	75
6AD	...	6A & 7A	...	81
4AD	...	4A	...	109

For Steel Wires

Same design as dead end for copper and copperweld wire, using steel parts hot dipped galvanized.

81SD	8BWG	...	...	62
61SD	6BWG	...	8BWG	71
41SD	4BWG	...	6BWG	82

Prices upon application.

Reliable Straightline Dead Ends Straight Thru Dead Ends for Copper Wire



Flexible clevis type. Bail is flexible, easy to loop around spool or strain insulator. Compact, neat in appearance. Dead end cartridge has same features and advantages as standard straightline splices.

No.	WIRE SIZE B&S GAGE			Ship. Wt. Lb. per 100
	Solid	7-Strand	3-Strand	
61FD	6 & 8	8	...	46
41FD	4	6	6	52
21FD	2 & 3	4 & 3	4	70
27FD	1	2	3	74
101FD	1/0	1	2	107
107FD	2/0	1/0	1	114
207FD	3/0	2/0	1/0	151
307FD	4/0	3/0	...	176
407FD	...	4/0	...	202
250FD	250	MCM	...	206

For Type A Copperweld

8AFD	...	8A	...	72
6AFD	...	6A & 7A	...	80
4AFD	...	4A	...	99

Prices upon application.

Reliable Straight-Thru Dead Ends

For Copper Wires



Long rigid clevis type. For use on disc insulators.

A standard type, long rigid clevis is used with dead end cartridge having same advantages as standard straightline splices.

Clevis is steel, hot galvanized with electro, tinned steel reinforcing plate.

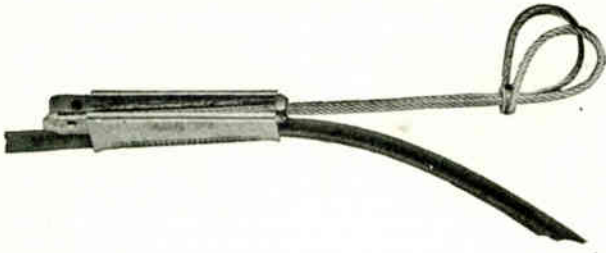
No.	WIRE SIZE B&S GAGE			Ship. Wt. Lb. per 100
	Solid	7-Strand	3-Strand	
61LD	6 & 8	8	...	88
41LD	4	6	6	90
21LD	2 & 3	4 & 3	4	190
27LD	1	2	3	194
101LD	1/0	1	2	210
107LD	2/0	1/0	1	214
207LD	3/0	2/0	1/0	258
307LD	4/0	3/0	...	270
407	...	4/0	...	298
250	250	MCM	...	302

For Type A Copperweld

8ALD	...	8A	...	212
6ALD	...	6A & 7A	...	214
4ALD	...	4A	...	216



Reliable Cable Clamps



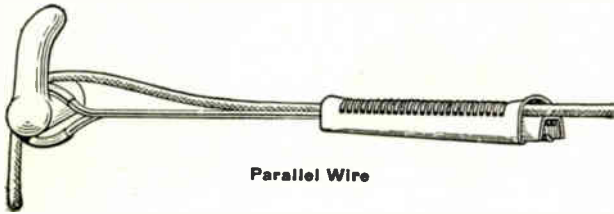
The concentric cable clamp is a low cost clamp that holds the cable securely under all conditions without bending or snubbing or otherwise damaging the insulation.

It is made of non-corrosive metals and has a large margin of strength over field requirements. It is easy to install and neat in appearance.

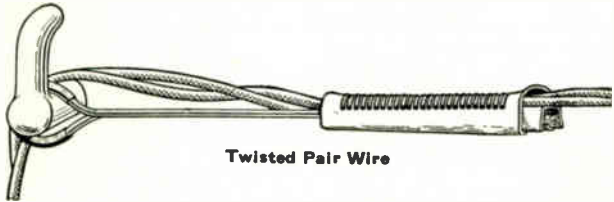
No.	No. Cable	Shape	CABLE SIZE		Bail
			Conductors	Decimal Inches	
82	8	Round	2	.335 to .435	Phos. Bz. Strand
82S	8	Round	2	.335 to .435	Solid Copper
62	6	Round	2	.405 to .530	Phos. Bz. Strand
62S	6	Round	2	.405 to .530	Solid Copper
83	8	Oval	3	.350 to .450 by .770	Phos. Bz. Strand
83S	8	Oval	3	.350 to .450 by .770	Solid Copper
63	6 or 8	Oval	3	.450 to .580 by .900	Phos. Bz. Strand
63S	6 or 8	Oval	3	.450 to .580 by .900	Solid Copper
63A	6 or 8 Arm.	Oval	3	.500 to .620 by .900	Phos. Bz. Strand
63AS	6 or 8 Arm.	Oval	3	.500 to .620 by .900	Solid Copper
43	4	Oval	3	.560 to .720 by 1.100	Phos. Bz. Strand
43S	4	Oval	3	.560 to .720 by 1.100	Solid Copper

Prices upon application.

Type P Reliable Drop Wire Clamps



Parallel Wire



Twisted Pair Wire

An ideal device for attaching No. 17 B.&S. twisted pair or parallel drop wire to poles and buildings.

The clamp makes a very neat appearing installation. It is easy and quick to install. Two of them can be used to make an angular turn. Slack in drop wires can be taken up quickly without leaving any weak spots.

THE P CLAMP is wedge-shaped, with a copper wire loop at one end for hooking over a common drive hook, masonry hook or porcelain knob. When using twisted pair wire, it is essential to parallel the wires through the clamp.

THE R CLAMP for resistance braid (heavy duty drop wire) is the same design as the P clamp but is slightly larger.

No. in carton, 25. Standard package quantity, 500.
 No. P R
 Weight per 100. pounds 77 83

Reliable Standard Drive Hooks

Standard drive hooks as illustrated above are 5¼ inches long, heavily galvanized.

Shipping weight per 100, 28 pounds.

National Nicopress Splicing Sleeves, Dead-End Sleeves, and Tools

For Telephone, Telegraph, and Signal Line Wires

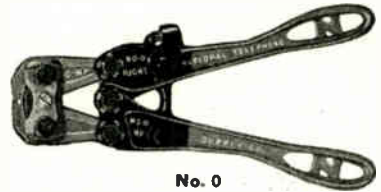
In the making of a Nicopress splice, the sleeves which are lined with a metal alloy, harder than the metal of either sleeve or conductor, are pressed onto the conductors with the special Nicopress tool. The hard alloy is forced into the softer metals of sleeve and conductor, forming practically a cold weld. The resultant joint has a strength that is equal to or greater than the rated breaking strength of the conductor, and is so tight that the conductor cannot pull out.

Nicopress splices will withstand the toughest strains of vibration. In addition the use of Nicopress splices assures a high electrical conductivity.

National Nicopress Tools

For Telephone, Telegraph, and Signal Work

In making the splice by the Nicopress method the tool must be of a size that is convenient and practical for the lineman to handle either in the air or on the ground. It must be so efficient in use that pressure can be applied with a certainty that each compression made will be exactly as required.



No. 0

No. 0. For telephone, telegraph, and signal lines. Length, 10 inches. Weight, 1¾ pounds.



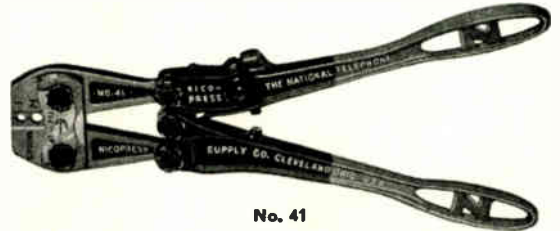
No. 31

No. 31. For BB, 85, and 135, 12 B.W.G. galvanized steel wire. Length, 11 inches. Weight, 2 pounds.



No. 17

No. 17. For drop bridle and inside wire. Length, 8 inches. Weight, 9 ounces.



No. 41

No. 41. For power distribution; 4 B.&S. gage wire and smaller. Length, 15 inches. Weight, 3½ pounds.



No. 51

No. 51. For copper, copperweld and aluminum power lines; 1 B.&S. gage wire and smaller. Length, 18 inches. Weight, 4 pounds.

National Nicopress Splicing Sleeves

For Telephone, Telegraph, and Signal Line Wires



Sleeve



Completed Splice

For Hard Drawn Copper Wire

B & S Gage	N.B.S. Gage	For Use in No. 0 Tool For Groove	Stock No.	Approx. Shipping Wt. Lb. per 100
12	14	C	1-080C	1 1/2
12 with 9 O.D.	14	D	1-080D	1 1/2
12 with 8 O.D.	14	E	1-080E	2 1/2
10	12	C	1-102C	1 1/2
10 with 9 O.D.	12	D	1-102D	1 1/2
10 with 8 O.D.	12	E	1-102E	2
9	11	D	1-114D	1 1/2
9 with 8 O.D.	11	E	1-114E	2
8	10	E	1-128E	2
8 with 6 O.D.	10	J	1-128J	4
6	8	J	1-162J	5

For BB Galvanized Wire

Galvanized Steel Sleeves

B.W.G. Gage	For Use in No. 0 Tool For Groove	Stock No.	Approx. Shipping Wt. Lb. per 100
14	C	5-083C	2
12	C	5-109C	1 1/2
10	Q	5-134Q	2
9	G	5-148G	3 1/2
8	G	5-165G	3

Galvanized Copper Sleeves

14	C	2-083C	1 1/2
12	D	2-109D	1 1/2
10	J	2-134J	3
9	J	2-148J	3 1/2
8	J	2-165J	5

Galvanized Bronze Sleeve

12	C	4-109C	1 1/2
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For "85" Galvanized Wire

Galvanized Steel Sleeves

14	C	5-083C	2
12	C	5-109C	1 1/2
12 (In Tool No. 31-D)	D	5-109D85	2
10	Q	5-134Q	2
9	G	5-148G	3 1/2

Galvanized Copper Sleeves

14	C	2-083C	1 1/2
10	J	2-134J85	4 1/2

For "135" Galvanized Wire

Galvanized Steel Sleeve

12 (In No. 31-D Tool)	D	5-109D135	3 1/2
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*Larger diameter sleeve than standard for use in the larger tool-groove.

†Holds rated strength only.

National Nicopress Sleeves

For Drop, Bridle, and Inside Wires



Completed Splice

Splices made with Nicopress sleeves have maximum strength and tightness, are small, compact, and neat. There is a saving of wire and tape due to the fact that the wires are butted and not overlapped. Splicing is quickly done with the light, compact, one-hand-operated No. 17 type tool, completely eliminating need of solder.

For Wire	For Use in Tool No.	Stock No.
9-20-22 B&S Copper	17-2	3-036A
7-18 A.W.G. Copperweld	Same	3-045B
7 B&S Bronze		
7-18 B&S Copper		
6 B&S Copper	17-2	3-051B
4 B&S Copper	17-2	3-064B
8-19 B.W.G. Ironite	17-2	4-049B

National Nicopress Copper Splicing Sleeves

For Copper Light and Power Conductors



Nicopress Power Sleeve



Completed Nicopress Splice

For splicing power distribution lines Nicopress sleeves and tools are highly efficient. Splices are quickly made; completed splices have maximum strength and tightness. Conductors will not pull out of sleeves. Splices are neat in appearance and not much larger in diameter than the wire, have low resistance, and are butted and not overlapped—no additional wire is required. The simple compression method of making the Nicopress splice assures proper handling of the wire.

Hard Drawn or Medium Drawn Solid Wire

B&S Gage	Type of Tool	Tool Groove	Stock No.
8	0, 41, or 51	J	1-128J
6	0, 41, or 51	J	1-162J
6	41 or 51	M	1-162M
4	41 or 51	M	1-204M
4	41 or 51	P	1-204P
3	51	R	1-229R
2	51	T	1-258T
1	51	X	1-289X

Hard Drawn Strand

6 7 Strands	0, 41, or 51	J	1-162/7J
4 7 Strands	41 or 51	M	1-204/7M
2 3 Strands	51	X	1-258/3X
2 7 Strands	51	X	1-258/7X

Soft Drawn Solid Wire

6	0, 41, or 51	J	1-162J Soft
4	41 or 51	M	1-204M Soft
3	51	R	1-229R Soft
2	51	T	1-258T Soft

Soft Drawn Strand

2 7 Strands	51	X	1-258/7X Soft
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National Nicopress Reducing Sleeves

For Copper Light and Power Conductors



B&S Gage	Type of Tool	Tool Groove	Stock No.
6 Solid to 8 Solid	0, 41, or 51	J	1-162x128J
6 Solid to 6 Strand	0, 41, or 51	J	1-162x162/7J
4 Solid to 6 Solid	41 or 51	M	1-204x162M

Other sizes of reducing sleeves in stock.

National Nicopress Steel Sleeves

For 80 or 130 High Tensile Steel Power Conductors



Nicopress Steel Power Sleeve



Completed Nicopress Splice

Solid Wire

B.W.G.	Type of Tool	Tool Groove	Stock No.
8 (For 80 Wire Only)	51	G	5-165G
8	3	L	5-165L
6	3	S	5-203S
4	3	W	5-238W

Stranded

8 (3-Wire)	3	L	5-165/3L
6 (3-Wire)	3	S	5-203/3S
4 (3-Wire)	3	W	5-238/3W
1/4" Low Tensile (3-Wire)	51	N	5-3/114N
1/4" High Tensile (7-Wire)	3	U	5-7/080U

National Amerductor Splicing Sleeves



For splicing high tensile strength Amerductor composite conductors.

SCP indicates steel-copper-plain; SCG indicates steel-copper-galvanized. Nicopress sleeves for these conductors are of galvanized copper.

The peculiar lay in the stranding of certain type Amerductor conductors does not lend itself to the compression type splice. In these cases the special National twist sleeves are recommended.

		*Nicopress		
Conductor	Sleeve		Conductor	Sleeve
12SCP } 12SCG }	2-12SC-P		8SCP } 8SCG }	2-8SC-P

*For use in No. 51 tool.

Nicopress Splicing Units

For Aluminum Cable, Steel Reinforced (A.C.S.R.)



Steel Sleeve



Aluminum Sleeve



Completed Splice

The Nicopress method of splicing A.C.S.R. makes the work easier, speeds up completion of the job, and assures workmanlike splices of maximum strength. Every splice is small and compact and exceedingly neat in appearance.

The Nicopress unit for splicing A.C.S.R. consists of two sleeves, one aluminum for aluminum strands, and one of galvanized steel for the inside steel core and the practical convenient No. 51 Nicopress tool. The Nicopress method of making the A.C.S.R. splice does not injure either the steel core or the aluminum strand.

Specify gage and stranding when ordering.

A.C.S.R. Gage	Stranding	Stock Legend for Tool	Stock Ward for Splicing Unit	Shipping Weight Pounds per 100
6	6/1	51-Apple	Apple	24
5	6/1		Grape	24
4	6/1		Orange	28
4	7/1	51-Orange	Tangerine	28
3	6/1		Grapefruit	32
2	6/1	51-Peach	Peach	36
2	7/1		Pear	36
1	6/1		Quince	44
1/0	6/1	51-Plum	Plum	50

Nicopress Split Aluminum Repair Sleeves

For 6/1 or 7/1 A.C.S.R.



Repair Sleeve



Partial Repair Splice



Completed Repair Splice

Specify gage and length when ordering.

A.C.S.R. Gage	Length Inches	Stock Legend for Tool	Shipping Weight Pounds per 100
6	12	51-Apple	11
5	12	51-Apple	11
4	8	51-Orange	19
4	12		29
2	8	51-Peach	22
2	12		32
1/0	8	51-Plum	25
1/0	12		85

National Nicopress Reducing Sleeves

For Telephone and Telegraph Wires



B&S Gage	For Use in No. 0 Tool For Groove	Stock No.	Approx. Shipping Wt. Lb. per 100
10 to 12	C	1-102x080C	1 1/2
9 to 12	D	1-114x080D	1 1/2
9 to 10	D	1-114x102D	1 1/2
8 to 12	E	1-128x080E	2
8 to 10	E	1-128x102E	2
8 to 9	E	1-128x114E	2
6 to 10	J	1-162x102J	3 1/2
6 to 9	J	1-162x114J	3 1/2
6 to 8	J	1-162x128J	3 1/2

Other sizes of reducing sleeves in stock at factory.

National Nicopress Copper Splicing Sleeves

For Copperweld Wire



Nicopress Splicing Sleeve



Completed Nicopress Splice

The Nicopress method of splicing copperweld and copperweld-copper conductors has been thoroughly tested and has proven efficient in meeting the most exacting of specifications.

A.W.G. or Conductor No.	Solid			Approx. Shipping Wt. Lb. per 100
	Type of Tool	Tool Groove	Stock No.	
12	0	C	1-080C	1 1/2
12	0 or 31	D	1-080D	1 1/2
12	0 or 41	J	1-080J	2 1/2
10	0 or 41	J	1-102J	6 1/2
8	41 or 51	M	1-128M	8 1/2
8	51	P	1-128P	...
6	51	M	1-128M	8 1/2
4	51	Y	1-204Y	26 1/2

Stranding	Stranded			Approx. Shipping Wt. Lb. per 100
	Type of Tool	Tool Groove	Stock No.	
3 No. 12 Strands	41 or 51	M	1-3/081M	7 1/2
3 No. 10 Strands	51	U	1-3/102U	18 1/2
3 No. 7 Strands	3	Z	1-3/144Z	25

Type A Copperweld-Copper

A.W.G.	Type of Tool	Tool Groove	Stock No.	Approx. Shipping Wt. Lb. per 100
8A	41 or 51	M	1-8A-M	...
8A	51	P	1-8A-P	...
7A	51	P	1-7A-P	15 1/2
6A	51	P	1-6A-P	15 3/8
4A	51	X	1-4A-X	26
2A	3	Z	1-2A-Z	51

Type C Copperweld-Copper

8C	41 or 51	M	1-3/081M	...
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Type D Copperweld-Copper

9 1/2 D	41 or 51	M	1-3/081M	...
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Type F Copperweld-Copper—2 Sleeves

1	51	Y and J	1-F289YJ	3
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National Nicopress Dead-End Sleeves

For Telephone, Telegraph, and Signal Line Wires



Offset Dead-End Sleeve and Completed Dead-End

The outstanding advantages secured through the use of the Nicopress method of dead-ending are: simplicity and speed of installation; maximum tightness and strength of completed dead-ends; the remarkable degree to which they withstand vibration; the provision for a tail of any desired length in the offset dead-end sleeves; the fact that no special tools are needed as work is done with same tool used for making Nicopress line splices; the elimination of sleeve twist and all danger of damaging or weakening conductors by twisting.

For Copper Wire Copper Offset Dead-Ends

B. & S. Gage	N.B.S. Gage	For Use in No. 0 Tool For Groove	Stock No.	Approx. Shipping Wt., Lb. per 100
12	14	C	91-080C	1 1/2
*12 with 9 O.D.	14	D	91-080D	1 3/4
*12 with 8 O.D.	14	E	91-080E	2 1/2
10	12	C	91-102C	1 1/2
*10 with 9 O.D.	12	D	91-102D	1 1/2
*10 with 8 O.D.	12	E	91-102E	1 3/4
9	11	D	91-114D	1 1/2
*9 with 8 O.D.	11	E	91-114E	1 3/4
8	10	E	91-128E	1 1/2
*8 with 6 O.D.	10	J	91-128J	5 1/2
6	8	J	91-162J	4 1/2

*Indicates larger diameter sleeve than standard for use in the larger tool-groove.

For BB or "85" Galvanized Wire Steel Sleeve

B. & S. Gage	For Use in No. 0 Tool for Groove	Stock No.	Approx. Shipping Wt., Lb. per 100
14	C	95-083C	1 1/4
†12	C	95-109C	1 1/2
12 (In No. 31-D Tool)	D	95-109D 85	1 3/4
10	Q	95-134Q	1 3/4

Galvanized Copper Sleeve

14	C	92-083C	1 1/2
†12	D	92-109D	1 1/2
9	J	92-148J	5
†8	J	92-165J	5

Galvanized Bronze Sleeve

12 (For BB Wire Only)	C	94-109C	1 1/2
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†Holds rated strength of "85" only.

For "135" Galvanized Wire

Steel Sleeve

12 (In No. 31-D Tool)	D	95-109D 135	2 1/4
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Offset Type

A.W.G. or Conductor No.	Type of Tool	Tool Groove	Stock No.
12	0	C	91-080C
12	0 or 31	D	91-080D
12	0	E	91-080E
10	0 or 41	J	91-102J
9	0 or 41	J	91-114J
8	41 or 51	M	91-128M

Type A—Copperweld-Copper

8A	41 or 51	P	91-8A-P
7A	51	P	91-7A-P
6A	51	P	91-6A-P
4A	51	X	91-4A-X

National Nicopress Copper Dead-End Sleeves

For Copperweld Wire, Telephone, Telegraph, and Power Sizes

Type C

A.W.G. or Conductor No.	Type of Tool	Tool Groove	Stock No.
8C	41 or 51	M	91-3/081M

Type D

9 1/2 D	41 or 51	M	91-3/081M
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Suspension Type

8	41 or 51	M	71-128M
6	51	P	71-162P
4	51	Y	71-204Y
3 No. 12 Strands	41 or 51	M	71-3/081M
3 No. 10 Strands	51	U	71-3/102U
8A	41 or 51	M	71-8A-M
8A	51	P	71-8A-P
7A	51	P	71-7A-P
6A	51	P	71-6A-P
4A	51	X	71-4A-X

National Nicopress Copper Dead-End Sleeves

For Copper Light and Power Conductors

Offset Type—Hard Drawn or Medium Drawn Solid Wire



Completed Offset Dead-End

B. & S. Gage	Type of Tool	Tool Groove	Stock No.
8	0, 41, or 51	E	91-128E
*8 in 6 Groove	0, 41, or 51	J	91-128J
6	0, 41, or 51	J	91-162J
4	41 or 51	M	91-204M
4	41 or 51	P	91-204P
3	51	R	91-229R
2	51	T	91-258T

Offset Type—Soft Drawn Solid Wire

6	0, 41, or 51	J	91-162J Soft
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Suspension Type—Hard Drawn or Medium Drawn Solid Wire



Completed Suspension Dead-End

6	0, 41, or 51	J	71-162J
4	41 or 51	M	71-204M
3	51	R	71-229R
2	51	T	71-258T
1	51	X	71-289X

*Larger diameter sleeve than standard for use in larger tool-groove.

National Nicopress Suspension Type Dead-Ends

For 80 and 130 High Tensile Steel Power Conductors



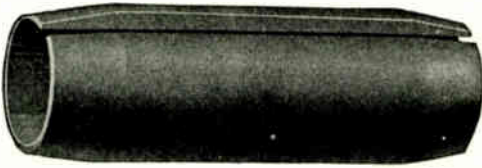
Solid Wire

B.W.G.	Type of Tool	Tool Groove	Stock No.
8	3	L	75-165L
6	3	S	75-203S
4	3	W	75-238W

Stranded Wire

8 (3-Wire)	3	L	75-165/3L
6 (3-Wire)	3	S	75-203/3S
4 (3-Wire)	3	W	75-238/3W
1/4" Low Tensile (3-Wire)	51	N	75-3/114N
1/4" High Tensile (7-Wire)	3	U	75-7/080U

National Split Tinned Copper Connectors
For Splicing Underground Power Transmission Cables
N.E.L.A. Specifications



Sleeve split entire length to enable hot solder to flow evenly around cable. Covered with a coating of tin to permit easy soldering. Beveled ends.

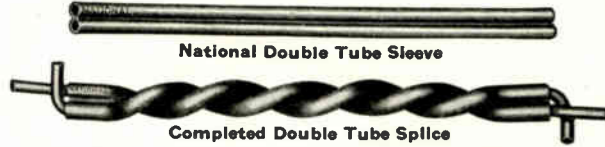
Size Conductor	Inside Diameter Inches	Length Inches	Approx. Shipping Wt., Lb. per 1000
12 B. & S. Solid	.086	1 1/2	5
11 B. & S. Solid	.096	1 1/2	5
10 B. & S. Solid	.107	1 1/2	5
10 B. & S. Strand	.116	1 1/2	5
9 B. & S. Solid	.119	1 1/2	5 1/2
8 B. & S. Solid	.133	1 1/2	6
8 B. & S. Strand	.151	1 1/2	6 1/2
7 B. & S. Solid	.149	1 1/2	6 1/2
7 B. & S. Strand	.169	1 1/2	7 1/2
6 B. & S. Solid	.167	1 1/2	8
6 B. & S. Strand	.189	1 1/2	12
5 B. & S. Solid	.187	1 1/2	12
5 B. & S. Strand	.211	1 1/2	15
4 B. & S. Solid	.209	1 1/2	15
4 B. & S. Strand	.237	2	20
3 B. & S. Solid	.234	2	20
3 B. & S. Strand	.265	2	25
2 B. & S. Solid	.263	2	25
2 B. & S. Strand	.297	2	35
1 B. & S. Solid	.294	2	35
1 B. & S. Strand	.337	2	40
0 B. & S. Strand	.378	2	50
00 B. & S. Strand	.423	2	65
000 B. & S. Strand	.475	2	85
0000 B. & S. Strand	.533	2 1/2	125
250,000 C.M.	.581	2 1/2	150
300,000 C.M.	.635	2 1/2	180
350,000 C.M.	.690	2 1/2	210
400,000 C.M.	.740	3	280
450,000 C.M.	.784	3	320
500,000 C.M.	.826	3	340
550,000 C.M.	.868	3	410
600,000 C.M.	.906	3 1/2	500
650,000 C.M.	.948	3 1/2	520
700,000 C.M.	.983	3 1/2	540
750,000 C.M.	1.018	3 1/2	580
800,000 C.M.	1.052	4	620
850,000 C.M.	1.083	4	690
900,000 C.M.	1.115	4	750
950,000 C.M.	1.145	4	840
1,000,000 C.M.	1.175	4 1/2	1030
1,250,000 C.M.	1.320	4 1/2	1200
1,500,000 C.M.	1.440	5	1650
1,750,000 C.M.	1.560	5 1/2	2100
2,000,000 C.M.	1.664	6	2725
2,500,000 C.M.	1.855	6 1/2	3300

National Tinned Copper Cable Sleeves



B&S Gage	Type S For Straight Splices			Type D For Butt Splices		
	Diam. Wire In.	Length In.	Approx. Ship. Wt. Lb. per 100	Diam. Wire In.	Length In.	Approx. Ship. Wt. Lb. per 100
16	.051	1 1/2	.3	.051	1 1/2	.5
15	.057	1 1/2	.3	.....	.....	.....
14	.064	1 1/2	.4	.064	1 1/2	.6
13	.072	1 1/2	.4	.072	1 1/2	.6
12	.080	1 1/2	.4	.....	.....	.....
10	.102	1 1/2	.5	.102	1 1/2	.75
9	.114	1 1/2	.5	.....	.....	.....

National Twist Sleeves
National Double Tube Copper Sleeves



Made from the best grade of pure copper, exact to size.

Solid B&S Gage	Solid B.W.G. Gage	Solid N.B.S. Gage	B&S Gage 7-Wire Stranded Cable	Length Inches	Approx. Ship. Wt. Lb. per 100
22	..	..	..	1 1/2	.3
20	..	..	..	1 1/2	.3
19	..	..	..	1 1/2	.4
18	..	..	..	4	1.5
17	..	..	..	4	1.5
16	..	..	..	4	1.8
14	16	..	..	4	2.0
12	14	14	..	4 1/2	2.3
10	12	12	..	4 3/4	3.0
9	11	..	..	5 1/4	5.0
8	10	..	..	5 1/2	6.0
7	9	..	..	5 3/4	8.5
6	8	..	..	6	10.0
5	..	..	..	6	11.5
4	..	..	..	8	16.0
4	..	..	..	6	13.0
3	..	..	4	8 3/4	19.0
2	..	..	3	9 1/2	25.0
1	..	..	2	12	33.5
0	..	..	1	14	55.0
00	..	..	0	16	67.5
000	..	..	00	18	102.5
0000	..	..	000	20	140.0
.....	..	..	0000	20	151.0

Also available in tinned copper, split or combination, and combination split sleeves.

National Double Tube Tinned Steel Sleeves							
B.W.G. Gage	16	14	12	11	10	9	8
Length.....in.	4	4 1/2	4 3/4	5 1/2	5 1/2	5 3/4	6 3/4
Approx. Ship. Wt. per 100.....lb.	2 1/2	3	3 1/2	4	5 1/2	6	9

National Seamless Single Tube Copper Sleeves
For Copper and Copperweld Wire and Strand



Made from highest grade electrolytic copper, formed exactly to size and furnished in a temper that permits easy twisting. In two types, oval and grooved oval. Specify type and whether solid or stranded.

Solid B&S Gage	B&S Gage 7 or 19-Wire Stranded Cable	Length Inches	Approx. Ship. Wt. Lb. per 100
10	..	4 1/4	3 1/2
9	..	5 1/4	4 1/2
8	..	5	6
6	..	6	10
4	5	8	16
3	4	8 1/2	19
2	3	9 3/4	25
1	2	11	33 1/2
0	1	12 1/2	55
00	0	14	67 1/2
000	00	16	102
0000	000	18	140
.....	0000	19 1/2	151
.....	250,000 C.M.	21	180
.....	300,000 C.M.	21 3/4	220
.....	500,000 C.M.	24	320

For Copperweld-Copper Conductors (Oval)							
Conductor No.	8A	7A	6A	5A	4A	3A	2A
Length.....in.	8	8 1/2	8 1/2	9 3/4	11	12 1/2	14
Approx. Ship. Wt. per 100.....lb.	16	19	19	25	33 1/2	55	67 1/2
For Extra High Strength Copperweld Messenger and Ground Wires							
Size.....in.	1/4	9/32	5/16	3/8	7/16	1/2	5/8
Length.....in.	12	14	16	20	24	26	26
Approx. Ship. Wt. per 100.....lb.	50	60	90	120	190	210	325

Reliable Single Tube Seamless Copper Sleeves

For Copper Wires



Conform to tentative specifications suggested by Overhead System Committee of N.E.L.A.

B&S Gage Solid	B&S 7-Wire Strand	Length Inches	B&S Gage Solid	B&S 7-Wire Strand	Length Inches
.....	500,000 C.M.	24	1	2	11
.....	300,000 C.M.	21 $\frac{3}{4}$	2	3	9 $\frac{3}{4}$
.....	250,000 C.M.	21	3	4	8 $\frac{1}{2}$
.....	0000	19 $\frac{1}{2}$	4	5	7 $\frac{1}{2}$
0000	000	18	5	..	6 $\frac{3}{4}$
000	00	16	6	..	6
00	0	14	8	..	5
0	1	12 $\frac{1}{2}$	..	..	..

Prices upon application.

For Copperweld Wires

Type A Composite	B&S 3 Strand	Length Inches	Type Composite	B&S 3 Strand	Length Inches
2A	3 No. 6	14	6A	3 No. 10	8 $\frac{1}{2}$
3A	3 No. 7	12 $\frac{1}{2}$	8A	.....	7 $\frac{1}{2}$
4A	3 No. 8	11	..	3 No. 12	6 $\frac{3}{4}$
5A	3 No. 9	9 $\frac{3}{4}$	..	.....	.....

Prices upon application.

For Messenger or Ground Wires

Size Inches	Length Inches	Wt. Lb. per 100	Size Inches	Length Inches	Wt. Lb. per 100
1/4	12	50	7/16	24	190
5/32	14	60	1/2	26	210
5/16	16	90	5/8	26	325
3/8	20	120	..	..	..

Prices upon application.

Plain copper for copper or copperweld cable. Tinned copper for galvanized cable.

Reliable Double Tube Copper Sleeves



B&S Gage Solid	B&S 7-Wire Strand	BWG NBS	Length Inches	Ship. Wt. Lb. per 1000
.....	0000	..	20	151.0
0000	000	..	20	140.0
000	00	..	18	102.5
00	0	..	16	67.5
0	1	..	14	55.0
1	2	..	12	33.5
2	3	..	9 $\frac{1}{2}$	25.0
3	4	..	8 $\frac{3}{4}$	19.0
4	..	..	6 $\frac{3}{4}$	13.0
4	..	..	8	16.0
5	..	..	6	11.5
6	..	8	6 $\frac{3}{4}$	10.0
7	..	9	5 $\frac{3}{4}$	8.5
8	..	10	5 $\frac{3}{4}$	6.0
9	..	11	5 $\frac{1}{4}$	5.0
10	..	12	4 $\frac{3}{4}$	3.0
12	..	14	4 $\frac{1}{2}$	2.3
14	..	16	4	2.0
16	..	..	4	1.8
17	..	..	4	1.5

Prices upon application.

Double Tube Steel Sleeves

BWG No.	Length Inches	Ship. Wt. Lb. per 1000	BWG No.	Length Inches	Ship. Wt. Lb. per 1000
8	6 $\frac{3}{4}$	90	12	4 $\frac{3}{4}$	35
9	5 $\frac{3}{4}$	60	14	4 $\frac{1}{2}$	30
10	5 $\frac{1}{2}$	55	16	4	25

Prices upon application.

Rolled Seamless Connectors

For splicing telephone, telegraph, signal and power line conductors. Forms splices of higher strength and lower resistance than the wire itself.



This type of connector shown above consists of a short piece of seamless copper tubing.



A slight dent midway between the ends, serves as a stop for the ends of the wires and insures equal distribution of the gripping action upon the wires to be spliced. The rounded ends slip easily over pole cross arms.



The inside surface of this connector is lacquered. Embedded in the lacquer are hard carbon particles that lock both ways on the conductor and in the connector as the connector is rolled on the wire.

Minimum shipment of each size, 100 connectors.

AMERICAN WIRE GAGE			
No.	Dec. Equiv. Inches	Per 1000	Approx. Ship. Wt. Lb. per 1000
4	0.204	.....	115
6	0.162 or 0.165	.....	75
8	0.128	.....	66
9	0.114	.....	35
10	0.102 or 0.104	.....	30
12	0.081 or 0.080	.....	31

For intermediate or odd sizes, use price applying to next larger size connector shown in table. Such intermediate or odd size connectors will be rolled in corresponding next larger groove on rolling tool.

Rolling Tools

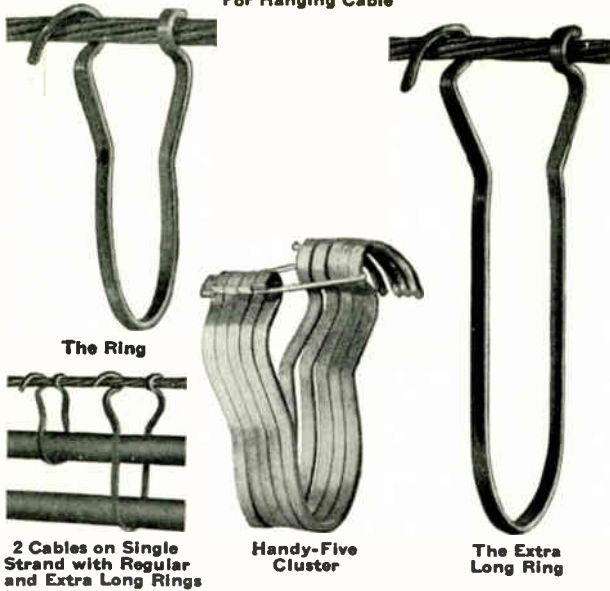
Used to make splices on ground or upon pole cross arms. Rolls give tremendous pressure upon connector, but are easily turned by ratchet handle mounted on auxiliary shaft. Roll faces designed with flat sections so that wire may be inserted and connector started in its proper groove and completed splice removed from tool. Body of tool, tempered steel forging; rolls, stainless steel.



Type	Each	Size A.W.G.	Net Wt. Lb.	Approx. Ship. Wt. Lb.
A	4, 6, 8	8 $\frac{1}{2}$	12
B	6, 8, 10, 12	4 $\frac{1}{2}$	8
C	8, 9, 10, 12	4 $\frac{1}{2}$	8
D	6, 9, 10, 12	4 $\frac{1}{2}$	8
E	6, 8, 9	.....	..



**National Galvanized Cable Rings
With Tension Grip
For Hanging Cable**



Quickly and easily placed on the messenger, and once in position, will not slip along or jump off, remaining rigid in position because of the tension grip design. Use of these rings enables pulling the cable from either direction and eliminates necessity of reriding the messenger to replace or respace rings. Made from flat, high carbon steel wire with rounded edges. Hot-dip galvanized, with an even deep coating of zinc assuring smoothness and long life.

Gathered in Handy-Five Clusters for convenience in handling. This simple method of gathering, prevents hooking together of rings and does away with all ground litter.

National Regular Cable Rings

Size In.	Cable Diameter Inches	*Strand Size	Std. Pkg.	Approx. Ship. Wt. Lb. per 1000
1½	½ to 1½	....	1000	47
2 Light	15/16 to 1 1/16	....	500	66
2 Heavy	15/16 to 1 1/16	....	500	90
2½	1 1/16 to 1 1/8	....	500	106
3	1 1/8 to 2 1/4	....	400	125
3½	2 1/4 to 2 5/8	....	300	140
4	2 5/8 to 3	....	250	200
4½	3 to 3 1/2	....	250	210

National Copperweld Cable Rings

Size In.	Strand Size	Std. Pkg.	Approx. Ship. Wt. Lb. per 1000
1½	5/16 and 3/8	1000	43
2	5/16 and 3/8	1000	96
2½	3/8	1000	110
3	1/2	1000	125
3½	1/2	1000	140

Also furnished in calsun bronze.

National Extra Long Cable Rings

Size In.	*Strand Size	Length Under Strand Inches	Std. Pkg.	Approx. Ship. Wt. Lb. per 1000
1½	4 3/4	500	114
2	5 1/4	300	170
2½	6 3/4	250	216
3	7 1/2	200	255
3½	8	200	270

Can also be furnished in copperweld and calsun bronze.

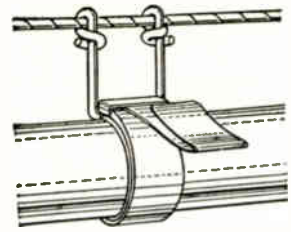
*Made in all strand sizes. Specify size desired.



National Cable Ring Saddles

Furnished in aluminum, galvanized steel, and bronze. Made in sizes 1½, 2, 2½, 3, and 3½ inches.

Aerial Cable Supports



The purpose of aerial cable supports is to supply flexible supports at each side of the pole to prevent ring cut. The strap is wrapped around the cable three times over itself passing through the hinge member. Adjustable to any height. Provides a flat bearing which will not injure the cable sheath.

The supports are placed two on each side of each pole. They are placed 20 inches apart.

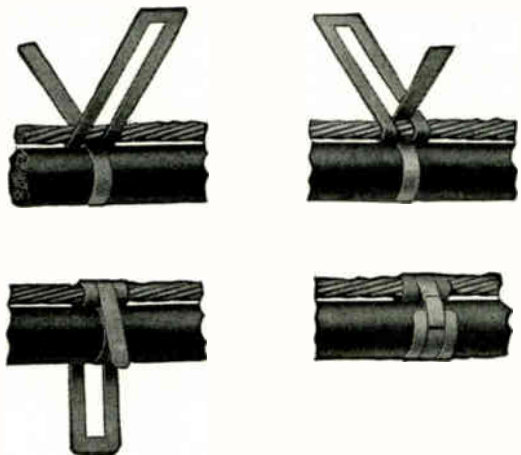
The aerial cable support is composed of a zinc strip, hinge joint member which holds the free end of the zinc strip in position on a soft galvanized U-shaped wire, 1/2 inches long.

No.	Per 1000	Length Strap Inches	Maximum Diameter of Cable or Sleeve Inches	Maximum Circumference of Cable or Sleeve Inches	Standard Carton	Weight per 1000
1	\$75.00	10	3/4	2 5/8	500	8
2	91.00	16	1 1/16	3 5/8	500	13
3	107.00	22	2	6 5/8	300	14
4	130.00	28	2 5/8	8 5/8	300	14
5	147.00	34	3 1/8	10	300	18
6	189.00	50	†5	15 1/16	200	26
7	225.00	64	†6 1/2	20 1/2	200	31
*8	264.00	64	†6 1/2	20 1/2	200	38

*No. 8 is exactly the same as No. 7 except No. 8 has 1-inch long U-shaped wire on end instead of 5-inch long wire as on regular supports.

†Maximum diameter of sleeve.

Reliable Davidson Cable Hangers



Illustrating Method of Fastening

Cable hangers have proved that wear on cable sheath can be eliminated. Entire sheath is grounded solidly to messenger and grade clamp is not needed as cable does not creep on steepest grade.

Hanger is rust-proof and unusually neat in appearance. Maintenance cost of aerial cable is materially reduced as enclosure of entire cable and messenger with cable mold in trees is facilitated.

No.	1	2	3	4
Length.....	7 7/8	11	14	16
Capacity, Strand.....	5/16	3/8	3/8	1/2
Capacity, Cable.....	3/4	1 1/8	1 5/8	2
Ship. Wt. per 1000.....	50	65	105	135

National Zinc Cable Clips



The broad flat zinc strap of the assembly provides a wide surface for the cable to rest on and the hooks are so constructed that they move on the strand allowing the necessary play as the cable vibrates, expands, and contracts.

Specify length of strap when ordering.

Strap Length . . . in.	4-5	6-7-8	9-10-11	12-14	Over 14 to 20
Approx. Ship. Wt. per 100 lbs.	7	8½	10	11	14

National Aerial Cable Supports

Broad, flat smooth zinc strap of support, wrapped 3 times around cable in installation, assures maximum strength and permanence. Support wires applied so that they do not bind but slide easily, to assure flexibility as cable vibrates, expands, contracts or sways.



MAXIMUM SIZE CABLE, INCHES		Length Strap Inches	Lgth. Wire Support Inches	Stock No.	Approx. Ship. Wt. Lb. per 100
Diameter	Circum.				
¾	2½	10	5	1	8
1⅜	4½	16	5	2	10
2	6½	22	5	3	12½
2½	8½	28	5	4	15½
3¾	10	34	5	5	17
5 Sleeve	15¼	50	5	6	24½
6½ Sleeve	20½	64	5	7	28
6½ Sleeve	20½	64	10	8	30½

National Marine Cable Hangers

Specify length of loop.



Maximum Diameter Cable Inches	Length Loop Inches	Approx. Ship. Wt. Lb. per 1000
7/8	9	35
1	10	36
1⅛	11	37
1¼	12	38
1½	13	39
1⅝	14	40
1¾	15	42
2	16	45
2¼	18	49
2½	20	62

National Marine Twine

Furnished in 1-pound balls.



No.	415	416
Ply	2	3

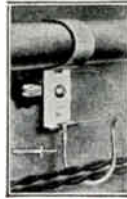
American Tarred Marline

A 3-yarn tarred jute twine used by the marine trade; also by manufacturers of fittings for bundling; and by cable, conduit, electric appliance, tent and awning manufacturers as well as contractors and telephone companies.

Put up in 1-pound balls.
Prices upon application.



Diamond Combination Cable Clamps



With Detachable Bridle Rings

Provides an economical and quickly applied fastening for attaching lead covered cables and parallel runs of bridle wire to walls built of any material.

Without Bridle Rings or Screw Anchors

No.	Per 100	SIZE CLAMP, IN. Diam. Cable	Diam. Conduit or Pipe	Diam. Wood Sorew and Length	Size of Screw Anchor	Wt., Lbs. per 100
0A	\$5.00	9/16	1/4	14x1¼"	10-14x1"	3½
0	5.20	11/16	3/8	14x1¼"	10-14x1"	4
1	6.45	13/16	1/2	14x1¼"	10-14x1"	4½
2A	9.30	1	3/4	14x1¼"	10-14x1"	7
2	9.70	13/16	3/4	14x1¼"	10-14x1"	7½
3A	14.00	13/8	1	14x1¾"	10-14x1½"	14½
3	15.00	13/16	1¼	14x1¾"	10-14x1½"	15½
4A	16.90	17/8	1½	14x1¾"	10-14x1½"	18½
4	18.75	23/16	2	14x1¾"	10-14x1½"	20
5	19.75	23/8	2½	14x1¾"	10-14x1½"	24

National Sign Brackets

For Mounting Flanged or Flat Telephone Signs

Used to obtain maximum visibility for signs by fastening them to poles or posts in a conspicuous position. Practically every type of metal sign can be quickly, securely, and neatly hung to wood, concrete, or metal pole or pipe post at minimum cost. Made of high grade materials, thoroughly hot-dip galvanized assuring protection against rust and wear.

Type 170

For Pipe Posts 1½ to 5 Inches in Diameter



Size Bracket inches	2	3	4
Post Diameter inches	1½ to 3	3 to 4	4 to 5

Type 188

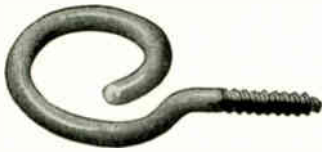
For Wood, Metal, or Concrete Poles, 5 Inches in Diameter and Larger



Straps for Type 188 Furnished Flat

Size Bracket inches	6	10
Post Diameter inches	5 to 8	8 to 12
Length Back Strap inches	18	32

National Galvanized Bridle Rings

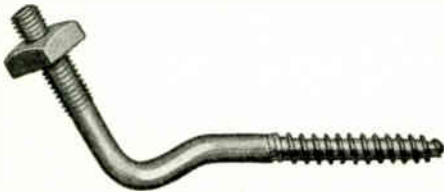


These rings are hot-dip galvanized, giving them high rust resistance.

They are a screw type ring, made to A.T.&T. standard, for running twisted pair, bridle, or parallel drop wire on building walls, fences, and poles.

Style.....	A	C	E	F
Eye Size.....inches	1 5/8	1 1/4	5/8	3
Approx. Shipping Wt. per 1000...pounds	115	75	30	300

National Angle Screws



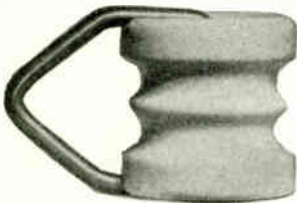
Designed for use with porcelain knobs in dead ending drop wires on building, where angle between drop and building is 30° or more.

Hot-dip galvanized.

Made to A.T.&T. standard.

Size.....inches	5/16
Approx. Shipping Weight per 100.....pounds	12

National C-B Knobs for Drop Wires



For use on buildings and in trees, C-B Knobs offer many advantages over the rigid knob or insulator.

The knob is hooked into the bridle ring and the drop is dead ended on the knob. When used in trees to prevent abrasion, the drop wire

is simply carried over the knob with a simple tie.

It makes no difference at what angle the drop wire approaches, as the knob provides a flexible and self-adjusting support, equalizing the strain and taking up all vibration.

No.	190	191
Style.....	Single Groove	Double Groove
Shipping Wt. per 1000...lb.	250	250

Diamond Insulated Screw Eyes



Hot galvanized by the Diamond process.

The porcelain ring has a diagonal opening which allows the

easy insertion of wires and when pulled taut they cannot become released from the ring.

Packed 100 in a container.

Type.....	5/8"S	5/8"L	1"S	1"L
Per 1000.....	\$76.67	83.34	100.00	103.34
Eye.....in.	5/8	5/8	1	1
Opening.....in.	3/32	3/32	3/32	3/32
Shank.....in.	1	2	1 1/8	2 1/8
Steel.....in.	1/4	1/4	1/4	1/4
Weight per 1000.....lb.	85	95	175	200

Diamond Bridle Rings Galvanized and Enameled

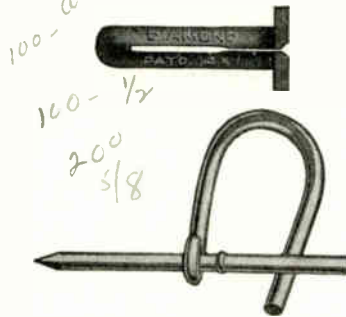


For pole line and interior block distribution.

Furnished either hot galvanized by the Diamond process or enameled. Enameled rings, unless otherwise specified, are furnished in dark blue.

Style.....	A	C	E	F
Eye.....in.	1 5/8	1 1/4	5/8	3
Opening.....in.	5/16	5/16	5/16	5/16
Shank.....in.	1 1/4	1 1/4	7/8	1 1/2
Steel.....in.	1/4	1/4	1/4	1/4
Weight per 1000, Galvanized.....lb.	115	95	35	300
Weight per 1000, Enameled.....lb.	150	125	50	300

Diamond Drive Rings



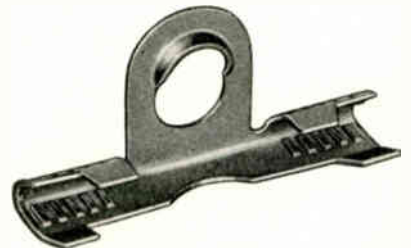
Hot galvanized by the Diamond process.

Accomplish the same purpose as the screw threaded pigtail bridle rings, but are designed for driving instead of screwing into structures. When attached to wood, they are driven as an ordinary wire nail. When attached to hard substances, brick, stone, concrete, use the 1/2-inch with the 3/16x3/8-inch Diamond hammer drive anchor

and the 5/8 and 7/8-inch with 1/4x1-inch Diamond hammer drive anchor. Packed 100 to a box.

Diameter Eye.....in.	1/2	5/8	7/8
Per 100.....	\$7.00	12.00	17.00
Size Hammer Drive Anchor to Use.in.	3/16x3/8	1/4x1	1/4x1
Weight per 1000.....lb.	18	28	53

No. 6296 Drop Wire Clips



For use at intermediate attachments of parallel drop wire. This clip has supporting lip and specially formed hole to fit drive hooks, masonry hooks, and knob adapters.

Wire is placed in supporting groove and tongues of clip are crimped down. Pressure grips wire firmly.

No. 6296.....each ...

National Drive Rings



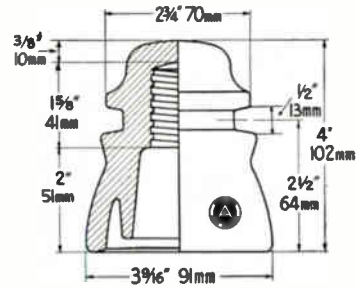
Low cost, efficient, hammer drive rings for use where only a few pairs of wire are being run. Hot-dip galvanized. Made to A.T.&T. standard. Eye size, 1/2 inch. Length, 2 inches. Approximate shipping weight per 1000, 17 pounds.



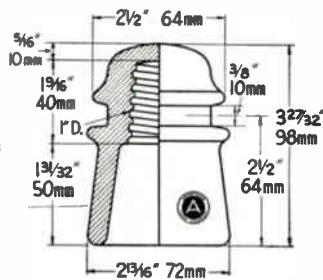
Whitall Tatum Glass Insulators

WT No. 1 meets the Bell System's standards for "DP," WT No. 2 for "Toll Line," WT No. 3 for "Exchange Line" and WT No. 15 for "TW."

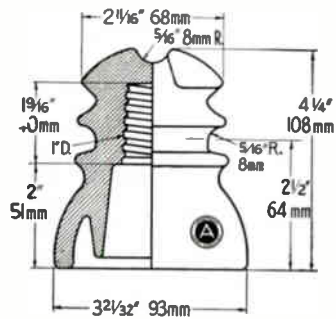
Western Union, Postal Telegraph, and the country's leading railroads use W.T. No. 1.



No. 1 Side Groove, Double Petticoat Type



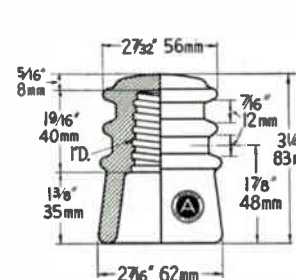
No. 2 Toll Line Type



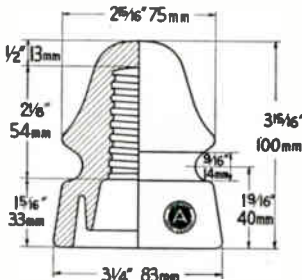
No. 10 Top Groove, Double Petticoat Type

No.	1	2
Average Wet Flash-Over Voltage	25,000	22,000
Average Dry Flash-Over Voltage	52,900	39,300
Leakage Distance	7 1/4 inches	5 inches
Wet Arcing Distance	1 7/8 inches	5/8 inches
Standard Package	40	50
Average Weight Each	24 1/4 ounces	14 3/4 ounces
Approx. Ship. Wt., Std. Pkg.	65 pounds	50 pounds
Approx. Ship. Wt., per 1000	1625 pounds	1000 pounds

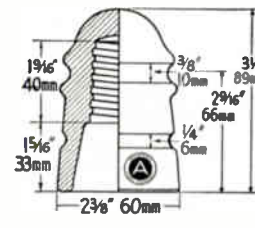
No.	10
Average Wet Flash-Over Voltage	26,700
Average Dry Flash-Over Voltage	59,500
Leakage Distance	8 1/8 inches
Wet Arcing Distance	1 inches
Standard Package	100
Average Weight Each	25 3/4 ounces
Approx. Ship. Wt., Std. Pkg.	100 pounds
Approx. Ship. Wt., per 1000	193 pounds



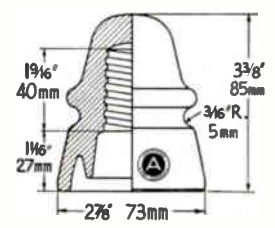
No. 3 Exchange Line Type



No. 4 Deep Groove, Double Petticoat Type



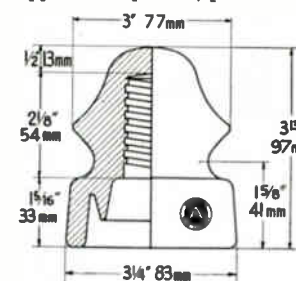
No. 13 Double Groove, Pony Type



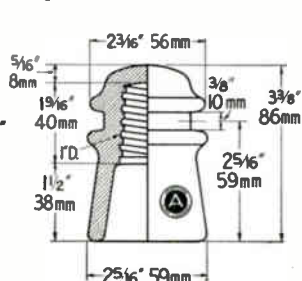
No. 14 Deep Groove, Double Petticoat Type

No.	3	4
Average Operating Voltage	4,400	4,400
Average Wet Flash-Over Voltage	22,300	20,500
Average Dry Flash-Over Voltage	38,600	42,100
Leakage Distance	4 1/2 inches	4 15/16 inches
Wet Arcing Distance	1/2 inches	7/8 inches
Standard Package	50	50
Average Weight Each	10 3/4 ounces	18 1/2 ounces
Approx. Ship. Wt., Std. Pkg.	36 pounds	61 pounds
Approx. Ship. Wt., per 1000	720 pounds	1220 pounds

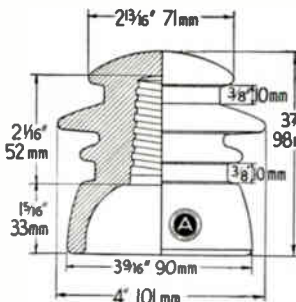
No.	13	14
Average Wet Flash-Over Voltage	20,100	16,500
Average Dry Flash-Over Voltage	37,000	35,600
Leakage Distance	4 1/4 inches	3 15/16 inches
Wet Arcing Distance	1/2 inches	7/8 inches
Standard Package	50	50
Average Weight Each	9 5/8 ounces	12 1/2 ounces
Approx. Ship. Wt., Std. Pkg.	32 pounds	41 pounds
Approx. Ship. Wt., per 1000	640 pounds	820 pounds



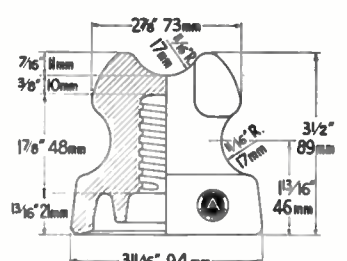
No. 5 Extra Deep Groove, Double Petticoat Type



No. 9 Pony Type



No. 15 One-Piece Transposition Type



No. 511A Top Groove Type

No.	5	9
Average Operating Voltage	4,400	9
Average Wet Flash-Over Voltage	23,000	20,800
Average Dry Flash-Over Voltage	43,000	34,900
Leakage Distance	5 5/16 inches	4 1/8 inches
Wet Arcing Distance	1 5/16 inches	3/8 inches
Standard Package	50	50
Average Weight, Each	18 1/2 ounces	9 3/8 ounces
Approx. Ship. Wt., Std. Pkg.	61 pounds	31 pounds
Approx. Ship. Wt., per 1000	1220 pounds	620 pounds

No.	15	511A
Average Operating Voltage	7,500	7,500
Average Wet Flash-Over Voltage	26,600	26,000
Average Dry Flash-Over Voltage	54,500	59,000
Leakage Distance	6 5/8 inches	4 1/2 inches
Wet Arcing Distance	1 inches	1 inches
Standard Package	30	32
Average Weight Each	27 3/4 ounces	23 1/4 ounces
Approx. Ship. Wt., Std. Pkg.	55 pounds	49 pounds
Approx. Ship. Wt., per 1000	1835 pounds	1531 pounds

Prices upon Application

Hemingray Insulators

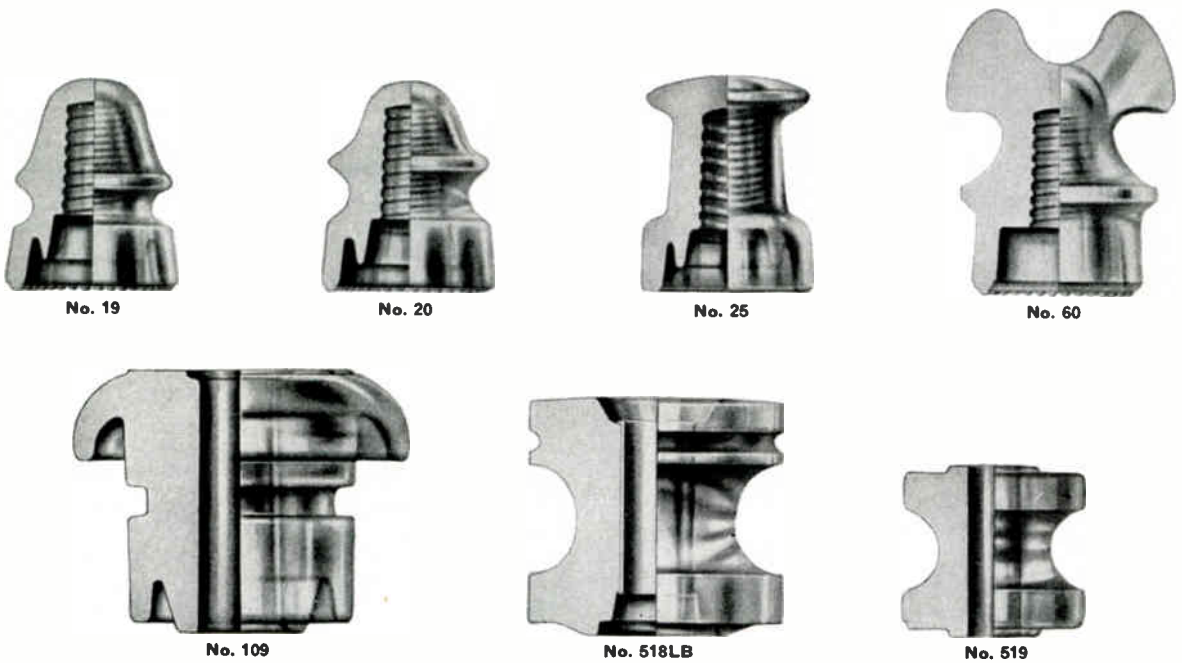
The Hemingray Division of the Owens-Illinois Glass Company produces two lines of glass insulators. The Hemingray line of communication insulators has been manufactured continuously since 1863. The Lowex line of power insulators is a development resulting from exhaustive tests to produce a material with the specific qualities required for electrical insulating purposes.

Lowex glass, electrically, has a high dielectric strength and a low dielectric constant. Physically it is low in thermal expansion, high in mechanical strength and has a very hard surface.

Both the Hemingray and Lowex Lines are not affected by and do not deteriorate with aging or weathering. Homogeneous in character, having only one coefficient of expansion. A smooth hard surface renders them impervious to moisture absorption and makes them practically self-cleaning. Close manufacturing control, extensive research, and a constant development program have increased mechanical strength and product uniformity. These insulators are unaffected by sudden temperature changes and are devoid of internal strains and stresses.

Thorough inspection is made easy because the products are clear and flawless. Reasonable in first cost, this tougher glass withstands rough handling and gives long service which means low ultimate cost.

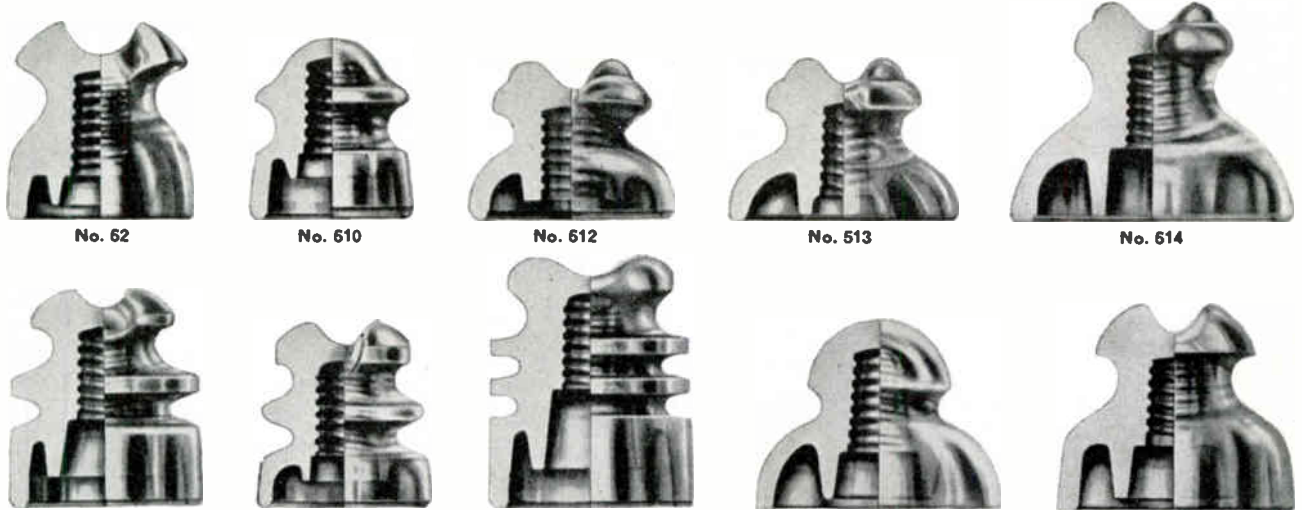
Hemingray Standard Insulators



No.		19	20	25	60	109	518LB	519
Dry Flashover	volts	39,600	39,500	37,000			20,000	13,600
Wet Flashover	volts	22,100	22,000	21,000			10,000	7,000
Leakage Distance	inches	4 1/8	4 3/8	4				
Wet Arcing Distance	inches	1	1	1				
Insulator Diameter	inches	3 1/4	3 1/4	3 1/4	3 1/4	*2 3/4	3 1/8	2 1/4
Insulator Height	inches	3 7/8	3 7/8	4	5	3 1/4	3	2 1/8
Pin Hole Size	inches	1	1	1	1	1 1/16	1 1/16	5/8
Wire Groove Diameter	inches	1 1/2	7/8	2	1 1/2	1 1/32	1 1/32	1
Mechanical Strength	pounds	2,500	2,500	2,500	2,500	4,000	4,000	4,000
No. in Standard Package		50	50	50	50	40	50	75
Weight per Standard Package	pounds	62	62	71 1/2	115	76	72 1/2	42
Shipping Weight per 1000	pounds	1,240	1,240	1,430	2,300	1,900	1,450	559

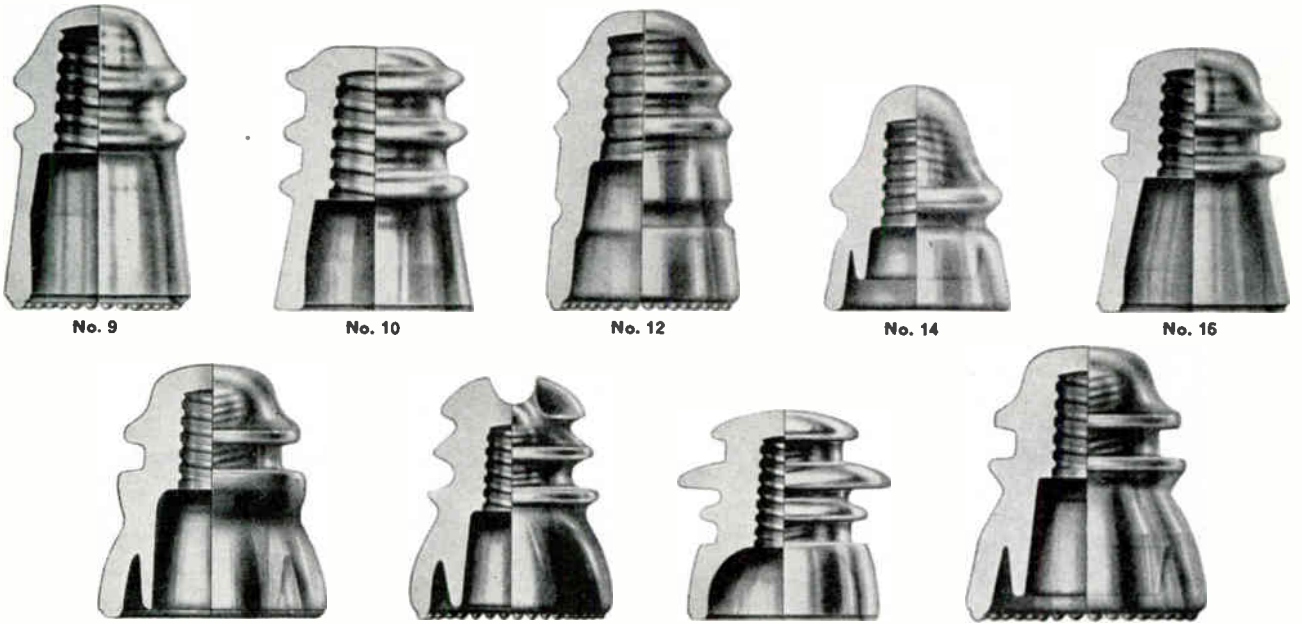
*Bottom; 4 1/8-inch top.

Hemingray Lowex Power Insulators



No.	62	510	512	513	514	660	670	680	710	720
Dry Flashover..... volts	50,600	37,000	50,300	60,000	70,000	55,000	65,000	70,000	55,000	65,800
Wet Flashover..... volts	30,100	21,500	26,300	35,000	40,000	35,000	40,000	45,000	29,000	35,200
Leakage Distance..... inches	5½	4	4	5	8	5½	7½	9½	7	7½
Wet Arcing Distance..... inches	1½	1	1¼	1¾	2	1	1½	1¼	1¾	1¾
Insulator Diameter..... inches	3¾	3¼	4	4⅞	5½	3¾	3¾	4	4¾	4½
Insulator Height..... inches	3¾	3½	3½	3¾	4¼	3¾	4¼	4½	3¾	4
Wire Groove Diameter..... inches	1½	1¾	¾	7⁄8	7⁄8	1	1	1	5⁄8	¾
Pin Hole Size..... inches	1	1	1	1	1	1	1	1	1	1
Minimum Recommended Pin Height... in.	4	4	4	5	5	4	5	5½	5	5
Mechanical Strength..... pounds	3,000	4,000	3,000	2,500	3,000	2,500	2,500	3,000	3,000	3,000
No. in Standard Package.....	40	50	50	30	24	50	24	24	50	50
Weight per Standard Package..... pounds	70	60½	63	59½	57	64	49	70	130	137
Shipping Weight per 1000..... pounds	1,750	1,210	1,240	1,983	2,375	1,280	2,083	2,975	2,600	2,740

Hemingray Telephone and Telegraph Insulators

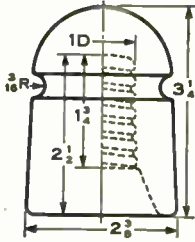


No.	9	10	12	14	16	42	43	53	45
Insulator Diameter..... inches	2¼	2½	2¾	2¾	2¾	3¾	3¾	4	3¾
Insulator Height..... inches	3¾	3¼	3¾	3¾	3¾	4½	4¼	3¾	3¾
Pin Hole Size..... inches	1	1	1	1	1	1	1	1	1
Wire Groove Diameter..... inches	...	...	...	¾	¾	...	¾	¾	...
Wire Groove Radius..... inches	3⁄16	...	...	...	...	...	5⁄16	...	...
No. in Standard Package.....	50	50	50	50	50	40	40	30	40
Weight per Standard Package..... pounds	30	35½	33½	39½	52½	64½	77	59	61
Shipping Weight per 1000..... pounds	600	710	670	790	1,050	1,613	1,925	1,987	1,525

Prices and Complete Information upon Request

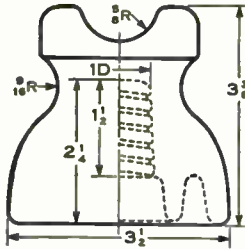
Thomas Porcelain One-Part Moderate Voltage Pin Type Distribution Insulators
Wet Process Brown Glaze

***No. 1012—1-Inch Pin Hole**



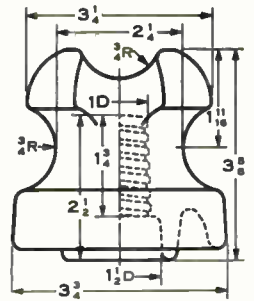
Nominal Rating..... volts	1200
Leakage Distance..... inches	3
Mechanical Strength..... inches	2500
No. in Barrel.....	500
Ship. Weight per 100..... pounds	70

No. 1049—1-Inch Pin Hole



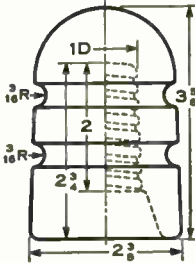
Nominal Rating..... volts	5000
Dry Flash-Over Voltage.....	50000
Wet Flash-Over Voltage.....	23000
Leakage Distance..... in.	5 1/4
Dry Arcing Distance..... in.	3 3/8
Mechanical Strength..... lb.	3000
Minimum Pin Height Recommended..... in.	4
No. in Box.....	50
Gross Weight per 100..... lb.	136

No. 1108—1-Inch Pin Hole



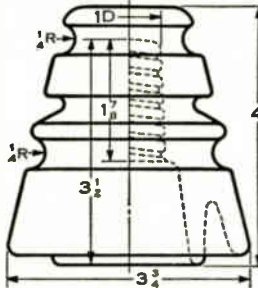
Nominal Rating..... volts	6600
Dry Flash-Over Voltage.....	50000
Wet Flash-Over Voltage.....	25000
Leakage Distance..... in.	4 1/8
Dry Arcing Distance..... in.	3 1/4
Mechanical Strength..... lb.	4000
Min. Pin Ht. Recommended in.	4
No. in Box.....	50
Gross Weight per 100.....	160

***No. 1011—1-Inch Pin Hole**



Nominal Rating..... volts	1200
Leakage Distance..... inches	2 1/4
Mechanical Strength..... pounds	2500
No. in Barrel.....	400
Ship. Weight per 100..... pounds	93

No. 1185—1-Inch Pin Hole

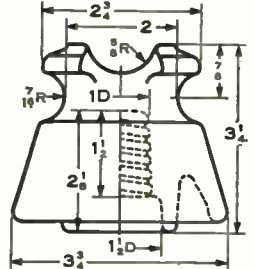


Transposition type insulator also commonly used for arc-light service.

Nominal Rating..... volts	5000
Dry Flash-Over Voltage.....	*40000
Wet Flash-Over Voltage.....	*25000
Leakage Distance..... in.	*5 1/4
Mechanical Strength..... lb.	2500
No. in Barrel.....	125
Gross Weight per 100..... lb.	180

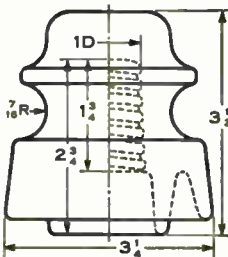
*Measured between lower groove and pin. Dry flash-over between grooves is 23000 volts; wet flash-over, 13000 volts; leakage distance, 1 3/4 inches.

No. 1205—1-Inch Pin Hole



Nominal Rating..... volts	6600
Dry Flash-Over Voltage.....	50000
Wet Flash-Over Voltage.....	25000
Leakage Distance..... in.	5 1/4
Dry Arcing Distance..... in.	3 3/4
Mechanical Strength..... lbs.	3000
Min. Pin Ht. Recommended in.	4
No. in Box.....	50
Gross Weight per 100..... lb.	140

No. 1111—1-Inch Pin Hole

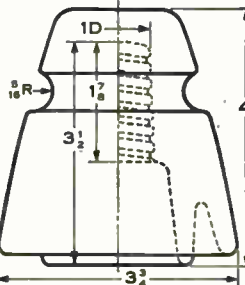


N. E. L. A. standard.

This insulator is packed in convenient wire-bound wood boxes.

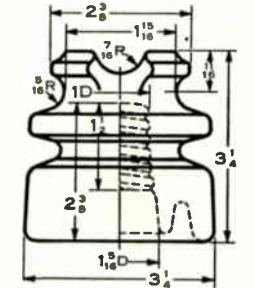
Nominal Rating..... volts	5000
Dry Flash-Over Voltage.....	35000
Wet Flash-Over Voltage.....	20000
Leakage Distance..... in.	4 1/4
Dry Arcing Distance..... in.	3
Mechanical Strength..... lb.	3000
Minimum Pin Height Recommended..... in.	4
No. in Box.....	50
Gross Weight per 100..... lb.	120

No. 1094—1-Inch Pin Hole



Nominal Rating..... volts	5000
Dry Flash-Over Voltage.....	50000
Wet Flash-Over Voltage.....	25000
Leakage Distance..... in.	6 1/2
Dry Arcing Distance..... in.	3 1/2
Mechanical Strength..... lb.	5000
Min. Pin Height Recommended..... in.	5
No. in Barrel.....	100
Ship. Wt. per 100..... lb.	203

No. 266—1-Inch Pin Hole



Nominal Rating..... volts	6900
Dry Flash-Over Voltage.....	55000
Wet Flash-Over Voltage.....	35000
Leakage Distance..... in.	6
Dry Arcing Distance..... in.	3 7/8
Mechanical Strength..... lb.	2500
Min. Pin Ht. Recommended in.	4
No. in Box.....	50
Gross Weight per 100..... lb.	132

Electrical values given here are based on tests conducted in accordance with latest A.I.E.E. Specifications.

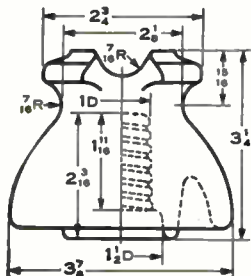
For Quiet-Types suffix the letters Q-T to catalog number.

All insulators are wet process unless otherwise indicated.

*Dry process.

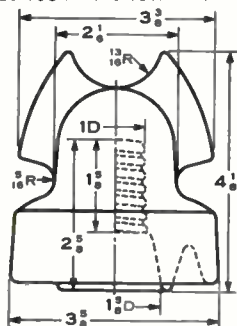
Thomas Porcelain One-Part Moderate Voltage Pin Type Distribution Insulators

No. 1009—1-Inch Pin Hole



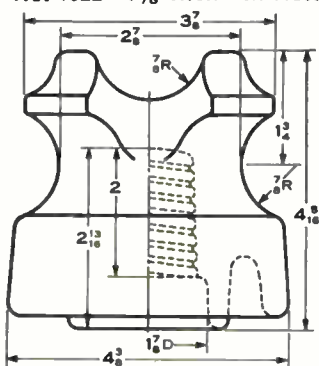
Nominal Rating..... volts	8000
Dry Flash-Over Voltage.....	50000
Wet Flash-Over Voltage.....	30000
Leakage Distance..... in.	5 1/2
Dry Arcing Distance..... in.	3 1/2
Mechanical Strength..... lbs.	3000
Min. Pin Ht. Recommended..... in.	4
No. in Box.....	50
Gross Weight per 100..... lbs.	140

No. 1084—1-Inch Pin Hole



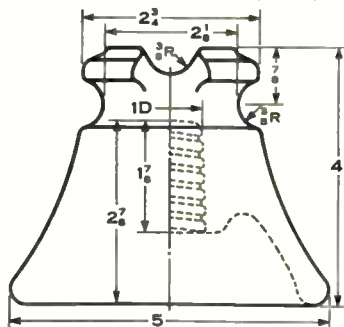
Nominal Rating..... volts	7500
Dry Flash-Over Voltage.....	50000
Wet Flash-Over Voltage.....	23000
Leakage Distance..... in.	5
Dry Arcing Distance..... in.	3 1/4
Mechanical Strength..... lbs.	4000
Min. Pin Ht. Recommended..... in.	4
No. in Barrel.....	150
Gross Weight per 100..... lbs.	178

**No. 1198—1-Inch Pin Hole
No. 1022—1 3/8-Inch Pin Hole**



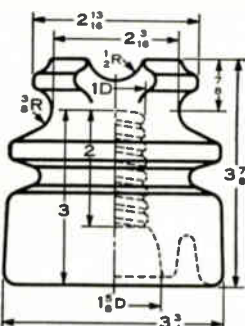
Nominal Rating..... volts	11000
Dry Flash-Over Voltage.....	55000
Wet Flash-Over Voltage.....	30000
Leakage Distance..... in.	5 1/2
Dry Arcing Distance..... in.	4 1/8
Mechanical Strength..... lbs.	5000
Min. Pin Ht. Recommended..... in.	5
No. per Barrel.....	85
Gross Weight per 100..... lbs.	332

**Wet Process—Brown Glaze
No. 1164—1-Inch Pin Hole**



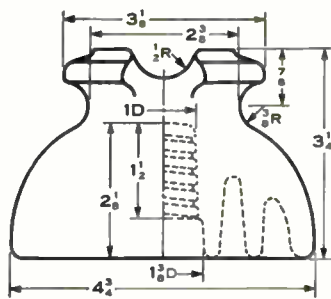
Nominal Rating..... volts	11000
Dry Flash-Over Voltage.....	57000
Wet Flash-Over Voltage.....	40000
Leakage Distance..... in.	6 1/4
Dry Arcing Distance..... in.	5 1/4
Mechanical Strength..... lbs.	3000
Min. Pin Ht. Recommended..... in.	5
No. per Barrel.....	100
Gross Weight per 100..... lbs.	220

No. 277—1-Inch Pin Hole



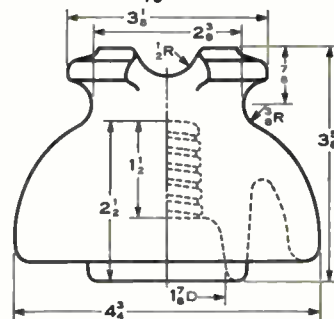
Nominal Rating..... volts	13500
Dry Flash-Over Voltage.....	65000
Wet Flash-Over Voltage.....	40000
Leakage Distance..... in.	7 1/2
Dry Arcing Distance..... in.	4 9/8
Mechanical Strength..... lbs.	2500
Min. Pin Ht. Recommended..... in.	5
No. in Box.....	40
Gross Weight per 100..... lbs.	237

No. 1153—1-Inch Pin Hole



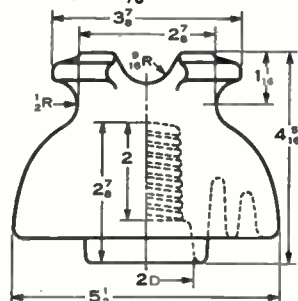
Nominal Rating..... volts	13500
Dry Flash-Over Voltage.....	65000
Wet Flash-Over Voltage.....	35000
Leakage Distance..... in.	8 1/2
Dry Arcing Distance..... in.	4 3/8
Mechanical Strength..... lbs.	3000
Min. Pin Ht. Recommended..... in.	4 3/4
No. in Box.....	40
Gross Weight per 100..... lbs.	225

**No. 1177—1-Inch Pin Hole
No. 1196—1 3/8-Inch Pin Hole**



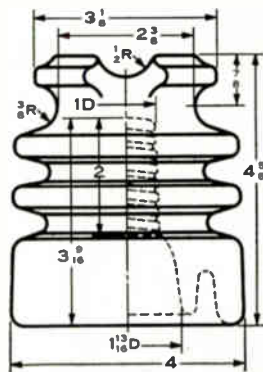
Nominal Rating..... volts	13500
Dry Flash-Over Voltage.....	65000
Wet Flash-Over Voltage.....	35000
Leakage Distance..... in.	7 1/4
Dry Arcing Distance..... in.	4 1/2
Mechanical Strength..... lbs.	3000
Min. Pin Ht. Recommended..... in.	4 3/4
No. in Box.....	40
Gross Weight per 100..... lbs.	235

**No. 1292—1-Inch Pin Hole
No. 1291—1 3/8-Inch Pin Hole**



Nominal Rating..... volts	17500
Dry Flash-Over Voltage.....	70000
Wet Flash-Over Voltage.....	40000
Leakage Distance..... in.	8 1/4
Dry Arcing Distance..... in.	5 1/8
Mechanical Strength..... lbs.	3000
Min. Pin Ht. Recommended..... in.	5
No. in Box.....	30
Gross Weight per 100..... lbs.	365

No. 288—1-Inch Pin Hole



Nominal Rating..... volts	17500
Dry Flash-Over Voltage.....	75000
Wet Flash-Over Voltage.....	45000
Leakage Distance..... in.	9 1/2
Dry Arcing Distance..... in.	5 5/8
Mechanical Strength..... lbs.	3000
Min. Pin Ht. Recommended..... in.	6
No. in Box.....	30
Gross Weight per 100..... lbs.	293

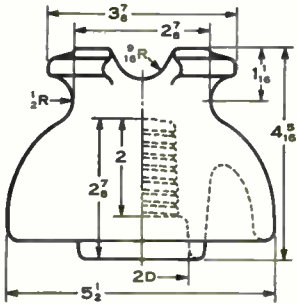
Electrical values given here are based on tests conducted in accordance with latest A.I.E.E. Specifications.

For Quiet-Types suffix the letters Q-T to catalog number.

Thomas Porcelain One Piece, Moderate Voltage; and Multipart, Hi Voltage Pin Type Insulators

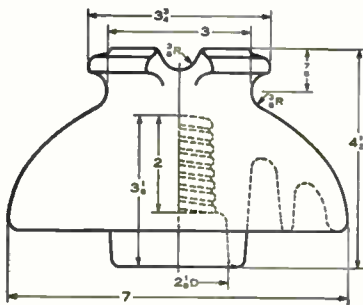
Wet Process—Brown Glaze

No. 1262—1-Inch Pin Hole
No. 1261—1³/₈-Inch Pin Hole



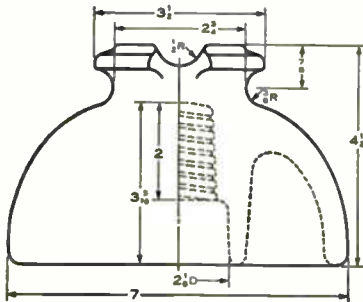
Nominal Rating	volts	17500
Dry Flash-Over Voltage		70000
Wet Flash-Over Voltage		40000
Leakage Distance	in.	9
Dry Arcing Distance	in.	5 1/8
Mechanical Strength	lb.	3000
Min. Pin Ht. Recommended	in.	5
No. in Box		30
Gross Weight per 100	lb.	400

No. 1157—1-Inch Pin Hole
No. 1158—1³/₈-Inch Pin Hole



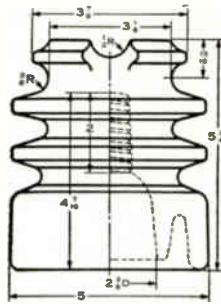
Nominal Rating	volts	23000
Dry Flash-Over Voltage		90000
Wet Flash-Over Voltage		50000
Leakage Distance	in.	12
Dry Arcing Distance	in.	6 1/2
Mechanical Strength	lb.	3000
Min. Pin Ht. Recommended	in.	6
No. in Barrel		40
Ship. Weight per 100	lb.	625

No. 1255—1-Inch Pin Hole
No. 1256—1³/₈-Inch Pin Hole



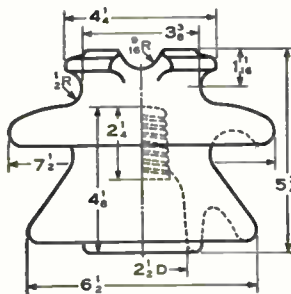
Nominal Rating	volts	23000
Dry Flash-Over Voltage		90000
Wet Flash-Over Voltage		50000
Leakage Distance	in.	11 1/2
Dry Arcing Distance	in.	7 1/8
Mechanical Strength	lb.	3000
Min. Pin Ht. Recommended	in.	7
No. in Barrel		40
Ship. Weight per 100	lb.	570

No. 298—1-Inch Pin Hole
No. 299—1³/₈-Inch Pin Hole



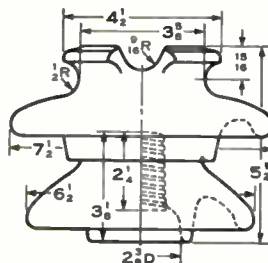
Nominal Rating	volts	23000
Dry Flash-Over Voltage		90000
Wet Flash-Over Voltage		50000
Leakage Distance	in.	13
Dry Arcing Distance	in.	7 1/4
Mechanical Strength	lb.	3000
Min. Pin Ht. Recommended	in.	7
No. in Barrel		50
Gross Weight per 100	lb.	616

No. 1917—1³/₈-In. Threaded Pin Hole
No. 1917-M—1³/₈-In. Metal Shell Thimble
No. 1917-S—1⁹/₁₆-In. Sanded Pin Hole



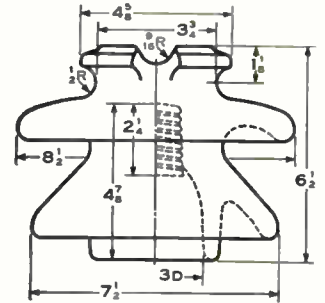
Nominal Rating	volts	27000
Dry Flash-Over Voltage		95000
Wet Flash-Over Voltage		65000
Leakage Distance	in.	13
Dry Arcing Distance	in.	8
Mechanical Strength	lb.	2500
Min. Pin Ht. Recommended	in.	7
No. in Barrel		25
Ship. Weight per 100	lb.	875

No. 2117—1³/₈-In. Threaded Pin Hole
No. 2117-M—1³/₈-Inch Metal Shell Thimble
No. 2117-S—1⁹/₁₆-Inch Sanded Pin Hole



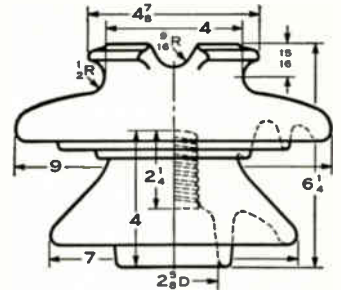
Nominal Rating	volts	27000
Dry Flash-Over Voltage		95000
Wet Flash-Over Voltage		65000
Leakage Distance	in.	13
Dry Arcing Distance	in.	8
Mechanical Strength	lb.	2500
Min. Pin Ht. Recommended	in.	6
No. in Barrel		25
Ship. Weight per 100	lb.	750

No. 1925—1³/₈-Inch Threaded Pin Hole
No. 1925-M—1³/₈-Inch Metal Shell Thimble
No. 1925-S—1⁹/₁₆-Inch Sanded Pin Hole



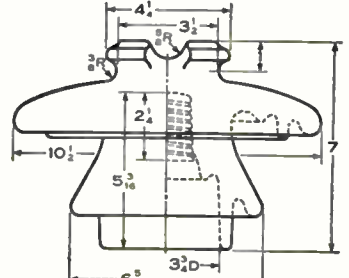
Nominal Rating	volts	35000
Dry Flash-Over Voltage		110000
Wet Flash-Over Voltage		75000
Leakage Distance	in.	17
Dry Arcing Distance	in.	9 1/2
Mechanical Strength	lb.	3000
Min. Pin Ht. Recommended	in.	8
No. in Crate		8
Ship. Weight per 100	lb.	1313

No. 2125—1³/₈-Inch Threaded Pin Hole
No. 2125-M—1³/₈-Inch Metal Shell Thimble
No. 2125-S—1⁹/₁₆-Inch Sanded Pin Hole



Nominal Rating	volts	35000
Dry Flash-Over Voltage		110000
Wet Flash-Over Voltage		75000
Leakage Distance	in.	17
Dry Arcing Distance	in.	9 1/2
Mechanical Strength	lb.	3000
Min. Pin Ht. Recommended	in.	7
No. in Crate		8
Ship. Weight per 100	lb.	1300

No. 1924—1³/₈-Inch Threaded Pin Hole
No. 1924-M—1³/₈-Inch Metal Shell Thimble
No. 1924-S—1⁹/₁₆-Inch Sanded Pin Hole



Nominal Rating	volts	45000
Dry Flash-Over Voltage		125000
Wet Flash-Over Voltage		85000
Leakage Distance	in.	20
Dry Arcing Distance	in.	11
Mechanical Strength	lb.	3000
Min. Pin Ht. Recommended	in.	9
No. in Crate		6
Ship. Weight per 100	lb.	1850

Electrical values given are based on tests conducted in accordance with latest A.I.E.E. Specifications.
For Quiet-Types suffix the letters Q-T to catalog number.

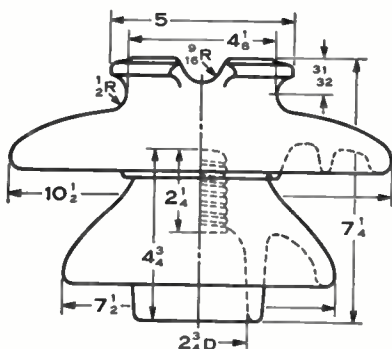
Thomas Porcelain Multi-part Hi Voltage Pin Type Insulators

Wet Process—Brown Glaze

No. 2124— $\frac{13}{16}$ -Inch Threaded Pin Hole

No. 2124-M— $\frac{13}{16}$ -Inch Metal Shell Thimble

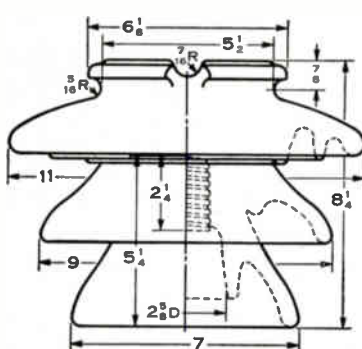
No. 2124-S— $\frac{19}{16}$ -Inch Sanded Pin Hole



No. 3055— $\frac{13}{16}$ -Inch Threaded Pin Hole

No. 3055-M— $\frac{13}{16}$ -Inch Metal Shell Thimble

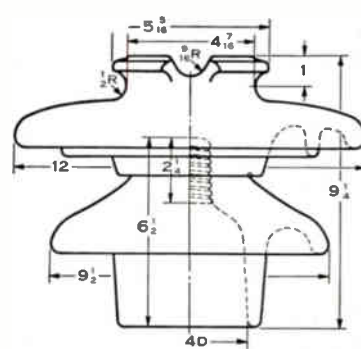
No. 3055-S— $\frac{19}{16}$ -Inch Sanded Pin Hole



No. 2126— $\frac{13}{16}$ -Inch Threaded Pin Hole

No. 2126-M— $\frac{13}{16}$ -Inch Metal Shell Thimble

No. 2126-S— $\frac{19}{16}$ -Inch Sanded Pin Hole



Nominal Rating..... volts	45000
Dry Flash-Over Voltage.....	125000
Wet Flash-Over Voltage.....	85000
Leakage Distance..... in.	21
Dry Arcing Distance..... in.	11
Mechanical Strength..... lb.	3000
Min. Pin Ht. Recommended..... in.	8
No. in Crate.....	6
Ship. Weight per 100..... lb.	1800

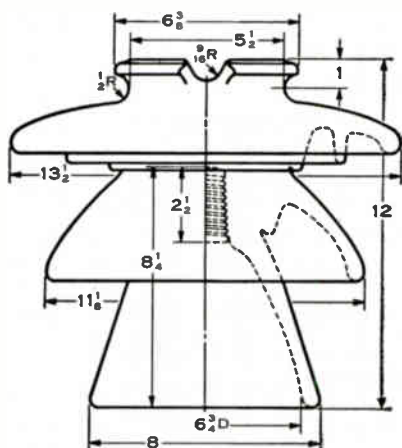
Nominal Rating..... volts	50000
Dry Flash-Over Voltage.....	140000
Wet Flash-Over Voltage.....	100000
Leakage Distance..... in.	25 1/4
Dry Arcing Distance..... in.	12 1/4
Mechanical Strength..... lb.	3000
Min. Pin Ht. Recommended..... in.	9
No. in Crate.....	3
Ship. Weight per 100..... lb.	2400

Nominal Rating..... volts	55000
Dry Flash-Over Voltage.....	145000
Wet Flash-Over Voltage.....	100000
Leakage Distance..... in.	27
Dry Arcing Distance..... in.	14
Mechanical Strength..... lb.	3000
Min. Pin Ht. Recommended..... in.	10
No. in Crate.....	3
Ship. Weight per 100..... lb.	2750

No. 3060— $\frac{13}{16}$ -Inch Threaded Pin Hole

No. 3060-M— $\frac{13}{16}$ -Inch Metal Shell Thimble

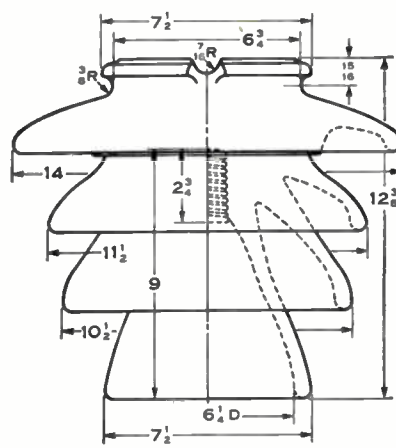
No. 3060-S— $\frac{19}{16}$ -Inch Sanded Pin Hole



No. 4038— $\frac{13}{16}$ -Inch Threaded Pin Hole

No. 4038-M— $\frac{13}{16}$ -Inch Metal Shell Thimble

No. 4038-S— $\frac{19}{16}$ -Inch Sanded Pin Hole



Nominal Rating..... volts	66000
Dry Flash-Over Voltage.....	170000
Wet Flash-Over Voltage.....	130000
Leakage Distance..... in.	34
Dry Arcing Distance..... in.	17 1/4
Mechanical Strength..... lb.	3000
Minimum Pin Height Recommended..... in.	12
No. in Crate.....	3
Ship. Weight per 100..... lb.	3900

Nominal Rating..... volts	70000
Dry Flash-Over Voltage.....	180000
Wet Flash-Over Voltage.....	140000
Leakage Distance..... in.	41 1/4
Dry Arcing Distance..... in.	17 1/4
Mechanical Strength..... lb.	4000
Minimum Pin Height Recommended..... in.	14
No. in Crate.....	2
Shipping Weight per 100..... lb.	5500

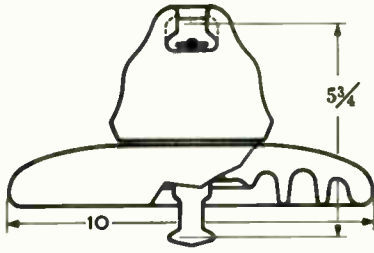
Electrical values given are based on tests conducted in accordance with latest A.I.E.E. Specifications.

For Quiet-Types suffix the letters Q-T to catalog number.

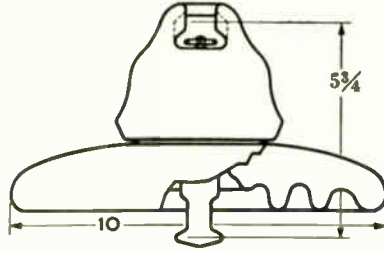
Thomas Porcelain Suspension Strain Insulators

10-Inch Diameter Units—Ball-Socket and Clevis Types

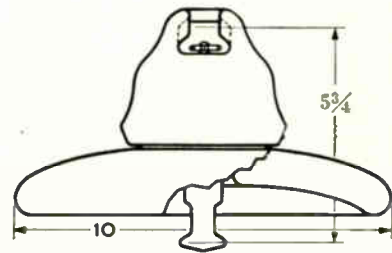
25,000 Lb., 15,000 Lb., and 11,000 Lb. M. & E. Rating
Wet Process—Brown Glazed



No. 21243
10-Inch Corrugated Standard Design
25,000 Lb. M. & E. Hi-Strength
15,000 Lb. M. & E. Standard
11,000 Lb. M. & E. Light Weight
Fig. 1



No. 1267
10-Inch Corrugated Heavy Disc Design
15,000 Lb. M. & E.
Fig. 2



No. 1257
10-Inch Heavy Disc Design
15,000 Lb. M. & E.
Fig. 3

No.	M. & E. Rating Lb.	Fig. No.	Type	Spacing Inches	FLASH-OVER Kv.		Leakage Distance Inches	Dry Arcing Distance Inches		Wet Arcing Distance Inches		Approx. Gross Weight Pounds per 100
					Dry	Wet						
1191A	25,000	1	B-S	5 3/4	80	50	13	7 3/4	3 3/4		1508	
1166A	25,000	1	Clevis	5 3/4	80	50	13	7 3/4	3 3/4		1508	
21243	15,000	1	B-S	5 3/4	80	50	12	7 3/4	3 3/4		1333	
21238	15,000	1	Clevis	5 3/4	80	50	12	7 3/4	3 3/4		1333	
21239	15,000	1	B-S	5	80	50	12	7 3/4	3 3/4		1303	
21242	15,000	1	B-S	5 1/2	80	50	12	7 3/4	3 3/4		1323	
21251	15,000	1	B-S	4 3/4	80	50	12	7 3/4	3 3/4		1293	
21191	11,000	1	B-S	5 3/4	80	50	12	7 3/4	3 3/4		1258	
21166	11,000	1	Clevis	5 3/4	80	50	12	7 3/4	3 3/4		1258	
21212	11,000	1	B-S	5	80	50	12	7 3/4	3 3/4		1237	
21244	11,000	1	B-S	4 3/4	80	50	12	7 3/4	3 3/4		1218	
1267	15,000	2	B-S	5 3/4	80	50	11 1/2	8	4		1508	
1268	15,000	2	Clevis	5 3/4	80	50	11 1/2	8	4		1508	
1282	15,000	2	B-S	5	80	50	11 1/2	8	4		1478	
1257	15,000	3	B-S	5 3/4	68	42	8 3/4	7 3/4	3 5/8		1333	
1258	15,000	3	Clevis	5 3/4	68	42	8 3/4	7 3/4	3 5/8		1333	
1272	15,000	3	B-S	5	68	42	8 3/4	7 3/4	3 5/8		1303	

These designs are furnished in both Ball-Socket and Clevis. Weights are based on standard package of six per crate; however, we will pack to suit customer specifications.

Other spacings are obtainable per customer specifications.
To specify Quiet-Types suffix letters Q-T to catalog number.

60 Cycle Dry and Wet Flashover Values, Kv. for Strings
10-Inch Corrugated Standard Designs

For Numbers: 1191-A, 1166-A, 21243, 21238, 21191, 21166, 21239, 21242, 21251, 21212, and 21244

No. Units		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
5 3/4" Spacing	{ Dry	80	155	215	270	325	380	435	485	540	590	640	690	735	785	830	875	920	965
	{ Wet	50	90	130	170	215	255	295	335	375	415	455	490	525	565	600	630	655	680
5 1/2" Spacing	{ Dry	80	150	210	260	315	370	415	470	520	570	620	665	710	760	800	850	890	930
	{ Wet	50	90	125	165	205	245	280	325	360	400	435	475	505	545	580	615	640	660
5" Spacing	{ Dry	80	150	200	250	300	345	390	435	485	530	570	615	660	700	740	785	825	865
	{ Wet	50	85	120	155	190	225	260	300	335	370	400	435	470	500	530	565	595	620
4 3/4" Spacing	{ Dry	80	145	195	245	290	330	375	420	465	510	550	590	630	670	710	750	790	830
	{ Wet	50	80	115	150	180	215	250	285	320	350	385	415	450	480	510	540	570	600

10-Inch Corrugated Heavy Disc Designs

For Numbers: 1267, 1268, 1282

No. Units		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
5 3/4" Spacing	{ Dry	80	155	215	270	325	380	435	485	540	590	640	690	735	785	830	875	920	965
	{ Wet	50	85	120	155	195	235	270	310	345	380	420	455	490	525	560	590	615	640
5" Spacing	{ Dry	80	150	200	250	300	345	390	435	485	530	570	615	660	700	740	785	825	865
	{ Wet	50	80	110	140	175	205	240	270	305	335	370	400	430	460	490	520	550	575

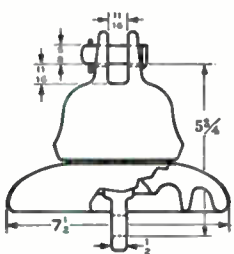
10-Inch Plain Heavy Disc Designs

For Numbers: 1257, 1258, and 1272

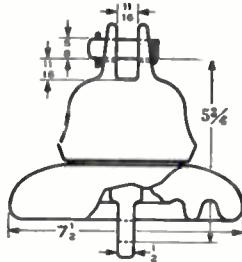
No. Units		1	2	3	4	5	6	7	8	9	10	11	12
5 3/4" Spacing	{ Dry	68	130	185	235	280	325	365	405	445	480	520	555
	{ Wet	42	75	105	135	170	205	240	270	305	340	375	405
5" Spacing	{ Dry	68	120	170	215	255	295	335	370	405	440	470	500
	{ Wet	42	70	95	125	150	180	210	245	270	300	330	360

Electrical values given here are based on tests conducted in accordance with the latest A.I.E.E. specifications.

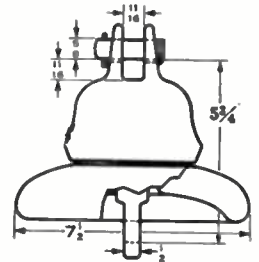
Thomas Porcelain Suspension Strain Insulators 7½-Inch Diameter Units—15,000 Lb. M. & E. Rating



No. 1199-B
7½-Inch Corrugated
Standard
Fig. 1



No. 1270
7½-Inch Corrugated
Heavy Disc
Fig. 2



No. 1260
7½-Inch Heavy Disc
Fig. 3

Standard spacing, 5¾ inches.

No.	Fig.	Type	Leakage Distance Inches	Dry Arcing Distance Inches	Wet Arcing Distance Inches	Approx. Gross Wt. Pounds per 100
1199-B	1	Clevis	8¼	5	2½	920
1270	2	Clevis	7¾	5	2½	940
1260	3	Clevis	6½	5	2½	935
1213-A	1	B-S	8¼	5	2½	910
1269	2	B-S	7¾	5	2½	930
1259	3	B-S	6½	5	2½	925

Dry and Wet Flash-Over, Kv. 5¾-Inch Spacing

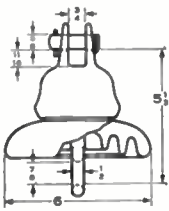
		7½ Inch Corrugated Designs For Nos. 1199-B, 1213-A, 1270, 1269			
No. Units	Spacing	1	2	3	4
5¾ Inch Spacing Dry		70	120	165	205
5¾ Inch Spacing Wet		40	70	110	140

7½ Inch Plain Heavy Disc Designs For Nos. 1260 and 1259

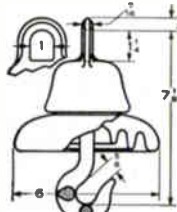
No. Units	Spacing	1	2	3	4
5¾ Inch Spacing Dry		60	115	165	205
5¾ Inch Spacing Wet		35	65	105	140

Thomas Porcelain Strain Insulators 6-Inch Diameter Units

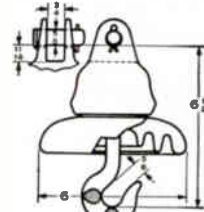
Corrugated Standard Designs



No. 1204

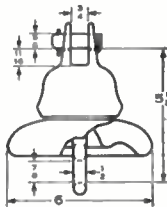


No. 1207-A

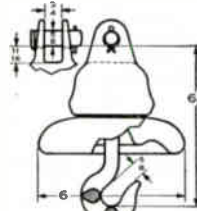


No. 1290

Plain Heavy Disc Designs



No. 1277



No. 1278

No.	1204	1207-A	1277	1278	1290
Dry Flash-Over Voltage	60 kv.	60	50	50	60
Wet Flash-Over Voltage	35 kv.	30	30	30	30
Dry Arcing Distance	4⅝ in.	4¼	4⅝	4¼	4¼
Wet Arcing Distance	1⅞ in.	1¾	1⅞	1¾	1¾
Leakage Distance	7½ in.	7½	5¼	5¼	7½
M. & E. Strength	10,000 lb.	8,000	10,000	8,000	8,000
Standard Package Quantity	*14	†50	*14	†50	†50
Approx. Ship. Weight per 100	650 lb.	530	650	630	630

*Crate. †Barrel.

(Clevis designs can be furnished with ½ inch cotter bolt in order that two or more units may be used in strings.)

60 Cycle Dry and Wet Flash-Over Values, Kv. for Strings

6-Inch Diameter Designs

For No. 1204

For Nos. 1207-A, 1290

For Nos. 1277, 1278

No. Units	1	2	3	No. Units	1	2	3	No. Units	1	2	3
Dry	60	100	135	Dry	60	100	135	Dry	50	90	125
Wet	35	60	85	Wet	30	60	85	Wet	30	55	80

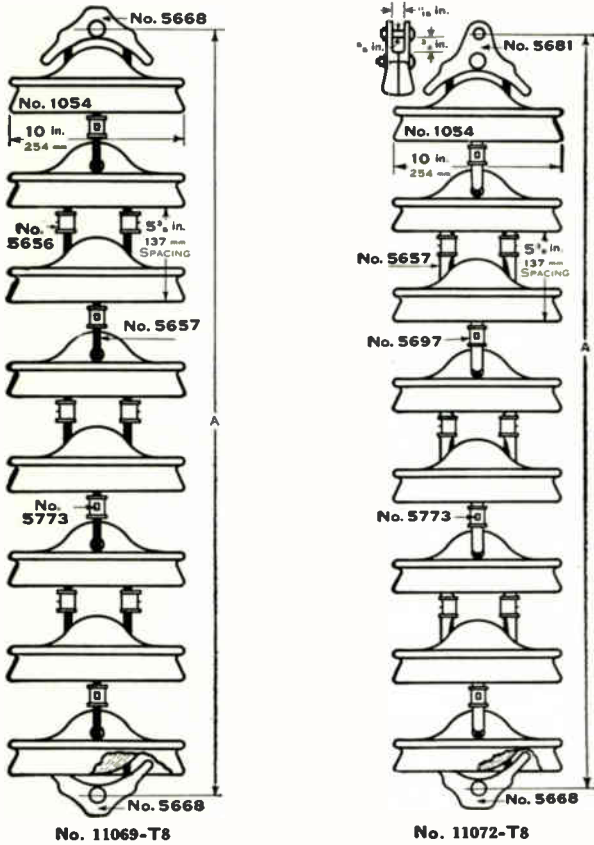
To specify Quiet-Types suffix letters Q-T to catalog number.

Electrical values given here are based on tests conducted in accordance with the latest A.I.E.E. specifications.

Thomas Link Type Hewlett Insulators

10-Inch Standard Units

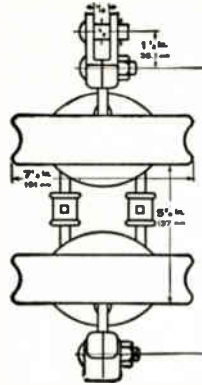
Brown Glaze—Average M & E 10000 Pounds



Thomas Link Type Hewlett Insulators

7 1/2-Inch Units

Brown Glaze
Average M & E, 8000 Pounds



No. 11073 assembly has a blind adapter at both terminal ends.

No. 11074 assembly has a clevis at one end and a blind adapter at the other terminal.

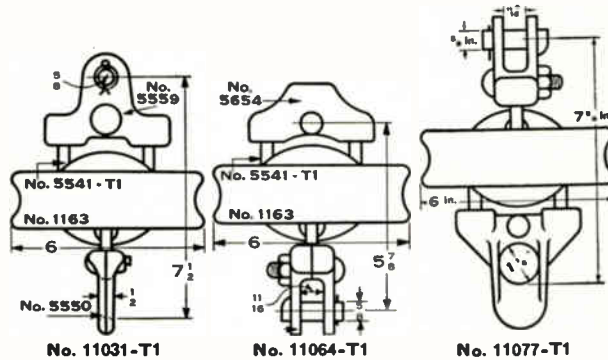
No. 11075 assembly has a clevis adapter at both terminal ends.

No. 11074-T2

No. Units	DIMENSION A, IN.			FLASHOVER, Kv.		Ship. Wt. Lb.
	No. 11073	No. 11074	No. 11075	Dry	Wet	
Type 1	5 3/4	7 1/4	8 3/4	70	45	13 3/4
Type 2	11 1/8	12 5/8	14 1/8	130	90	26 3/4
Type 3	16 1/2	18	19 1/2	185	135	38 1/2

6-Inch Units

Brown Glaze—Average M & E, 6000 Pounds



Flashover: 1-unit, dry, 65 kilovolts, wet, 40 kilovolts; 2-unit, dry, 120 kilovolts, wet, 75 kilovolts.

Shipping weight: 1-unit, 7 1/2 pounds; 2-unit, 13 1/4 pounds.

No.	Description	STRING, INCHES	
		1-Unit	2-Unit
11026	With Large Eye (5550) at Both Terminal Ends	7 13/16	12 3/16
11031	With Large Eye (5550) at One End and a Clevis (5559) at the Other Terminal	7 1/2	11 7/8
11032	With Clevis (5559) at Both Terminal Ends	7 3/16	11 3/16
11062	With Blind Adapter (5654) at Both Terminal Ends	4 9/16	8 3/16
11063	With Blind Adapter (5654) at One End and a Large Eye (5550) at the Other Terminal	6 3/16	10 3/16
11064	With Clevis (5559) at One End and Blind Adapter (5654) at the Other Terminal	5 7/8	10 1/4
11077	With Clevis (5559) at One End and Thimble Adapter (5721) at the Other Terminal	7 5/8	12
11078	With Large Eye (5550) at One End and Thimble Adapter (5721) at the Other Terminal	7 15/16	12 5/16
11079	With Blind Adapter (5654) at One End and Thimble Adapter (5721) at the Other Terminal	6 5/16	10 11/16
11080	With Thimble Adapter (5721) at Both Terminal Ends	8 1/4	12 5/8

Electrical and mechanical values are based on tests conducted in accordance with latest A.I.E.E. Specifications.

Any number of units (1054) may be assembled on a 5/8-inch spacing by means of soft drawn copper links (5657), cast bronze couplers (5656 or 5697), phosphor bronze spring clips (5773); the end terminals or adapters are of forged steel, either blind (5668) or clevis (5681) type.

Cat. No. 11069 Assembly has a blind adapter at top and bottom.

Cat. No. 11070 Assembly has a clevis adapter at the top and blind adapter at the bottom.

Cat. No. 11071 Assembly is similar to Cat. No. 11069 except has wing couplers (5697).

Cat. No. 11072 Assembly is similar to Cat. No. 11070 except has wing couplers.

No. Units	DIMENSION A, IN.		FLASH-OVER, Kv.		GROSS WT., LBS.	
	11069	11070	Dry	Wet	11069	11070
Type 1	5 7/8	7 1/2	75	45	19 1/2	19 1/2
Type 2	11 1/4	12 7/8	145	90	32 1/2	33
Type 3	16 3/8	18 1/4	205	135	50	51
Type 4	22	23 5/8	250	170	65	66 1/2
Type 5	27 3/8	29	300	205	80	82
Type 6	32 3/4	34 3/8	350	240	95	97 1/2
Type 7	38 1/8	39 3/4	390	275	110	113
Type 8	43 1/2	45 1/8	430	310	125	128 1/2
Type 9	48 1/8	50 1/2	470	345	140	144
Type 10	54 1/4	55 7/8	510	375	155	159 1/2
Type 11	58 5/8	61 1/4	550	410	170	175
Type 12	65	66 3/8	590	445	190	195 1/2

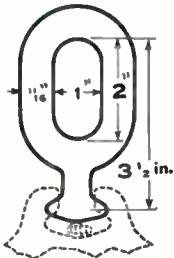
Electrical and mechanical values are based on tests conducted in accordance with A. I. E. E. Specifications No. 41.

**Bulletins and Complete Information on
Hardware for High Voltage Insulators
Furnished on Application**

Thomas Insulator Fittings Hot Dip Galvanized Ball-Socket and Clevis Types

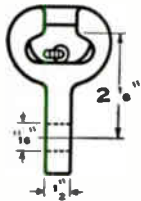
Made from drop forged steel. Ultimate mechanical strength, 21,000 pounds.

**No. 5709
Oval Eyes**



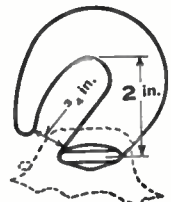
Ball-Socket type.
Weight per 100, 100 pounds.

**No. 5642
Tongues**



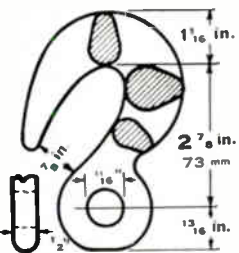
Ball-Socket type.
Malleable iron.
Ultimate mechanical strength 14,000 pounds.
Weight per 100, 106 pounds.

No. 5637 Hooks



Ball-Socket type.
Weight per 100, 75 pounds.

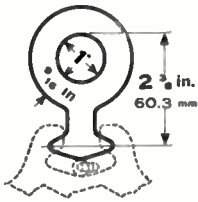
No. 5596 Hooks



Clevis type.
Weight per 100, 94 pounds.

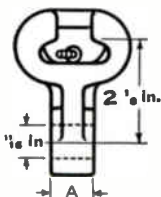
Packed to suit quantity ordered.

No. 5847 Eyes



Ball-Socket type.
Weight per 100, 50 pounds.

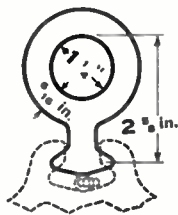
**No. 5643
Tongues**



Ball-Socket type.
Malleable iron.
Ultimate mechanical strength 18,000 pounds.

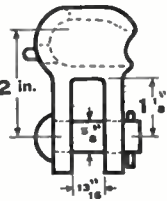
Type No.	Dim. In.	Wt. Lb. per 100
T-1	7/8	125
T-2	1 3/16	138
T-3	1 5/8	156
T-4	1 7/16	153
T-5	2	172
T-6	5/8	115

No. 5638 Eyes



Ball-Socket type.
Weight per 100, 56 pounds.

**No. 5640
Clevises**



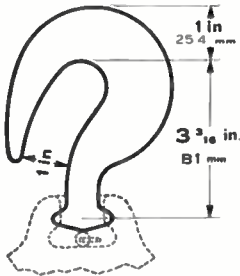
Ball-socket type.
Malleable iron.
Ultimate mechanical strength 16,000 pounds.
Weight per 100, 138 pounds.

No. 5639 Clevises

Ball socket type.
Furnished complete.

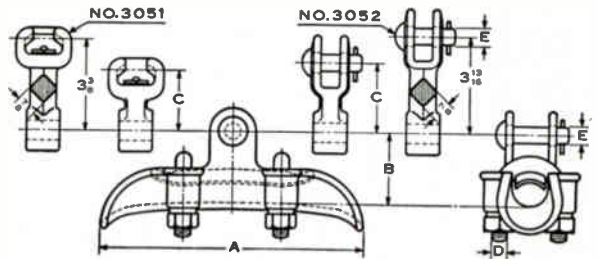
Type No.	Dim. Inches	A	B	C	D
T-1	1 3/16	5/8	1 5/8	2 3/4	
T-2	1 3/16	5/8	1 1/8	2 1/4	
T-3	1 3/16	5/8	2 3/16	3 3/4	

No. 5810 Hooks



Ball-Socket type.
Weight per 100, 113 pounds.

Thomas Suspension Clamps Drop Forged Steel—Hot Dip Galvanized Envelope Type



Made from S.A.E. 1035 Copper bearing steel.
Ball-Socket and Clevis type fittings.

No.	Type of Connector	Cable Size		DIMENSIONS—INCHES					Gross Weight Pounds Per 100
		Max. In.	Min. In.	A	B	C	D	E	
6200	Socket	.46	.125	7	2 1/4	2 5/16	1/2	5/8	315
6230	Clevis	.46	.125	7	2 1/4	2 1/2	1/2	5/8	315
6240	None	.46	.125	7	2 1/4	...	1/2	5/8	230
6201	Socket	.60	.20	7	2 1/4	2 5/16	1/2	5/8	315
6231	Clevis	.60	.20	7	2 1/4	2 1/2	1/2	5/8	315
6241	None	.60	.20	7	2 1/4	...	1/2	5/8	230
*6251	Socket	.60	.14	7	2 1/4	2 5/16	1/2	5/8	315
*6261	Clevis	.60	.14	7	2 1/4	2 1/2	1/2	5/8	315
*6271	None	.60	.14	7	2 1/4	...	1/2	5/8	230
6202	Socket	.70	.30	8	2 3/4	2 5/16	1/2	5/8	480
6232	Clevis	.70	.30	8	2 3/8	2 1/2	1/2	5/8	480
6242	None	.70	.30	8	2 3/8	...	1/2	5/8	420
6203	Socket	.82	.40	8	2 3/8	2 5/16	1/2	5/8	480
6233	Clevis	.82	.40	8	2 3/8	2 1/2	1/2	5/8	480
6243	None	.82	.40	8	2 3/8	...	1/2	5/8	420
6204	Socket	1.00	.50	10	2 1/2	2 5/16	1/2	5/8	650
6234	Clevis	1.00	.50	10	2 1/2	2 3/4	1/2	5/8	650
6244	None	1.00	.50	10	2 1/2	...	1/2	5/8	495
6205	Socket	1.15	.50	10	2 1/2	2 5/16	1/2	5/8	655
6235	Clevis	1.15	.50	10	2 1/2	2 3/4	1/2	5/8	655
6245	None	1.15	.50	10	2 1/2	...	1/2	5/8	500
6255	Socket	1.27	.75	10	2 1/2	2 5/16	1/2	5/8	655
6265	Clevis	1.27	.75	10	2 1/2	2 3/4	1/2	5/8	655
6275	None	1.27	.75	10	2 1/2	...	1/2	5/8	500
6206	Socket	1.375	.80	10	2 13/16	2 5/16	1/2	5/8	865
6236	Clevis	1.375	.80	10	2 13/16	2 3/4	1/2	5/8	865
6246	None	1.375	.80	10	2 13/16	...	1/2	5/8	705
6257	Socket	1.45	.80	10	2 13/16	2 5/16	1/2	5/8	865
6267	Clevis	1.45	.80	10	2 13/16	2 3/4	1/2	5/8	865
6277	None	1.45	.80	10	2 13/16	...	1/2	5/8	705
6207	Socket	1.60	.80	10	2 13/16	2 5/16	1/2	5/8	870
6237	Clevis	1.60	.80	10	2 13/16	2 3/4	1/2	5/8	870
6247	None	1.60	.80	10	2 13/16	...	1/2	5/8	710
6208	Socket	1.80	1.15	12	3 1/8	2 5/16	5/8	5/8	1050
6238	Clevis	1.80	1.15	12	3 1/8	2 3/4	5/8	5/8	1050
6248	None	1.80	1.15	12	3 1/8	...	5/8	5/8	865
6209	Socket	2.00	1.15	12	3 3/8	2 5/16	5/8	5/8	1130
6239	Clevis	2.00	1.15	12	3 3/8	2 3/4	5/8	5/8	1130
6249	None	2.00	1.15	12	3 3/8	...	5/8	5/8	935
6210	Socket	2.25	1.50	12	3 11/16	2 5/16	5/8	5/8	1360
6280	Clevis	2.25	1.50	12	3 11/16	2 3/4	5/8	5/8	1360
6290	None	2.25	1.50	12	3 11/16	...	5/8	5/8	1150

J-Bolts are standard on No. 6200 and 6201. U-Bolts can be supplied. Specify type of bolt required.

U-Bolts are standard on No. 6202 and larger sizes. J-Bolts can be supplied. Specify type of bolt required.

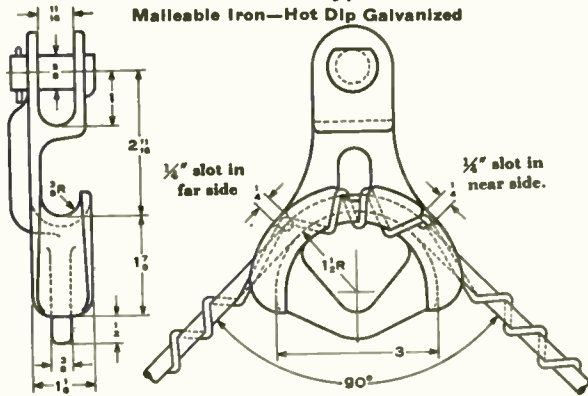
One-half inch round arcing horns on No. 6200, 01, 02 and 03 regularly furnished integral with keeper. On larger sizes, round or flat Arcing Horns are regularly attached to square shank adapters No. 3051 and 3052.

Aluminum or Copper Liners, which reduce the maximum cable-diameter accommodation by .1 of an inch, can be supplied, formed and riveted to both the clamp body and keeper.

*Furnished with reversible two-groove keeper for wide range of conductor diameter accommodation. All designs of the above-clamp can be furnished with fitting for attachment to Hewlett Type insulator strings. Specify type of liner required.

Thomas Moderate Voltage Cable Clamps

Boltless Type

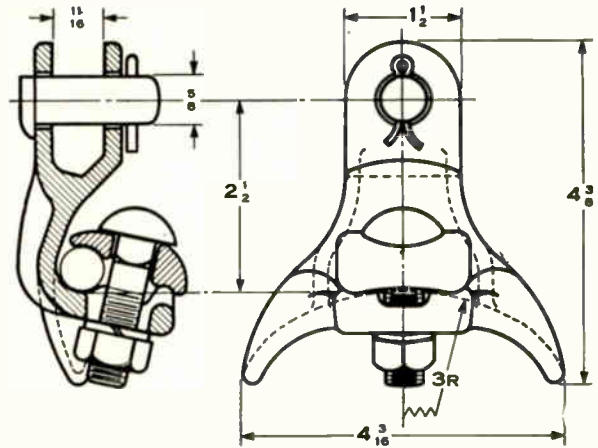


No. 10455 is side opening type. No. 10441 without side opening.

No.	10455	10441
Minimum Cable Size	in. .20	.20
Maximum Cable Size	in. .62	.62
Ultimate Mechanical Strength	lb. 6500	7000
Shipping Weight per 100	lb. 155	140

No. 81460 Angle Clamps

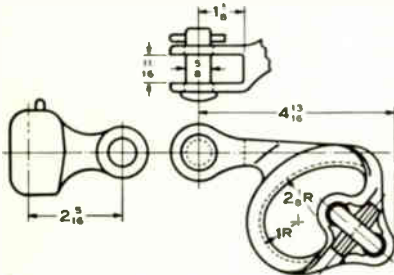
Malleable Iron—Hot Dip Galvanized



For rural electrification. A one-piece assembly clamp.
 Minimum Cable Size.....in. .162
 Maximum Cable Size.....in. .60
 Ultimate Mechanical Strength.....lb. 5000
 Shipping weight per 100.....lb. 162

Snubbing Type

Drop Forged Steel—Hot Dip Galvanized



For all conductors within its size range, except A.C.S.R.

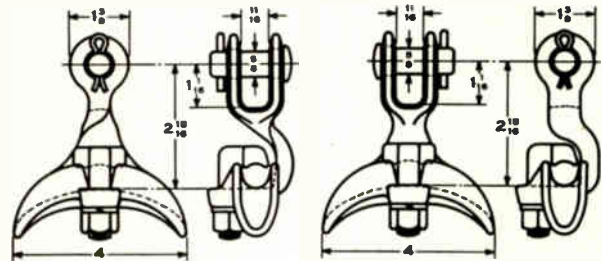
Clamp is well suited for use with solid or stranded copper, copperweld, copper, and other similar composite conductors.

Clamp is light in weight and

size, yet amply strong for the service for which it is designed. No. 2102 without ball and socket eye. No. 21028 with ball and socket eye.

No.	2102	21028
Minimum Cable Size	in. .128	.128
Maximum Cable Size	in. .375	.375
Ultimate Mechanical Strength	lb. 7000	7000
Shipping Weight per 100	lb. 175	260

Drop Forged Steel—Hot Dip Galvanized



No. 2200

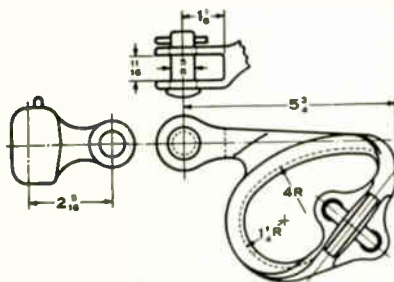
No. 2300

For rural electrification. A one-piece assembly clamp.
 No. 2200 2300
 Minimum Cable Size.....in. .12 .12
 Maximum Cable Size.....in. .60 .60
 Ultimate Mechanical Strength.....lb. 5000 5000
 Shipping Weight per 100.....lb. 145 145

Thomas Dead End Strain Clamps

Snubbing Type

Drop Forged Steel—Hot Dip Galvanized

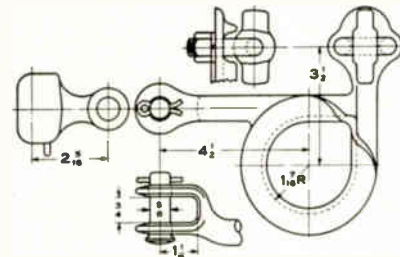


For all conductors within its size range including A.C.S.R., this clamp is amply strong while in service or while being pulled up during installation. Reversible two-groove keepers accommodate a wide range of conductor sizes. Side-opening feature

and reversible keepers make for easy installation and line work. For stranded copper, composites, and especially suited for No. 2-8 Strand and No. 4-8 Strand A.C.S.R.

No. 2104 without ball and socket eye. No. 21048 with ball and socket eye.

No.	2104	21048
Minimum Cable Size	in. .187	.187
Maximum Cable Size	in. .50	.50
Ultimate Mechanical Strength	lb. 9000	9000
Shipping Weight per 100	lb. 210	295



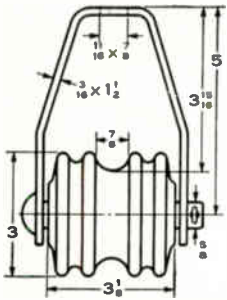
Designed for use with No. 6 to 2/0 bare solid copper; No. 7 to 4/0 bare stranded copper; No. 9 to No. 1-T. B.W.P.; No. 4 to 4/0 all aluminum and No. 8 to 2/0 A.C.S.R. with armor ribbon.

Being furnished with U bolts they will accommodate all conductors from .16 inch minimum to .55 inch maximum overall diameters.

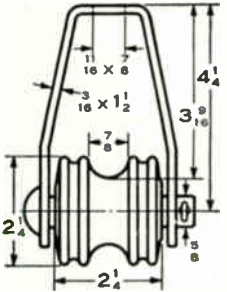
No. 7511 without ball and socket eye. No. 7548 with ball and socket eye.

No.	7511	7548
Minimum Cable Size	in. .16	.16
Maximum Cable Size	in. .55	.55
Ultimate Mechanical Strength	lb. 10000	10000
Shipping Weight per 100	lb. 263	365

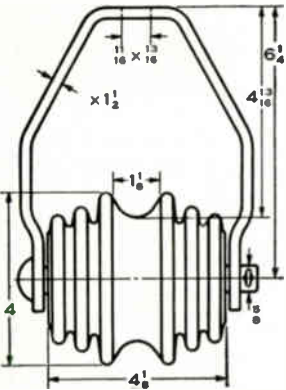
Thomas Dead End Clevis Strain Porcelain Insulator Assemblies Wet Process—Brown Glaze



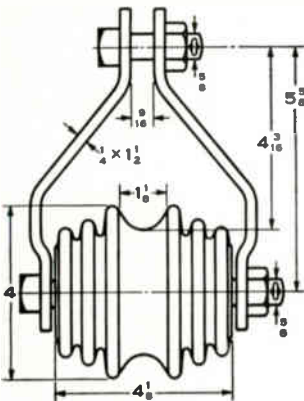
Assembly No. **13204**
 Using Spool No. **12018-W**
 Dry Flash-Over Voltage **25000**
 Wet Flash-Over Voltage **15000**
 Mechanical Strength lb. **4000**
 No. in Barrel **125**
 Ship. Weight per 100 lb. **290**



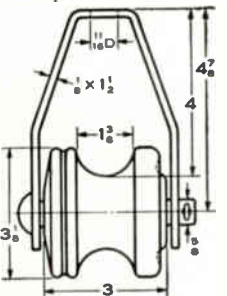
Assembly No. **13205**
 Using Spool No. **12017-W**
 Dry Flash-Over Voltage **20000**
 Wet Flash-Over Voltage **12000**
 Mechanical Strength lb. **3000**
 No. in Barrel **200**
 Ship. Weight per 100 lb. **160**



Assembly No. **13207**
 Using Spool No. **12082-W**
 Dry Flash-Over Voltage **36000**
 Wet Flash-Over Voltage **25000**
 Mechanical Strength lb. **6000**
 No. in Barrel **67**
 Ship. Wt. per 100 lb. **495**



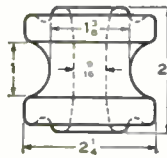
Assembly No. **13228**
 Using Spool No. **12082-W**
 Dry Flash-Over Voltage **36000**
 Wet Flash-Over Voltage **25000**
 Mechanical Strength ... lb. **6000**
 No. in Barrel ... **67**
 Ship. Wt. Per 100 lb. **552**



Assembly No. **13226-T-1**
 Using Spool No. ***5897-D**
 Dry Flash-Over Voltage **25000**
 Wet Flash-Over Voltage **15000**
 Mechanical Strength lb. **3000**
 No. in Barrel **125**
 Ship. Weight per 100 lb. **256**

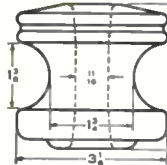
*Dry process spool. Flash-Over Voltage given is for wet process spool.

Thomas Secondary Rack and Clevis Porcelain Insulators Dry and Wet Process—Brown Glaze No. 6997 Secondary Rack



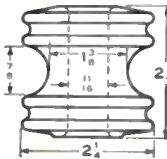
No.	6997-D	6997-W
Type of Insulator ...	Dry Process	Wet Process
For Size Bolt ... in.	1/2	1/2
No. in Carton ...	100	100
Ship. Wt. per 100 lb.	42	45

No. 5897 Secondary Rack



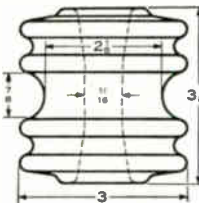
No.	5897-D	5897-W
Type of Insulator ...	Dry Process	Wet Process
For Size Bolt ... in.	5/8	5/8
No. in Carton ...	50	50
Ship. Wt. per 100 lb.	116	122

No. 12017-W



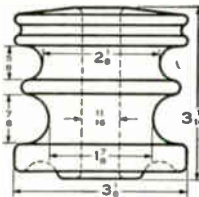
Type of Insulator	Wet Process
For Size Bolt ... in.	5/8
No. in Carton ...	100
Ship. Weight per 100 ... lb.	49

No. 12018-W



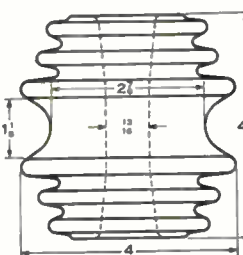
Type of Insulator	Wet Process
For Size Bolt ... in.	5/8
No. in Carton ...	50
Ship. Wt. per 100 ... lb.	140

No. 6342-W Secondary Rack



Type of Insulator	Wet Process
For Size Bolt ... in.	5/8
No. in Carton ...	50
Ship. Weight per 100 ... in.	160

No. 12082-W



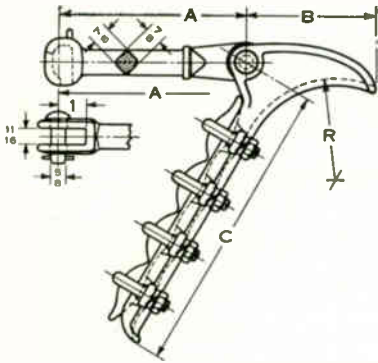
Type of Insulator	Wet Process
For Size Bolt ... in.	3/4
No. in Carton ...	30
Ship. Weight per 100 lb.	250

**We are prepared to furnish
 a complete line of
 SWITCH AND BUS INSULATORS
 Send us your specifications**

Thomas Forged Steel Strain Clamps

Hot Dip Galvanized

Trunnion Type



Designed especially for dead-ending steel, copperweld or other high strength cables.

Has transversely ribbed seats in both clamp body and keeper. All parts are heat treated to avoid distortion under severe bolt pull-up, necessary to obtain high slip-strength.

Aluminum or copper liners, can be supplied, formed and riveted to both clamp body and keeper.

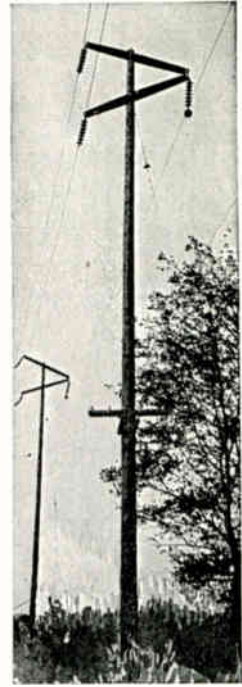
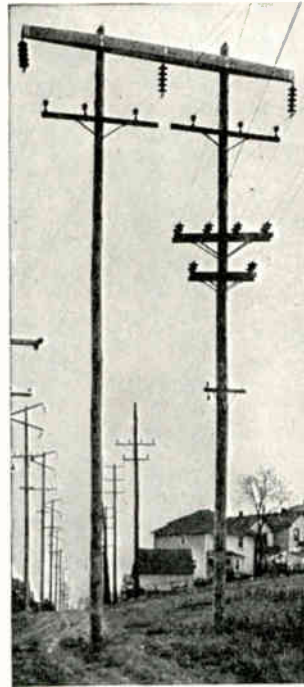
Specify type of liner required.

No.	Type Fitting	D Cable Size In.		DIMENSIONS-INCHES			
		Max.	Min.	A	B	C	R
5000-C	Socket	.55	.187	5 3/4	4	6 3/4	2 1/2
5010-C	Clevis	.55	.187	5 3/4	4	6 3/4	2 1/2
5020-C	None	.55	.187	5 3/4	4	6 3/4	2 1/2
5040-C	Socket	.55	.187	5 3/4	4	6 3/4	2 1/2
5050-C	Clevis	.55	.187	5 3/4	4	6 3/4	2 1/2
5060-C	None	.55	.187	5 3/4	4	6 3/4	2 1/2
5001-C	Socket	.68	.40	5 3/4	5 1/2	12 1/2	4 1/4
5011-C	Clevis	.68	.40	5 3/4	5 1/2	12 1/2	4 1/4
5021-C	None	.68	.40	5 3/4	5 1/2	12 1/2	4 1/4
5002-C	Socket	.83	.40	5 3/4	5 1/2	12 1/2	4 1/4
5012-C	Clevis	.83	.40	5 3/4	5 1/2	12 1/2	4 1/4
5022-C	None	.83	.40	5 3/4	5 1/2	12 1/2	4 1/4
5003-C	Socket	.96	.82	7 3/4	6 1/2	14 3/8	6 7/8
5013-C	Clevis	.96	.82	7 3/4	6 1/2	14 3/8	6 7/8
5023-C	None	.96	.82	7 3/4	6 1/2	14 3/8	6 7/8
5004-C	Socket	1.10	.82	7 3/4	6 1/2	14 3/8	6 7/8
5014-C	Clevis	1.10	.82	7 3/4	6 1/2	14 3/8	6 7/8
5024-C	None	1.10	.82	7 3/4	6 1/2	14 3/8	6 7/8
5005-C	Socket	1.28	.82	7 3/4	6 5/8	18	7 3/4
5015-C	Clevis	1.28	.82	7 3/4	6 5/8	18	7 3/4
5025-C	None	1.28	.82	7 3/4	6 5/8	18	7 3/4

No.	Type Fitting	U Bolts		Ultimate Strength Pounds	Gross Weight Lb.
		Quantity	Size In.		
5000-C	Socket	2	1/2	25,000	540
5010-C	Clevis			25,000	540
5020-C	None			25,000	310
5040-C	Socket	2	1/2	30,000	540
5050-C	Clevis			30,000	540
5060-C	None			30,000	310
5001-C	Socket	4	3/16	25,000	925
5011-C	Clevis			25,000	925
5021-C	None			25,000	745
5002-C	Socket	4	3/16	25,000	935
5012-C	Clevis			25,000	935
5022-C	None			25,000	755
5003-C	Socket	4	5/8	35,000	1,520
5013-C	Clevis			35,000	1,520
5023-C	None			35,000	1,260
5004-C	Socket	4	5/8	35,000	1,530
5014-C	Clevis			35,000	1,530
5024-C	None			35,000	1,270
5005-C	Socket	5	5/8	35,000	2,275
5015-C	Clevis			35,000	2,275
5025-C	None			35,000	2,010

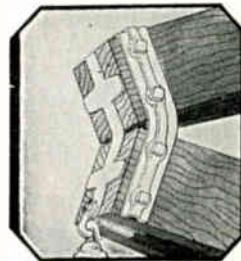
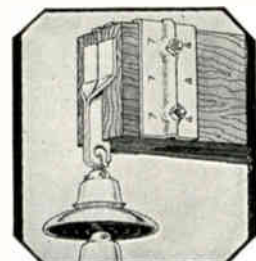
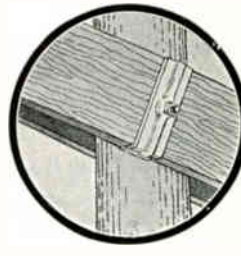
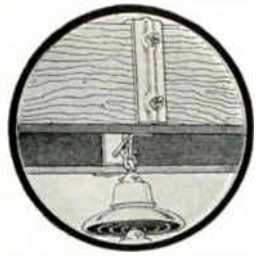
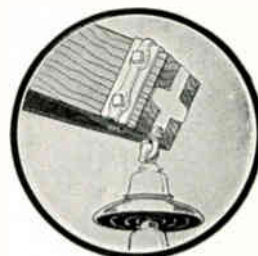
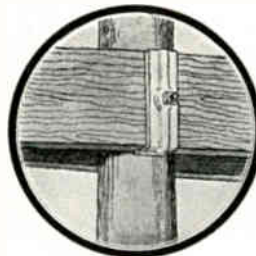
Arcing horns can be furnished if desired.

Hubbard High Tension Crossarm Hardware Fittings

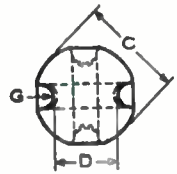


High Tension Crossarm Hardware Fittings for double-plank H-frame and wishbone crossarm construction are obtainable to meet various specifications.

Inquiries and designs for estimates are invited.

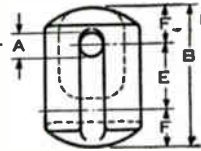


Porcelain Guy Strain Insulators

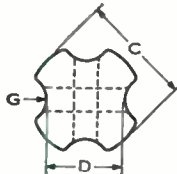


Style 1, No. 500

Dry Process Porcelain—
Brown Glaze

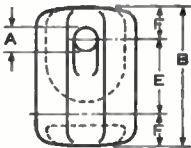


No.	500
Height..... inches	2 1/8
Diameter..... inches	1 1/16
Hole..... inches	3/8
Mechanical Strength..... pounds	4000
Shipping Weight per 100..... pounds	21



Style 2, No. 502

Dry Process Porcelain—
Brown Glaze

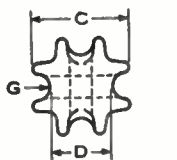


No.	502	504	506
Height..... inches	3 1/4	3 3/4	5 1/4
Diameter..... inches	2 5/8	2 7/8	3 3/8
Hole..... inches	9/16	5/8	1 1/16
Mechanical Strength..... pounds	14000	19000	45000
No. in Box.....	50	50	30
Ship. Weight per 100..... pounds	110	154	281

Style 2, No. 602

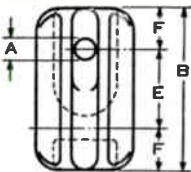
Wet Process Porcelain—Brown Glaze

No.	602	604	610
Height..... inches	3 1/4	3 3/4	5 1/4
Diameter..... inches	2 5/8	2 7/8	3 3/8
Hole..... inches	9/16	5/8	1
Dry Flashover Voltage.....	23000	25000	31000
Wet Flashover Voltage.....	14000	15000	20000
Mechanical Strength..... pounds	11000	19000	45000
No. in Box.....	50	50	30
Ship. Weight per 100..... pounds	106	152	264



Style 3, No. 510

Wet Process Porcelain—
Brown Glaze

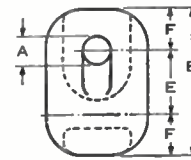
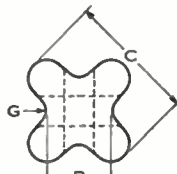


A guy strain insulator also used for dead-ending.

No.	510	511	513	514	515
Height..... in.	3 1/2	5 3/8	10	7	6 3/4
Diameter..... in.	2 1/2	3 1/4	4 3/4	3 3/4	3 1/2
Hole..... in.	5/8	3/4	1 1/2	1	1
Dry Flashover Voltage	30000	35000	55000	45000	40000
Wet Flashover Voltage	15000	20000	30000	25000	25000
Mechanical Strength lb.	10000	15000	45000	20000	20000
No. in Box.....	50	30	25	25	25
Ship. Weight per 100 lb.	104	243	1060	446	360

Style 4, No. 520

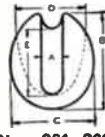
Wet Process Porcelain—
Brown Glaze



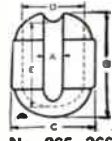
No.	520	521	522	523	524	525
Height..... inches	3 1/2	4	4	5 1/2	6 3/4	6 3/4
Diameter..... inches	3 1/4	3 5/8	3 5/8	3 3/8	4 3/4	4 3/4
Hole..... inches	1/2	1 1/16	1/8	3/4	3/4	1
Dry Flashover Voltage	30000	34000	35000	35000	40000	40000
Wet Flashover Voltage	14000	18000	18000	18000	21000	21000
Mechanical Strength..... lb.	10000	12000	12000	12000	18000	18000
No. in Box.....	50	50	50	30	25	25
Ship. Wt. per 100..... lb.	132	162	152	248	473	456

Porcelain Guy Strain Insulators

Dry Process, Porcelain—Brown Glaze



Nos. 361, 362

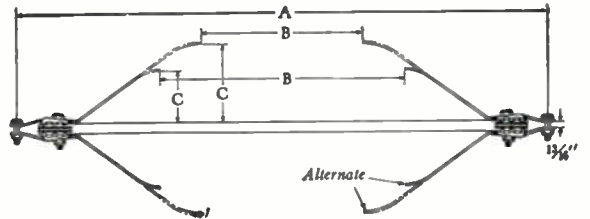


Nos. 365, 366

No.	361	362	365	366
Height..... inches	3	4 7/16	2 1/2	3 1/4
Diameter..... inches	2 5/8	3 1/4	2 3/16	2 5/8
Groove..... inches	1 1/16	7/8	1/2	5/8
Mechanical Strength..... pounds	19000	25000	6500	15500
No. in Barrel.....	500	182	625	350
Ship. Wt. per 100..... pounds	82	230	64	115

Hubbard O-B Wood Guy Strain Insulators

Fittings Hot Galvanized



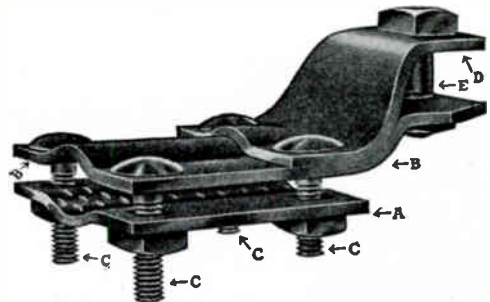
Provision is made for wood shrinkage and the loading of the wood fibers by friction and tension rather than by shear. These features are provided by the self-tightening grip and inner friction plates which will develop the full strength of the wood over a period of many years.

Furnished with arcing horns unless otherwise specified.

The number 6 or 9 after the No. indicates length of clear wood.

No.	Ultimate Strength Pounds	Length Inches	Shipping Weight Pounds per 100	No.	Ultimate Strength Pounds	Length Inches	Shipping Weight Pounds per 100
30594-6	7000	93	4700	29647-6	24000	93	5300
79750-6	7000	93	5500	79752-6	24000	93	6100
30594-9	7000	129	5050	29647-9	24000	129	5767
79750-9	7000	129	6455	79752-9	24000	129	7370
30478-6	12000	93	5000	30783-6	36000	93	6900
79751-6	12000	93	5800	79753-6	36000	93	8500
30478-9	12000	129	5350	30783-9	36000	129	7367
79751-9	12000	129	6755	79753-9	36000	129	9770

Matthews Cable Clamps



Galvanized cable clamp for use on all copper power cables from 000 to 1,500,000 C.M. inclusive. Designed to do away with the need for costly splices, hazardous soldering operations and waste of costly cable, where power cable is used in industrial plants or on transmission cables, where strains do not exceed 1200 pounds.

For a.c. cables, the No. 3 clamp has two of the carriage bolts, C, on one side, made of Everdur to break the magnetic field. When used on cables carrying d.c., the four carriage bolts, C, are made of hot galvanized steel. Steel clamping plates, A, B, and D, and the steel strain insulator bolt, E, are hot galvanized.

Shipping weight per 100, 400 pounds.

No. 2.....	each	\$1.60
No. 3.....	each	2.10

All-Steel Public Utility Bodies

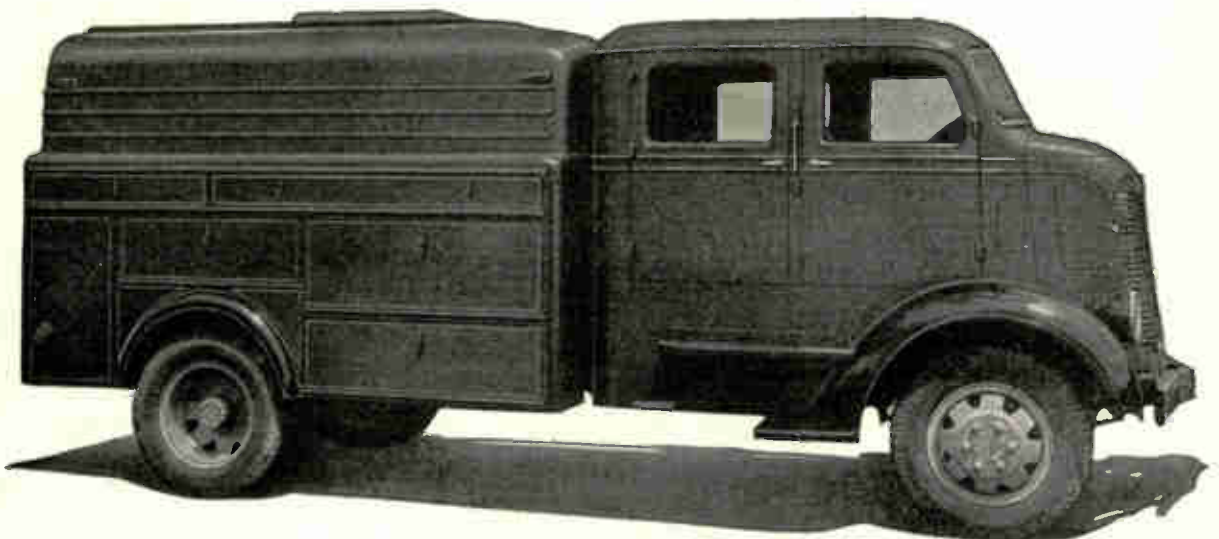
Series 500 Mounted on Conventional Type Chassis

Models are designed for all power and light or telephone work.

All-steel, electrically welded line construction and maintenance bodies are available for all wheelbases of conventional or C. O. E. type chassis.

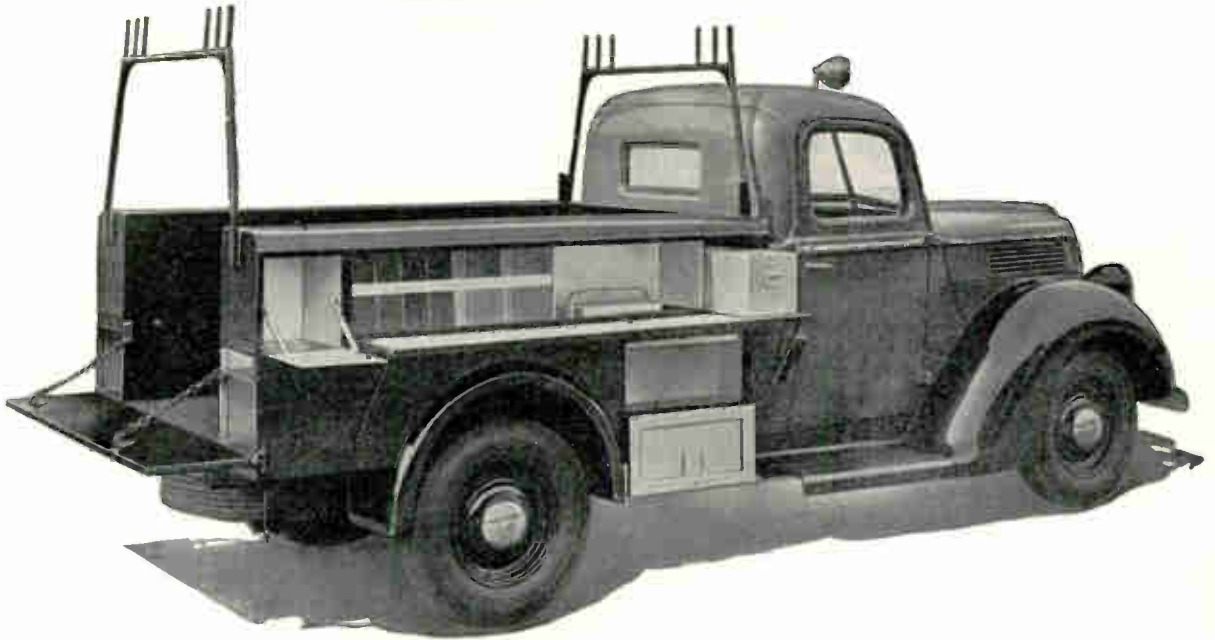
Bodies can be built to meet any desired specifications.

Write for complete information on utility bodies and equipment.



**Series 600 Mounted on Cab-Over-Body Type Chassis
with Custom-Built Utility Crew Cab**

All-Steel Public Utility Bodies



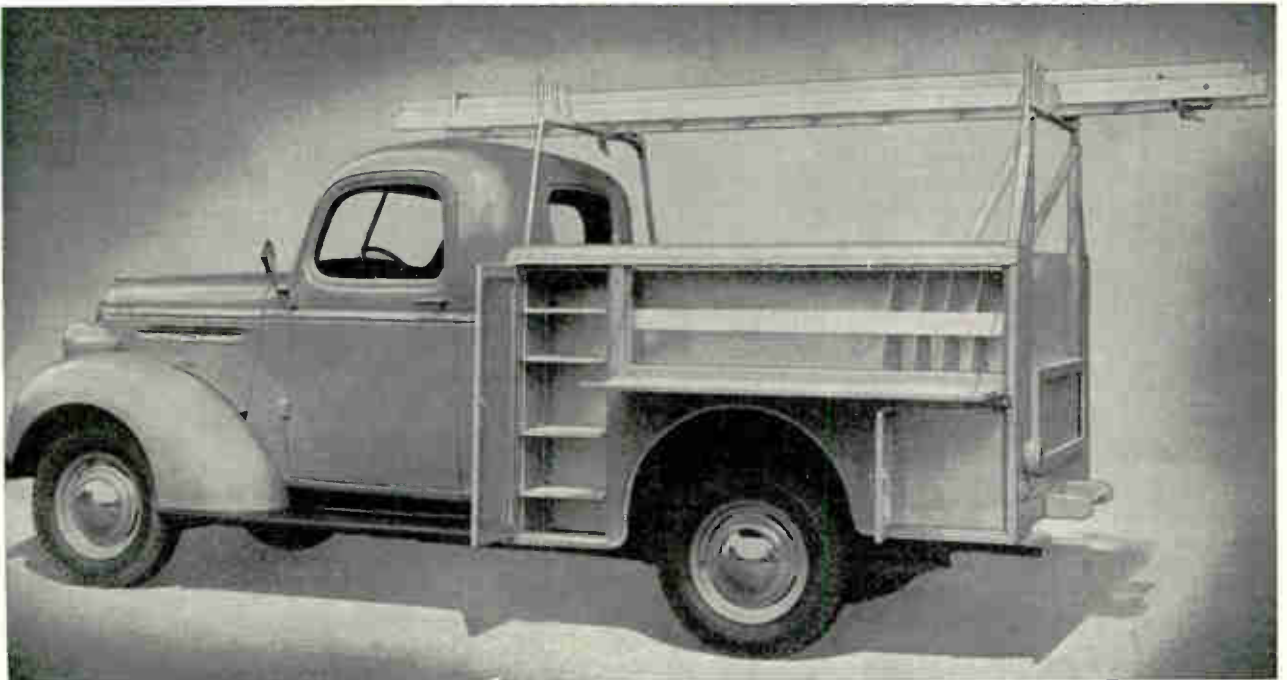
Series 60-M Meter Installation and General Service Body Mounted on a $\frac{3}{4}$ -Ton Chassis

All-Steel Utility Service Bodies are designed for all types of utility work—electric, water, street light maintenance and telephone.

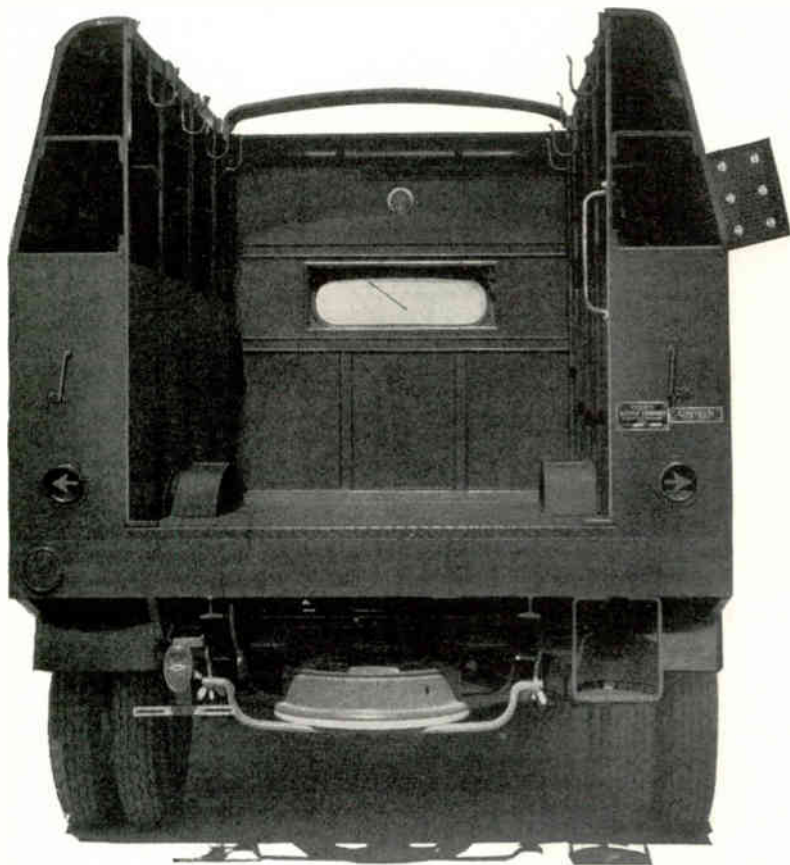
All models available for $\frac{1}{2}$ to 1-ton chassis.

Bodies can be built to meet any desired specifications.

Write for complete information.



Series 55-M Meter Installation and General Service Body Mounted on $\frac{1}{2}$ -Ton Chassis

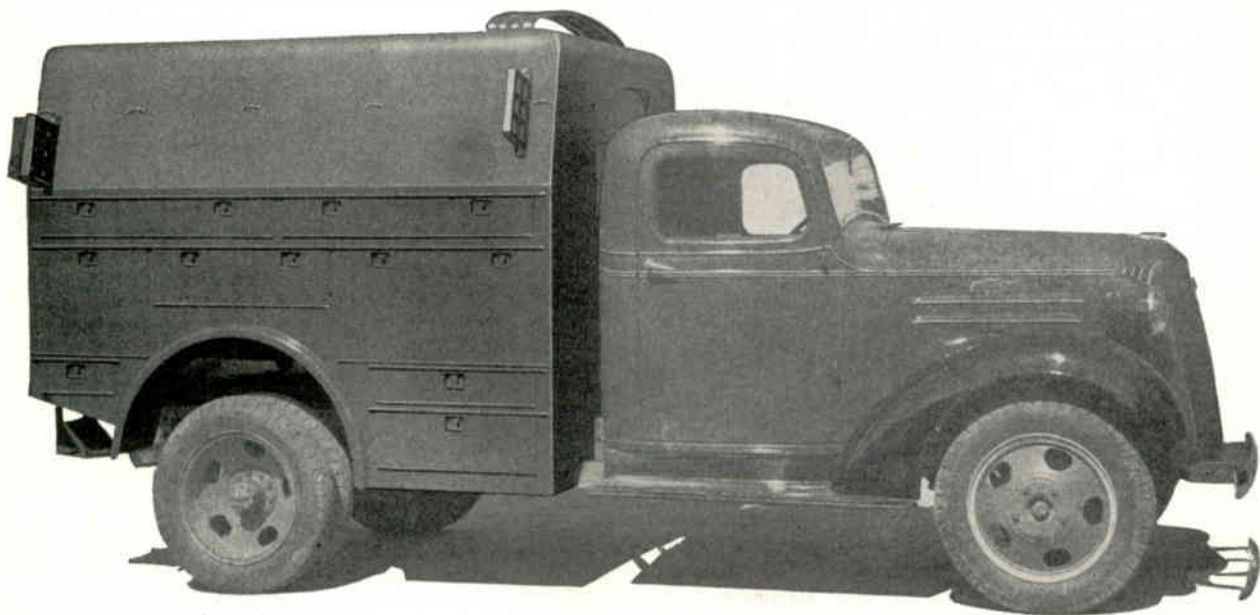
Model U-8 Graybar All Steel Line Maintenance Bodies**For Utility Service**

Designed to meet the requirements of the smaller utility companies, independent telephone companies and REA cooperatives.

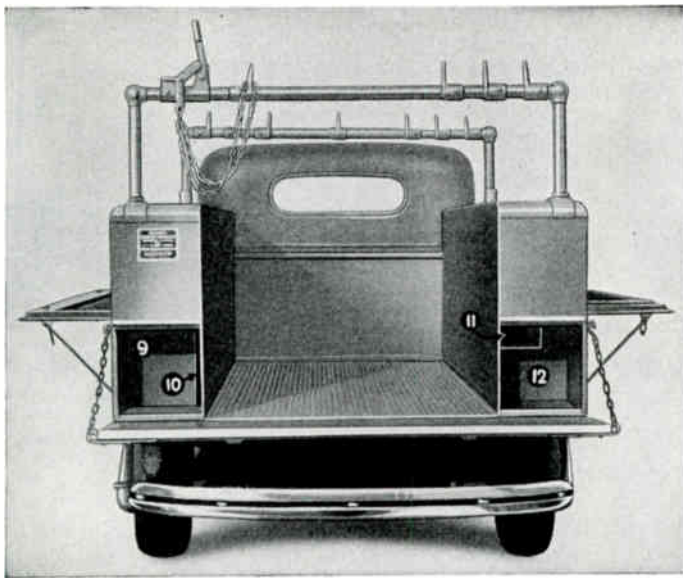
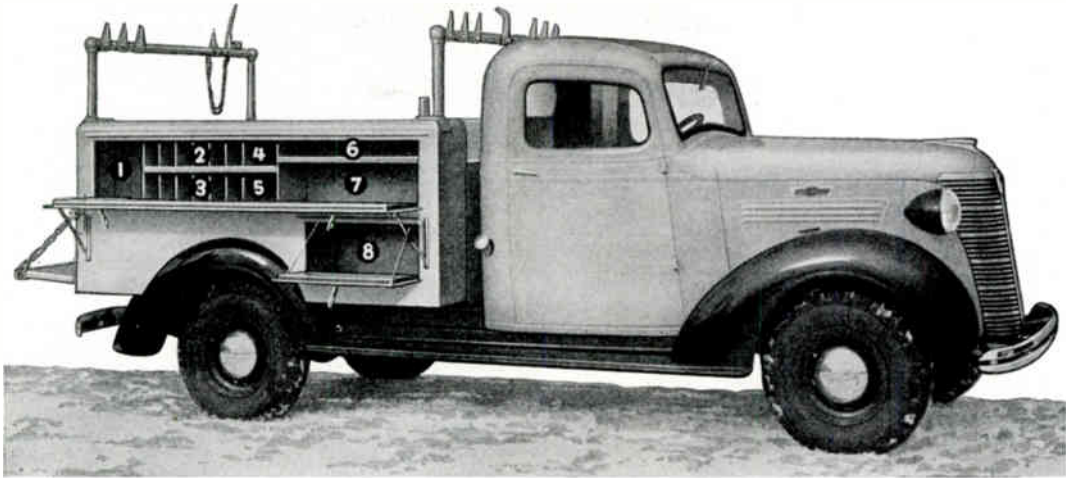
The body is 96 inches long, 76 inches wide with tool compartments, 12 inches deep. The loading space is 52 inches wide and 72 inches long. The body will fit a 1½ ton capacity truck with a CA dimension of 57 inches.

The standard body is equipped with tarpaulin bows, material hooks, ladder racks, rear step, and grab handle. A winch compartment can be furnished at a slight additional cost.

Complete Information and Prices upon Request



Model B-7 Graybar All-Steel Utility Bodies



For $\frac{3}{4}$ and 1-ton truck chassis with cab to axle dimension of approximately 50 inches.

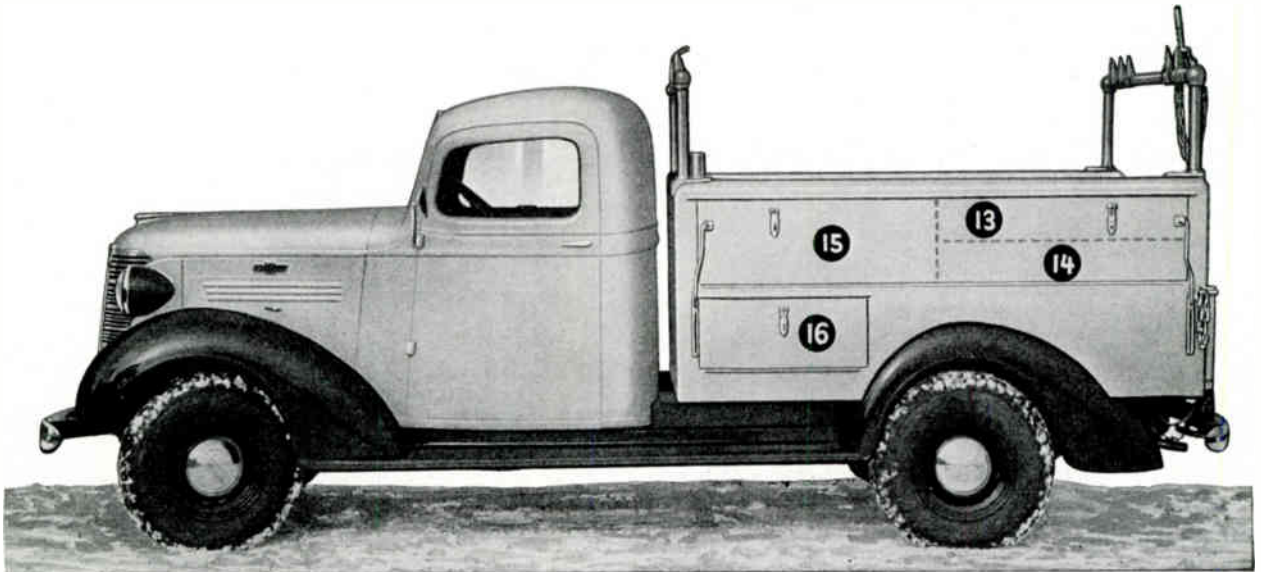
Outside length of body, 84 inches; outside width of body, 67 inches; floor width between compartments, 42 inches; compartment height from floor, 31 inches.

Approximate weight with ladder racks, 975 pounds.

Compartment Dimensions—Body Closed

	No. of Compartments	Width Inches	Height Inches	Depth Inches
①	1	16	18	11½
②	6	4	10	10½
③	6	4	8	11½
④	1	8	10	10½
⑤	1	8	8	11½
⑥	1	36	7	10½
⑦	1	36	11	11½
⑧	1	31	13	11½
⑨	1	12½	13	18
⑩	1	3	13	84
⑪	1	6	3	84
⑫	1	12½	13	18
⑬	1	42	9	11½
⑭	1	42	9	11½
⑮	1	42	18	11½
⑯	1	31	13	11½

Complete Information and Prices upon Request



Model B-7 Graybar All-Steel Utility Bodies

Applications

A sturdy, practical, compact unit built for years of service in diversified fields of operation.

The body has 30 square feet of floor space and is ideal as a delivery unit for radios, stoves, refrigerators and associated household furnishings.

The side panels open to conveniently located, roomy compartments which house supplies, tools and associated equipment needed for the installation, maintenance and repair of radios, stoves, refrigerators, telephones, and electric lines.

Because of the many purposes it serves, this body fits the needs of electric light and power companies, gas departments, RFA cooperatives, electrical contractors, independent telephone companies, etc.

Panels

The front and side panels are built of 18-gage stretcher leveled steel. The top of the compartments are covered with 16-gage stretcher leveled steel.

Floor

Constructed of 13-gage diamond plate steel securely riveted to the cross sills of the understructure. A 1½-inch flange of the floor is riveted to the panels.

Understructure

The understructure of the body is reinforced with 1½x2-inch steel strips welded to the 3-inch, 5-pound cross sills.

Tailgate

Constructed of 14-gage stretcher leveled steel, is strongly reinforced and operates on 3 hinges. May be lowered to the same parallel of the body's floor, increasing the floor length, 14 inches. The floor level is only 26 inches from the ground. When closed, the tailgate covers the compartments at the rear.

Compartment Doors

The two large compartment doors are 76 inches long and 13 inches wide. All doors operate on a full length, 2-inch piano type hinge and are fitted with hasp type handles which can be locked.

Snug fit and 18-gage drip moulding spot welded above each compartment door eliminate the entrance of moisture. When open, the two large doors are rigidly supported by steel rods. One end of these rods is fastened to the door and the other end operates in a slide.

The right side door has a wood filler and, at the rear, vise brackets. This together with its ample bracing makes the door suitable for a work bench.

Ladder Racks

Built of 1¼-inch pipe. The pipes are inserted in castings riveted to the body. The rear rack is removable and may be carried in sockets at the front end of the body.

Ladders, pike poles or other equipment can be carried on the racks. Casting on the racks and a hold-down clamp prevent creeping and rattling. Between the brackets and the clamp is a roller of Shelby tubing which facilitates removal and prevents scuffing of the ladder.

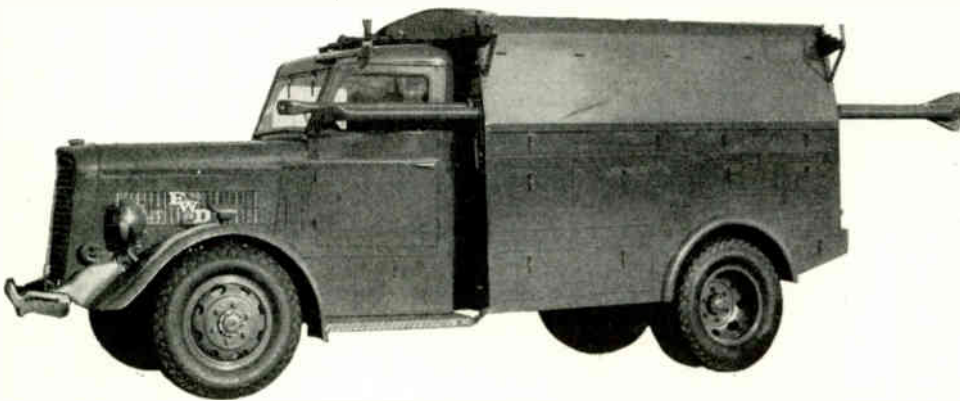
Notes

At a slight additional charge a tote-tray, sponge rubber lined, can be furnished.

Bodies may be purchased in prime paint or finished in colors to choice. It is recommended that bodies be installed to chassis at factory where experienced workmen have the necessary equipment available for installing the body satisfactorily.

A complete line of equipment for telephone, and electric power and light companies can be furnished, including winches, trailers, 8, 10 and 12-foot line construction and maintenance bodies, derricks, power reels, other accessories and small tools.

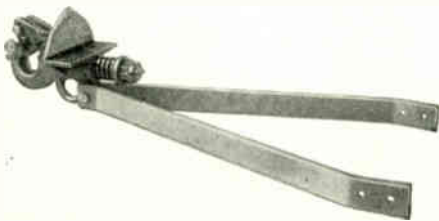
Graybar Line Construction and Maintenance Trucks



FWD Trucks complete with line bodies, single or double drum winches, pole derricks, and boring machines are available in sizes to meet every line construction and maintenance need.

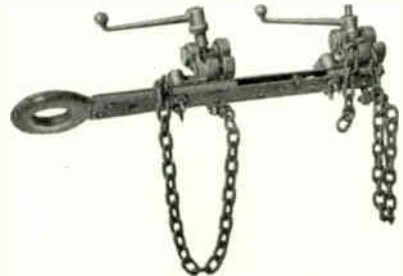
For complete information and prices, contact your nearest Graybar house or The Four Wheel Drive Auto Company, Clintonville, Wisconsin.

Model 1417 Graybar Towing Hooks



For trucks up to 3½-ton capacity. Attaches to frame of truck with braces to the side bars. Has coil spring to cushion starting and stopping shocks. Positive locking latch eliminates danger of uncoupling. Weight, 48 pounds.

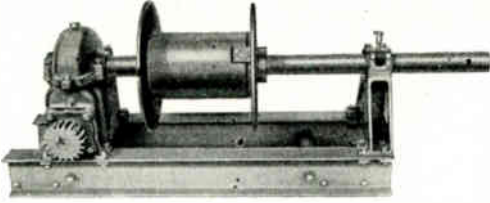
Type L Graybar Draw Bars



For use with pole dinkey and light trucks. Attaches to wood poles and forms link for connecting to pintle hook on truck. Inside diameter of pintle eye ring, 2⅝ inches. Weight, 31 pounds.

Prices upon Request

No. 12 Graybar Single Drum Winches 10,000-Pound Capacity



This winch is a modification of the regular standard single drum winch and is used for every purpose which requires pulling rope on a drum, operating cranes, pole setting derricks and for hoisting and hauling. This type winch is particularly popular for use on light model trucks where the use of a large winch-drum is not required and not much space is available for mounting.

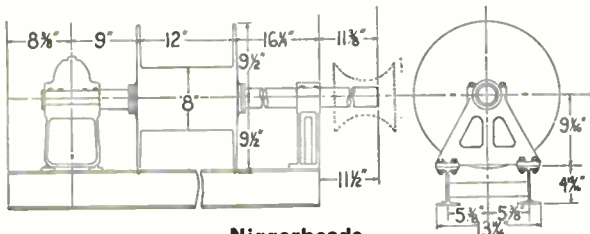
No brake nor clutch is required on this winch, for the winch cannot run free; the winch is driven when pulling and also when lowering. An automatic worm brake is standard equipment on this winch and assures added safety in operation.

It is flexible, light in weight, and built for hard service. To keep the weight to a minimum and assure a greater factor of safety, only high grade heat treated alloy steels and electric steel castings are used in its construction.

Intermittent Capacity, Single Line.....	pounds	10,000
Continuous Capacity, Single Line.....	pounds	5,000
Diameter of Drum.....	inches	8
Diameter of Drum Flange.....	inches	19
Approximate Space Required Back of Cab.....	inches	20
Weight, Winch Only.....	pounds	430
Approximate Weight, with SAE Power Take-Off.....	pounds	580
Approximate Weight, with Propeller Shaft Power Take-Off.....	pounds	780

Rope and Cable Capacity

Size.....in.	Steel $\frac{3}{8}$	Steel $\frac{7}{16}$	Steel $\frac{1}{2}$	Steel $\frac{5}{8}$	Manila $\frac{3}{4}$	Manila 1
No. of Feet...	1068	720	600	384	264	156



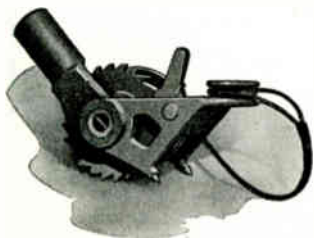
Niggerheads

Graybar Winches can be furnished with niggerheads on one or both sides. Simply by the use of a longer shaft and auxiliary supporting bearings, Winch can be equipped with niggerheads to meet practically every demand.

Standard niggerheads furnished are 8-inch; 12-inch niggerheads can also be furnished if desired.

Especially popular on the single drum models and are furnished at a slight additional cost. Ordinarily, when one niggerhead is wanted the standard winch is supplied with the niggerhead mounted on shaft extension, on right hand side. If desired, shafts long enough to place niggerheads beyond cab-line are furnished. In that case, out-board bearings are provided.

Graybar Pole Binders



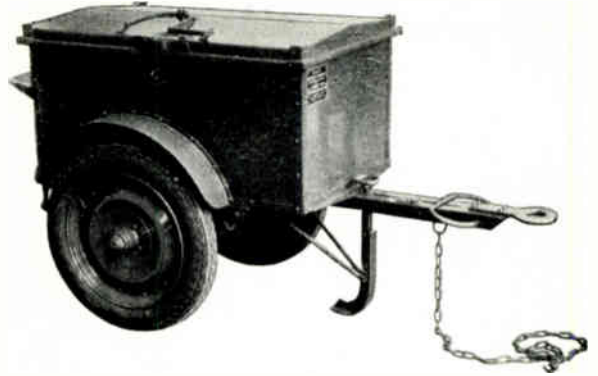
This portable binder is a small winch with a ratchet type holding attachment.

All surplus cable is carried on the drum of the small winch and there are no loose ends. The binder can be tightened at any time without releasing hook on the load.

Weight, 18½ pounds.

Prices upon Request

Model S Graybar Cable Splicer's Carts



An all steel, compact, rugged and theft-proof cart. The compartments provide a place for every tool within easy reach of the splicer. A folding leg supports the front end of the cart when parked.

Capacity, 1000 pounds; overall length, 74 inches; height, 41 inches; axle, 1¼ inches square; tread, 34 inches. Steel disc wheels; Timken bearings; tires, 4.75/19 4-ply.

Weight, 480 pounds.

Model 1775 Graybar Pole Dinkies



A 1-ton capacity, lightweight pole dinky for light construction or repair service.

Triangular shaped tongue is two 3-inch 5-pound channel beams. Bolsters are cast steel; axle is heat treated high carbon steel 2 inches square; tread, 50 inches. Tires 5.00/19 singles 6-ply or 5.50/17 singles 6-ply. Overall length, 104 inches.

Weight, 390 pounds.

Graybar Winch Line Hooks



For attaching to wire rope lines as used on truck winches.

It attaches easily and quickly to a line or loop and holds firmly until the pole is set. Slack in the line then permits detaching from ground with pike pole.

As line must be threaded through derrick sheave a hook that detaches easily increases the efficiency of the line crew. Weight, 4½ pounds.

Graybar Safety Hooks



Used with derrick and truck winch when raising derrick to operating position. Line is passed over spindle bar and threaded through the derrick sheave then attached to the safety hook. Winch power will then raise the derrick so it can be bolted in place by the linemen.

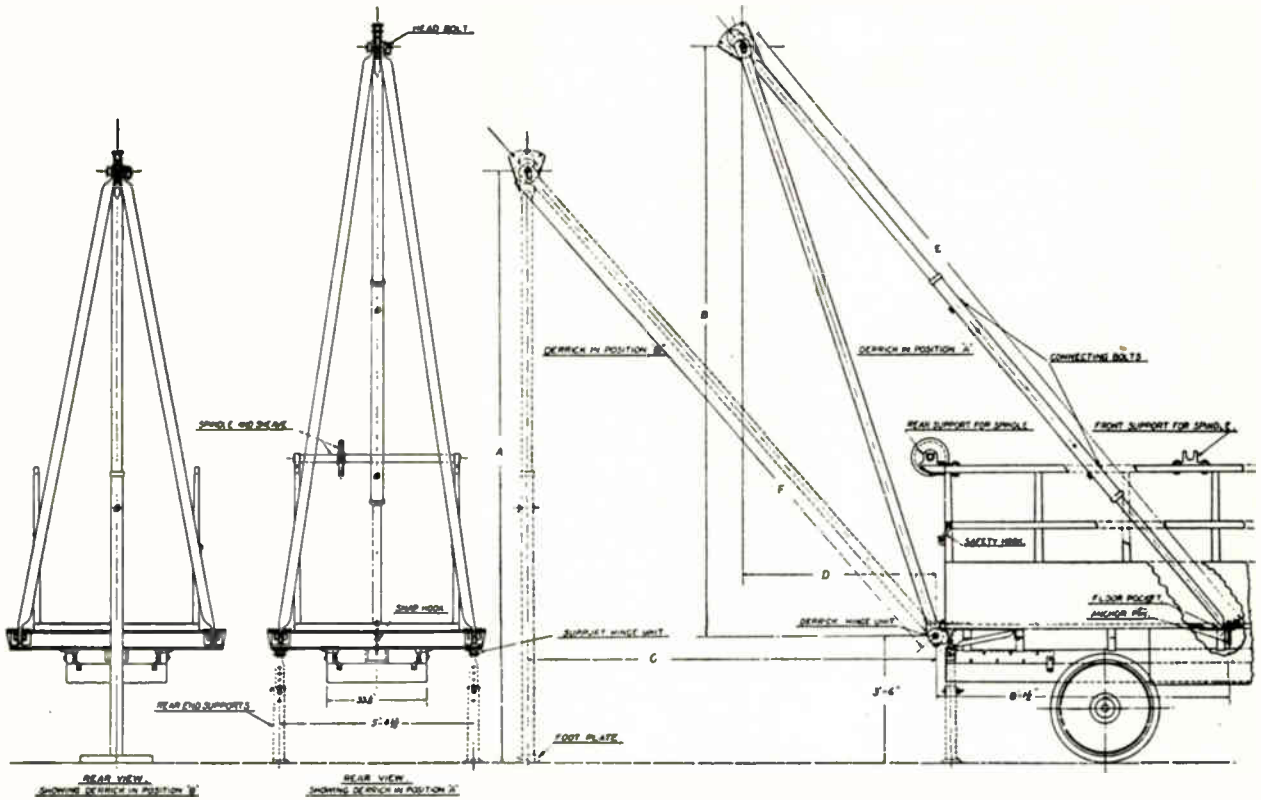
Hook is forged steel, designed so that the heaviest load is carried on the heavy section of the hook.

Weight, 3½ pounds.

Prices upon Request

Graybar LM Derricks

Light—Middle Type



This derrick is an ideal size for general purpose work, not only for maintenance, but for average line construction as well. Suitable for installation on trucks of 2 tons and larger capacity, and has a lift of 20 feet.

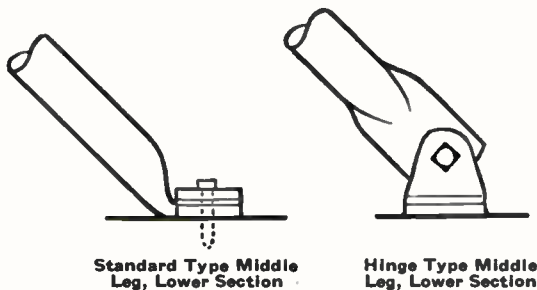
It is built to handle the average 45-foot pole with ample reserve for safety of men and equipment.

Specifications

Weight, 425 pounds.

Lifting Capacities

Ground Position (Center Leg Fully Telescoped)	10,000
Ground Position (Center Leg Fully Extended)	6,000
Truck Position	3,000



Notes

This derrick is also available with telescoping side legs at a slight additional charge. This feature was developed to allow the derrick to be transported more compactly and to allow free opening of both cab doors when the derrick is in carrying position.

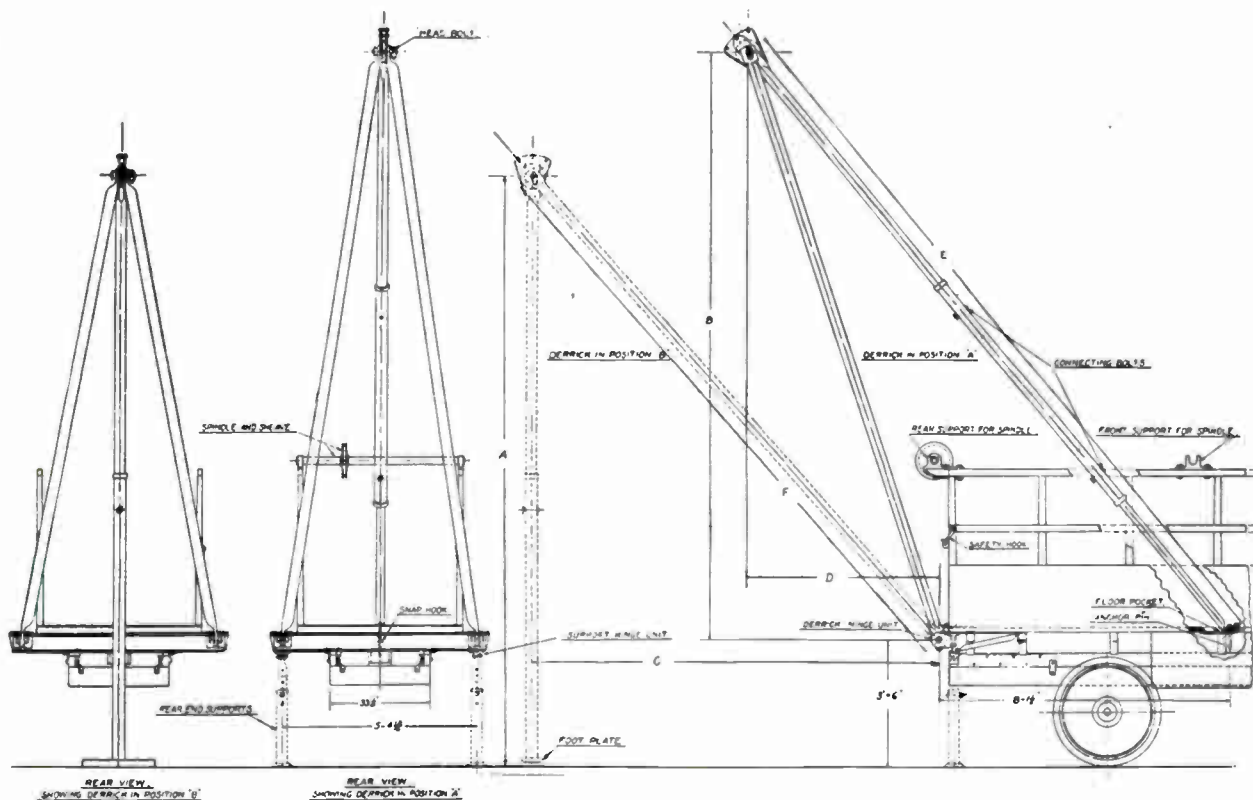
The capacity of the derrick is the same as the standard derrick. The side legs are made in two sections; upper section 8 feet 10 inches, lower section 10 feet, 8 inches.

Malleable iron derrick head sheave, 8 inches in diameter. Mild steel derrick head plates, 3/16x12x13 1/2 inches. Middle leg section of Shelby tube: Upper section, 3 1/2x.134 inches, 11 feet 7 inches long; middle section, 4x.134 inches, 96 inches long. Side legs are of Shelby tube; 3 1/2x.134 inches, 17 feet 10 1/2 inches long. Mild steel head bolt, 1 1/4x8 3/4 inches. Mild steel connecting pins, 1x5 1/4 inches. Anchor pin, 3/8-inch bolt stock, 7 1/2 inches long, 1 1/8-inch head. Foot plate is a 7-inch, 15-pound I beam, 24 inches long.

Prices upon Request

Graybar XLM Derricks

Extra Light—Middle Type

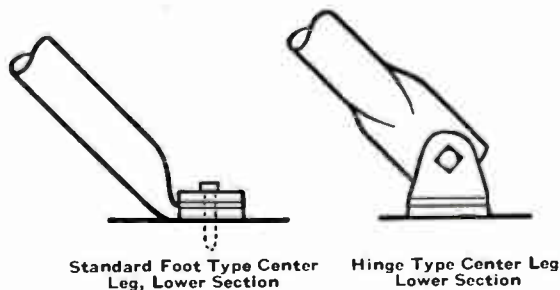


This is the lightest derrick in the Graybar line and is ideal for the use of smaller municipalities who operate power companies. It is also ideal for the smaller independent telephone companies whose lines do not run cross country and where smaller poles are the rule rather than the exception.

Can be used with smaller and lighter trucks equipped with either powered or hand winches. It is built to handle the average 35-foot pole with ample reserve for the safety of the workers and equipment.

Specifications

7½ inches long, 1⅛-inch head. Foot plate is a 7-inch, 15-pound I beam, 24 inches long.
Weight, 325 pounds.



Lifting Capacities

Ground Position (Center Leg Fully Telescoped)	..... pounds	10,000
Ground Position (Center Leg Fully Extended)	..... pounds	6,000
Truck Position	..... pounds	2,500

Notes

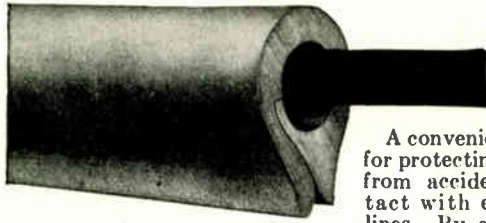
This derrick is also available with telescoping side legs at a slight additional charge. This feature was developed to allow the derrick to be transported more compactly and to allow free opening of both cab doors when the derrick is in a carrying position.

The capacity of this derrick is the same as for the standard type derrick. The side legs are made in two sections; upper section 7 feet 9 inches, lower section 9 feet 7 inches.

Cast steel derrick head sheave, 8 inches in diameter. Mild steel derrick head plates, ¾x12x13½ inches. Middle leg section of Shelby tube: Upper section, 3½x.134 inches, 11 feet long; middle section, 4x.134 inches, 5 feet 7 inches long; lower section, 2½x¾ inches, 6 feet 9 inches long. Side legs are of Shelby tube; 2½x.134 inches, 15 feet 3½ inches long. Mild steel head bolt, 1¼x8¼ inches. Mild steel connecting pin, 1x5¼ inches. Anchor pin is ⅞-inch bolt stock,

Prices upon Request

Salisbury Line Hose



A convenient device for protecting linemen from accidental contact with energized lines. By completely surrounding the wire with a substantial wall of voltage-resisting rubber more than ample insulation is provided.

The self-locking lip prevents the hose from being accidentally detached. Short bends can be made without exposing the conductor it covers.

Furnished in 1/4, 3/8, 5/8, 1, 1 1/4 and 1 1/2-inch sizes, inside diameter; in standard lengths of 3, 4 1/2 and 6-foot pieces.

Salisbury Line Hose Connector Ends



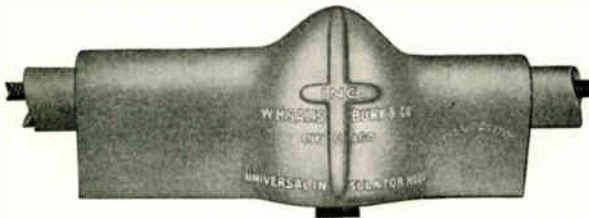
Standard line hose with the additional feature of an integral built-on connector end which overlaps and securely holds the end of an adjoining piece of hose when longer spans of line are to be covered, is increased in length by eight inches.

The connector end is also useful in covering connectors, bulky tap joints, and leads on stud type transformers.

The connector end does not interfere with the application of the hose in normal uses and it is recommended that a portion of the hose on each truck be of this connector end type.

Furnished in 5/8, 1, 1 1/4, and 1 1/2-inch inside diameters and in standard hose lengths of 3, 4 1/2, and 6-foot pieces.

**Salisbury Rubber Insulator Hoods
Universal Type**



Used in conjunction with line hose to cover tie-wires and conductors as they pass the insulators. Completely covers this point of hazard in a close fitting and positive manner. Can be used on double arm as well as single arm construction. The extending arms of the hood overlap the ends of the line hose.

Compounded to secure high insulating qualities over a long period of time. Vulcanized in steel molds while under great pressure, in heavy duty presses; retains its shape and flexibility. Thick walls of solid rubber give it ability to stand up under severe conditions of use.

Requires no attachments to hold it in place. Securely locks itself to the under side of the insulator and cannot open, turn, slide or become accidentally dislodged.

Solid rubber flanges extending inwardly from under sides of the body portion serve to grip the under side of the insulators. Exterior ribs are placed to reinforce the side walls and to increase the grip.

Inside dimensions arranged so hood properly fits all popular types of pin insulators in distribution service.

Length, 14 3/4 inches. Height, 6 1/4 inches.

Weight, 4 pounds. Packed one to a carton.

Telephone and telegraph companies use a special hood shaped to fit telephone style insulators. As it is used on single arm poles only both extending arms of hood are of the same diameter and will snugly grip the 1/4-inch size line hose. In ordering, specify Telephone Type.

Salisbury Snap-On Blankets and Jackets



Snap-On Jacket is especially useful in covering dead ends, pot heads, cutouts, arrestors, and like equipment which does not require the full size blanket.

Equipped with eight reinforced eyelet holes along each side and twelve hard rubber buttons. When folded over or wrapped around the apparatus to be covered, the edges are held closed by snapping the small heads of the buttons through the opposite eyelets. This self-contained method of fastening has been thoroughly tried and found practical.

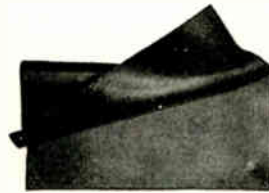
Guaranteed to resist 20,000 volts on acceptance tests for 3 minutes.

Size blanket, 36x36x1/8 inches.

Size jacket, 22x22x1/8 inches.

Salisbury Rubber Protective Blankets

All Rubber—Black



Will fold, wrap or hang suspended in any position to provide an insulating barrier between electrical workers and hazards adjacent to their working position.

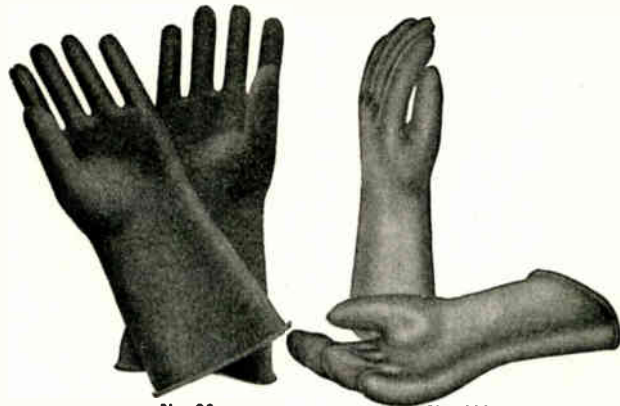
Bead molded on all four sides to prevent tearing.

Guaranteed on acceptance tests to resist 20,000 volts for 3 minutes.

Plain		With Eyelets	
No.	Size, Inches	No.	Size, Inches
300	36x36x1/8	300-E	36x36x1/8
400	27x36x1/8	400-E	27x36x1/8

Prices upon application.

Salisbury Steam Cured Linemen's Rubber Gloves



No. 90
Straight Finger Style

No. 100
Curved Finger Style

Qualities of high insulation, low leakage, strength, flexibility and long life are evenly balanced. Each of these essentials is raised to the highest possible value without lowering the standard of some other property.

All gloves are seamless, form fitting, accurate to size, with finger lengths and widths adjusted to best meet average conditions.

Both Nos. 90 and 100 are furnished in 10,000, 15,000, and 20,000-volt ratings. Class B, 10,000-volt, 14-inch gloves are standard; Class A, 10,000-volt, heavier weight gloves are available.

Guaranteed to pass the most thorough inspection and to meet the A.S.T.M. specifications. Replacement made or return accepted of any which fail under initial tests at their rated voltage or otherwise prove unsatisfactory at time of delivery.

Furnished in sizes, 9, 9 1/2, 10, 10 1/2, 11, and 12.

Packed 1 pair to a box.

Salisbury Rubbercuff Protector Gloves

Gives complete protection with its rubbercuff protector and not only gives greater safety but allows a substantial reduction in glove expense.

Most rubber gloves are destroyed through reason of snags occurring on the upper ends of the gauntlets. Ordinary protector gloves made of leather cannot extend to the rim of the rubber gloves because leather is a conductor of electrical current.

Cuff is made from light but strong fabric reinforced, voltage resisting rubber. Tests prove that current creepage over it is no greater than over gauntlets themselves. Hand part is made from high quality leather.

For Use with Straight Finger Rubber Gloves

- No. 26, Sizes 9, 9½, and 10.....
- No. 28, Sizes 10½, 11, and 12.....

For Use with Curved Finger Rubber Gloves

- No. 126, Sizes 9, 9½, and 10.....
- No. 128, Sizes 10½, 11, and 12.....

Salisbury Linemen's Protector Gloves

Full Gauntlet, 4-Inch Style

Designed to wear over Linemen's Rubber Gloves to protect them from snagging, tearing or abrasive wear. Made expressly for this work and should not be confused with the ordinary work gloves.

Made of specially tanned Grade A buffed horsehide, maroon color, and from selected weights.

Remains soft and pliable under all conditions and will not become

slippery when wet. Resists wire puncture to a great degree.

For Use With Straight Finger Rubber Gloves

- | | | | | |
|---------------|-----------|-----------|-------------|-------------|
| No..... | 18-C | 18 | 20-C | 20 |
| Style Back... | Closed | Open | Closed | Open |
| Covers Rubber | | | | |
| Glove Sizes. | 9, 9½, 10 | 9, 9½, 10 | 10½, 11, 12 | 10½, 11, 12 |

For Use with Curved Finger Rubber Gloves

- | | | | | |
|---------------|-----------|-----------|-------------|-------------|
| No..... | 118-C | 118 | 120-C | 120 |
| Style Back... | Closed | Open | Closed | Open |
| Covers Rubber | | | | |
| Glove Sizes. | 9, 9½, 10 | 9, 9½, 10 | 10½, 11, 12 | 10½, 11, 12 |

Salisbury Linemen's Glove Bags

Used to protect linemen's rubber gloves when not in use. Made of heavy, tightly woven, waterproof 42-ounce white duck with non-raveling edges.

Special features: Snap hook and D ring for attaching to belt; double head reinforcing rivets; sewed with linen thread, lock stitched; gusset sides and bottom, carrier flat when empty; flat lying cover; strong snap fastener; waterproof; ventilating eyelets in bottom gusset.

- | | | |
|-------------------|----|----|
| No..... | 35 | 25 |
| Length.....inches | 15 | 9 |
| Width.....inches | 8 | 6 |

Salisbury Protective Rubber Sleeves

Formed and Vulcanized in Chromium Plated Molds
Full Length

Used to protect the arms and shoulders from accidental contact with energized equipment. Fastened across the shoulders by an adjustable rubber strap and rubber buttons. New chest strap feature prevents top of sleeves from sliding back and is so positioned that it does not interfere in any way.

Guaranteed to resist 10,000 volts for three minutes on initial tests. Chocolate color.

No. 40-R, standard size, is usually found suitable. No. 50-L, large size, is for men of large build or for use over heavy clothing.

Packed 1 pair to a carton.



No.....	40-R	50-L
Outside Arm Length.....inches	25	27
Inside Arm Length.....inches	17½	18
Wrist Opening.....inches	5½	6
Arm Opening.....inches	11	12
Shipping Weight.....pounds	3	3¾

Elbow Length

Fits fairly close around forearm but permits free arm movement. Very flexible. Molded in one seamless piece.

Combination of short sleeves with standard length gloves is economical, for if either are damaged it is only necessary to replace the unserviceable glove or sleeve.

Guaranteed to resist application of 10,000 volts for three minutes between water electrodes. Chocolate color.

Packed 1 pair to a carton.

No.....	60-R	70-L
Outside Arm Length.....inches	16¼	16¼
Inside Arm Length.....inches	13½	13½
Wrist Opening.....inches	4¼	4¾
Arm Opening.....inches	6¾	7
Shipping Weight.....pounds	1½	2

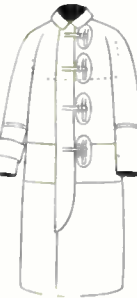
Salisbury Static-Resisting Line Coats

The special construction of this coat retards static tingling at the neck or wrists when the garment is used during wet weather on work that is adjacent to energized conductors.

Special features: Inside double back; special rubber fasteners; reinforced at belt; all seams sewed and cemented; insulating skirt collar; roomy raglan shoulders; insulating storm cuffs; storm fly front.

Guaranteed to be free from all defects in material or workmanship.

The all rubber collar is standard. Corduroy faced collar can be furnished if desired.



Furnished in sizes 36 to 46 inclusive. Length, 47 inches.

Packed one to a carton.

Salisbury Electric All-Rubber Coats

Made of strong durable material, coated on the outside surface with high grade rubber and a frictioned coating on the inside. No metal is used in its construction.

The inner cuff of the double-storm cuff is made of pure gum rubber. The collar is of standard lay-down type. Reinforced at hips to protect coat from tool belt abrasion. Has raglan shoulders, all rubber fasteners and storm fly front.

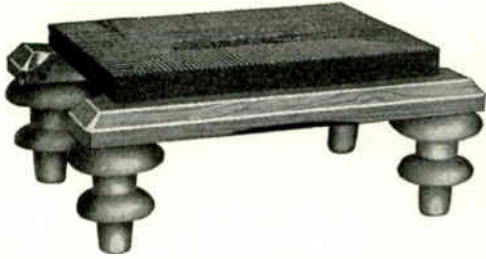
Length, 46 inches.

Furnished in sizes 36 to 46.

Prices upon application.



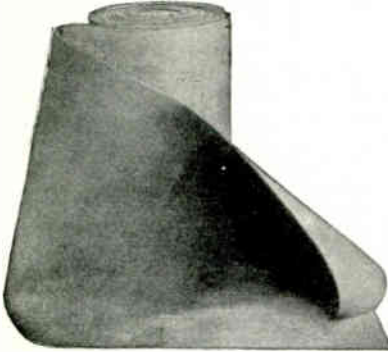
Salisbury Insulating Stools



A low platform on which workmen can stand while performing hazardous tasks in sub-stations, power plants, underground vaults, etc. Has corrugated rubber top and double petticoat rubber insulators for legs. The stool is non-tipping and non-slipping. Dry test flashover, 82,000 volts. Wet test flashover, 19,000 volts.

Size, 18x12 inches, 8 inches high. Weight, 22 pounds.

Salisbury Switchboard Rubber Matting



A non-slip corrugated surface matting of high dielectric strength and long aging qualities.

Meets requirements of all standard specifications.

Guaranteed to resist 50000 volts for 3 minutes on acceptance tests.

Furnished in 1/4-inch thickness; 24, 30, 36 and 48-inch widths; lengths up to 75 feet. Other

widths and thicknesses can be furnished.

Salisbury Cable Bandages



For general use as temporary insulation. Made of highest grade pure gum rubber. Unusually strong, very flexible, with excellent ageing qualities. Acceptance tests prove that a single thickness can withstand 10,000 volts.

In rolls 14 feet long, 3 or 4 inches wide, 1/2 inch thick.

Net weight per 3-inch roll, 10 ounces; 4-inch, 12 ounces.

Salisbury Non-Spillable P.B. Paint Pots



This is a rubber container for carrying insulating and weather-proofing compounds that do not have an oil base.

Provides a safe and convenient means to carry both compound and brush, eliminating use of metal containers, glass bottles, and other makeshift devices.

Flange extends inward at junction of the neck preventing contents from spilling or splashing out during rough handling. Equipped with tapered cork through which a rubber-set brush is securely inserted.

Single compartment pot is for insulating only; double compartment pot is made with an extra receptacle to hold soldering paste.

No. 1030-CR Duff-Norton Automatic Lowering Cable Reel Jacks With T Base—10-Ton Capacity



For heavy cable reels 36 to 84 inches in diameter, and for outside work where uneven ground conditions are encountered.

Attached to a T-frame base which has been sectioned to prevent warping. Top hook is for 3-inch diameter spindles, the two lower hooks for 2 1/2-inch diameter spindles.

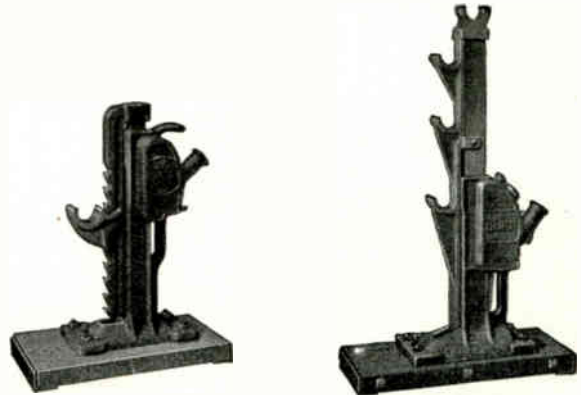
Height 30 inches. Raise, 14 inches.

Weight, 104 pounds.

No. 1030-CR...each \$55.00

Duff-Norton Genuine Barrett Cable Reel Jacks

Single Acting—5, 10 and 15 Tons Capacity



No. 521-CR

No. 539-CR

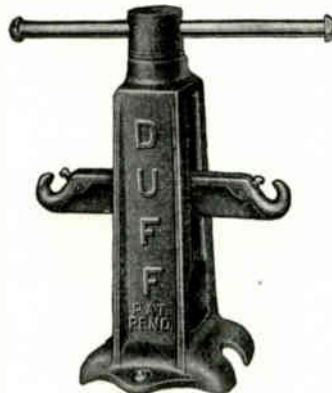
THE No. 521-CR JACK is adapted for warehouse use, handling cable, leather belting, etc. Equipped with Duff Adjustable Cable Reel Lift, incorporating a steel hook which can be placed at any point on lifting rack, enabling jack to pick up reels of different diameters at any height.

Nos. 518-CR AND 539-CR JACKS are recommended for general outdoor service for cable reels up to 90 inches in diameter. Equipped with extra long lifting racks, having hooks placed at various heights to make handling of reels of different sizes rapid and convenient.

Each jack furnished with oak base with detachable clamps, and 4-foot steel operating lever.

No.	Each	Capacity Tons	Height Inches	Raise Inches	Weight Pounds
521-CR	\$30.00	5	21	14	68
518-CR	\$50.00	10	38	12	108
539-CR	\$65.00	15	39	11	138

No. 565 Duff-Norton Pole Snubbing Jacks



A quick and efficient method of snubbing telegraph and telephone poles.

With this jack poles can be tied quickly, tighter, neater, and easier than by any other method.

It is easily attached and leaves operators hands free to place wire in position.

Height, 13 1/2 inches. Pulling range, 6 1/4 in.

Weight, 20 pounds.

No. 565...each \$16.00

Duff-Norton Screw Type Cable Reel Jacks

5-Ton Capacity



Used by utility companies. Reliable and efficient. To operate, lift the curved cap to the reel spindle, spin the 3-way nut down to the frame, and insert a 3/4-inch steel bar in the 3-way nut and turn.

Lifting hook will accommodate up to 2 1/4-inch diameter spindles.

No.....	520-CR	530-CR
Each.....	\$18.00	24.00
For Reels, Diameter.....	42 to 60	60 to 90
Closed Height.....	20	30
Raise.....	11 1/2	16 1/2
Weight.....	51	89

No. 46-CR Duff-Norton Cable Reel Jacks

With A Frame



For use around warehouses and general telephone and cable construction. Especially suited for field work where uneven ground conditions are encountered.

Can handle all sizes of cable drums up to 90 inches in diameter. Sturdily constructed of channel sections and quickly adjustable for handling smallest to largest size reels.

Loads may be lifted at three different points. Furnished complete with spindles.

Closed height, 29 inches; open, 48 inches.

Weight, 140 pounds.

No. 46-CR.....per unit \$75.00

No. 529 Duff-Norton Small Pole Pulling Jacks

Capacity, 5 Tons

Designed especially for lifting or moving small poles, such as are found on rural lines, quickly and easily. Has top lift and chain lift.

Poles are handled by means of the sling, which consists of a forged steel chain and hook. Chain fits into slot in top of jack.

Height, 28 inches. Raise, 18 inches.

Weight, 96 pounds.

With Chain.....each \$28.00
Without Chain.....each 25.00



No. 500 Duff-Norton Genuine Barrett Pole Jacks

Capacity, 15 Tons

For lifting, straightening or moving poles of all kinds. Eliminates the necessity of digging around stumps before moving or straightening.

Height, 37 1/2 inches.

Raise, 23 inches.

Furnished complete with operating lever, chain and l-beam base.

Weight, 116 pounds.

With Chain.....each \$70.00
Without Chain.....each 60.00



Duff-Norton Genuine Barrett General Purpose Jacks

For rough and ready service. Hinge or pivotal base permits jack to be operated at any angle for shoving, pushing, etc.

Working parts fully enclosed and protected from dirt. Spring mechanism is self-contained.

Steel chain fits into slots on top of jack. Furnished with 4-foot steel operating lever.

No.....	519-H	1523
With Chain.....each	\$25.00	\$48.00
Without Chain.....ea.	22.00	38.00
Capacity.....	5 tons	15
Height.....	19 inches	23
Raise.....	9 1/2 inches	12 1/2
Weight.....	49 pounds	67



No. 1523

Duff-Norton Genuine Barrett Automatic Lowering Jacks

With or Without Trip—5-Ton Capacity



With Trip Flat Top—Single Socket



Without Trip Curved Top—Double Socket

The Duff-Norton 5-Ton Automatic Lowering Jack is ideal for modern coal mining operations. The inset cover is designed as an integral part of jack, but can be removed conveniently and easily. Cover eliminates costly part replacements and securely protects compact single unit mechanism.

Special oil-tempered cadmium-plated springs insure long life and efficiency. The convenient pistol grip handle facilitates carrying, and assures more accurate spotting.

Available with curved top or flat top in double and single socket levers as preferred. Furnished with round socket lever and 3-foot steel operating bar. When ordering, specify whether jack is desired with or without trip; also kind of top and socket.

NUMBER		Each	Capacity Tons	Height Inches	Raise Inches	Weight Pounds
Trip Type	Without Trip					
514MT	514M	\$15.00	5	14	7 1/2	28
516MT	516M	16.00	5	16	9 1/2	33
521MT	521M	18.00	5	21	14 1/2	40

Duff-Norton Genuine Barrett Automatic Lowering Jacks



No. 1022



No. 1528

These jacks are widely used by industrial concerns, telephone and telegraph companies, street railway companies, steam railroads, mines, mills, contractors, truckmen, etc.

Automatic lowering jacks are ratcheted up or down, notch by notch, the direction being reversed by shifting the locking device at the side of the frame.

Nos. 1017 and 1020 furnished with single round sockets and 4-foot steel operating lever. No. 1022 is regularly furnished with double socket.

Nos. 1522, 1528, 2028 furnished with single socket and steel operating lever, but double socket can be furnished if desired.

No.	1017	1020	1022	1522	1528	2028
Each	\$22.00	24.00	25.00	38.00	40.00	45.00
Capacity tons..	10	10	10	15	15	20
Height.....in.	17	20	22	22	28	28
Raise.....in.	9	11½	12	11½	18	18
Weight.....lb.	40	50	60	78	91	94

**Duff-Norton Genuine Barrett Jacks
Trip and Automatic Lowering
Capacity, 15 Tons—Double Acting**



No. 1-D



No. 110

No. 1-D is a trip jack with hook trip; action is quick and positive.

Nos. 1-A and 6-A have the regular trip; a simple device which assures safe, quick, easy tripping.

No. 110 is a trip and automatic lowering jack. Can lift loads, lower loads gradually, or trip or drop loads from any elevation in its range.

Furnished with square socket lever to fit lining bar. Add \$1.00 to list price if round socket lever and wood handle are desired.

No.	*1-D	*1-A	*6-A	†110
Each	\$21.00	21.00	27.00	21.00
Height.....inches	22	22	28	22
Raise.....inches	13	13	19	13
Weight.....pounds	60	58	73	59

*Raises on upward or downward stroke.

†Fitted with automatic lowering device.

**Duff-Norton Low Height Journal Jacks
Screw Type—Ball-Bearing**



Has one-piece shell, cold-drawn seamless steel lifting standard, high carbon heat treated lifting screw, phosphor bronze nut, high manganese chrome steel heat treated gears, and pinion shank phosphor bronze bushed. No bolts or nuts to come loose.

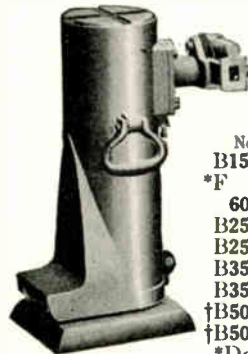
Furnished with 3-foot lever.
*Cone bearing.

No.	111-C	2509-C-1	2510-C-1	3510-C-1	5010-C	*1007
Each	\$25.00	36.00	36.00	55.00	95.00	23.00
Cap. tons	15	25	25	35	50	10
Ht. in.	10	9	10	10	10	7
Raise in.	5	4½	5½	5½	4½	2½
Wt. lb.	29	35	36	50	61	22

Duff-Norton Ball-Bearing Bridge and Wrecking Jacks

Foot Lift Screw Type

For heavy duty of any character, such as bridge work, handling of heavy machinery by contractors for construction work, etc. With carrying handles.



No.	Each	Cap. Tons	Ht. In.	Raise In.	Diam. Base In.	Wt. Lb.
B1522	\$60.00	15	22	10	7½ x 7½	105
*F 60	70.00	15	24	12	8 x 9	128
B2522	90.00	25	22	10¼	8 x 9¾	140
B2526	96.00	25	26	14¾	8 x 9¾	157
B3522	130.00	35	22	10¾	9 x 10½	171
B3526	138.00	35	26	14	9 x 10½	201
†B5024	150.00	50	24	9¾	14	266
†B5027	150.00	50	27	13¾	14	298

*Double speed. †Large head.

No. 725 Duff-Norton Pipe Pulling and Pushing Jacks



Designed for pulling or pushing pipe through ground without changing the position of the jack. Used by contractors when laying pipe under streets, lawns or railroad right-of-way.

Capable of forcing pipe up to six inches in diameter.

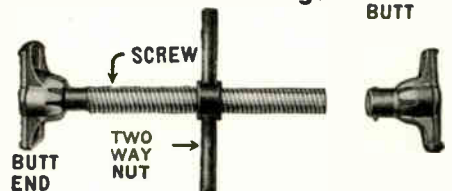
Length, 6 feet. Travel, 36 inches.

Furnished with coupling for rack connection and pilots for end of 2-inch pipe.

Weight, 395 pounds.

No. 725.....each \$200.00

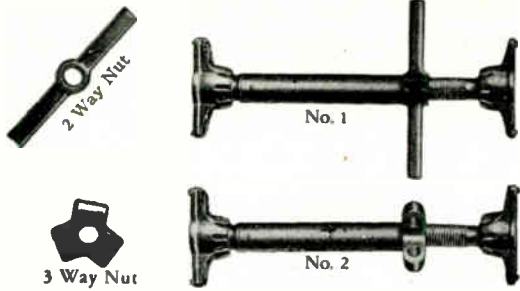
Duff-Norton Extensible Steel Trench Brace Fittings



Without pipe. Adding pipe makes brace complete.

No.	Complete per Doz.	Socket Butts per Doz.	Diam. Screw Inches	Length Screw Inches	Safe Ext. of Screw, In.	Wt. per Doz. Lb.
C-14	\$40.00	\$10.00	1½	10	6	168
C-15	40.00	10.00	1½	12	7	174
C-16	42.00	10.00	1½	14	8	180
C-17	44.00	10.00	1½	16	9	186
C-18	46.00	10.00	1½	18	10	192
C-19	90.00	24.00	2	18	10	438

Duff-Norton Extensible Steel Trench Braces

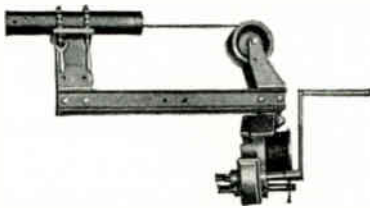


Regularly furnished with 2-way lever nut (No. 1) but can be furnished with 3-way nut (No. 2) if desired. The two-way lever nut provides great strength and safeguards against bending or breaking. The 3-way nut is advantageous when working in close quarters.

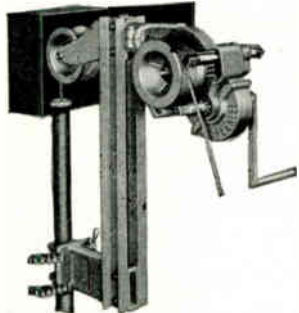
Ball and socket joint at each end permits easy adjustment to any angle. Easily adapted to any width trench by using longer or shorter lengths of pipe.

No.	Per Dozen	Pipe and Screw Diam. Inches	Length of Brace Closed Inches	Length of Screw Inches	Safe Extension of Screw Inches	Weight Pounds per Dozen
1001	\$46.00	1 1/2	16	10	6	180
1002	46.00	1 1/2	18	12	7	200
1003	48.00	1 1/2	21	14	8	212
1004	48.00	1 1/2	24	14	8	221
1005	52.00	1 1/2	27	16	9	240
1006	52.00	1 1/2	30	16	9	247
1007	54.00	1 1/2	36	18	10	273
1008	56.00	1 1/2	42	18	10	300
1009	58.00	1 1/2	48	18	10	325
1011	102.00	2	36	18	10	538
1012	104.00	2	42	18	10	564
1013	106.00	2	48	18	10	580
1014	108.00	2	54	18	10	608
1015	110.00	2	60	18	10	630

No. 765 Greenlee Cable Pullers



Cable Puller Set Up For Pulling From the End of a Horizontal Section of Conduit



Cable Puller Set Up for Pulling Into a Box from a Vertical Section of Conduit

This puller has been designed to exert a maximum pull of 7500 pounds. Has two speeds.

The clamping device consists of a bracket with two lengths of pipe-wrench chain, which are tightened by two clamp nuts with attached wrenches. It will accommodate conduit sizes from 2 to 5-inch, and clamping is done direct to the conduit through which cable is to be pulled. This provides for pulling line in with the conduit, preventing the loosening of hangers.

Two cranks are supplied, but if preferred, ratchet wrenches can be used. A portable electric power unit can also be used for driving the machine.

Readily portable; net weight only 170 pounds.

Cable is not furnished with the machine. The recommendation is 3/8-inch 6-19 strand, having a breaking strength of 11,000 pounds or more as being satisfactory.

Shipping weight, 225 pounds.

No. 765 Cable Puller with Two Cranks, but Without Cable.....each \$160.00

No. 790 Greenlee Hydraulic Pipe Pushers



For underground installation in gas, electric, water-works, telephone and other fields.

By utilizing hydraulic pressure for the power, it has been possible to make this tool very compact. It is readily portable, and one man can easily exert the maximum pressure on the pipe clamp. There are 8 speeds available for varying soil conditions,

and these give pressures ranging from 6500 to 40000 pounds.

The power unit operates on a notched steel base, so that the pipe clamp is changed only every 4 to 7 feet, depending on length of base used. When the pipe has been pushed forward 4 inches a pawl on the body drops into a notch to hold it while the pressure is released by depressing the handles. Springs within the body rapidly return the pistons until their pawl drops into a new notch. This is repeated until the end of the base is reached, when the machine is pushed to the opposite end and the pipe clamp is reset.

Capacity 1 1/4 to 4-inch pipe, inclusive. Net weight, pusher only, 132 pounds; shipping weight, with 8 1/2-foot base and complete set of clamps, 480 pounds.

No. 790 Power Unit Only.....each \$185.00

Steel Bases, with Pipe Support and Backing Plate

Length.....feet	5 1/2	6 1/2	7 1/2	8 1/2
Each.....	\$30.00	35.00	40.00	45.00
Length Push.....feet	4	5	6	7

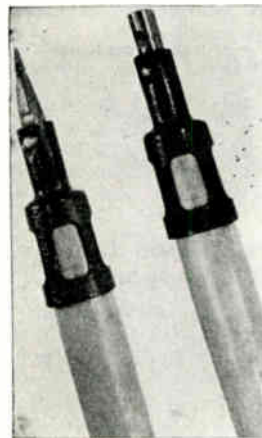
Quick Acting Clamps

Pipe Size...in.	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Each.....	\$10.00	10.75	11.50	12.75	15.00	17.50	22.50

Chance Reversible Spiral Point Safety Pike Poles

This pole has a removable point that may be inserted into the ferrule, point first, for carrying on the truck. This eliminates the hazard of sharp projections. The gimlet or spiral point holds without slipping. When point becomes worn, replace point only.

Has steel point, malleable ferrule, and Douglas fir pole.



No.	Diam. In.	Lgth. Ft.	Wt. Lb.
210P	2	10	8
212P	2	12	9
214P	2	14	11
216P	2	16	13
218P	2	18	15
220P	2	20	17

A.T. & T. Pattern

No.	Diam. In.	Lgth. Ft.	Wt. Lb.
212HP	2 1/2	12	12
214HP	2 1/2	14	14
216HP	2 1/2	16	16
218HP	2 1/2	18	18
220HP	2 1/2	20	20

No. 1-WE Bartlett Pike Pole Attachments



Used with Combination Pruner and Saw.

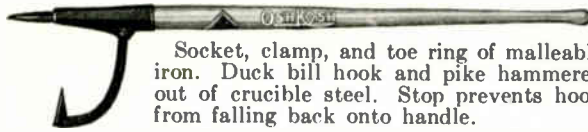
Drop forged, hardened point.

Fits extra sections. Self-locking sleeve securely holds pike in place when testing poles. With round ferrule.

No. P156-2 rectangular ferrule supplied upon request.

No. 1-WE Pike Attachment.....each \$2.00

Oshkosh Malleable Socket Peavies



Socket, clamp, and toe ring of malleable iron. Duck bill hook and pike hammered out of crucible steel. Stop prevents hook from falling back onto handle.

With Hard Rock Maple Handles

No.	Each	HANDLE		Wt. Lb.	Extra Handles		
		Diam. In.	Lgth. Ft.		No.	Each	Wt. Lb.
121	\$4.20	2 1/2	4	7	541	\$1.32	3
122	4.28	2 1/4	4 1/2	7	542	1.39	3
124	4.34	2 1/2	4	9	544	1.39	3
125	4.56	2 1/2	4 1/2	9	545	1.49	4
With Second Growth Hickory Handles							
134	\$4.78	2 1/4	4	8	572	\$1.49	3
135	5.14	2 1/4	4 1/2	8	573	1.60	3
137	4.93	2 1/2	4	9	575	1.64	4
138	5.48	2 1/2	4 1/2	10	576	1.83	4

Oshkosh Cant Hooks



Socket, clamp, and toe ring of malleable iron. Duck bill hook hammered out of crucible steel. Stop prevents hook from falling back onto handle and injuring fingers.

With Hard Rock Maple Handles

No.	Each	HANDLE		Wt. Lb.	Extra Handles		
		Diam. In.	Lgth. Ft.		No.	Each	Wt. Lb.
188A	\$3.32	2 1/4	4	7	541	\$1.32	3
189A	3.52	2 1/2	4 1/2	8	542	1.39	3
188	3.40	2 1/2	4	8	544	1.39	3
189	3.58	2 1/2	4 1/2	8	545	1.49	4
With Second Growth Hickory Handles							
199A	\$3.82	2 1/4	4	7	572	\$1.49	3
200A	3.93	2 1/4	4 1/2	8	573	1.60	3
199	4.07	2 1/2	4	8	575	1.64	4
200	4.34	2 1/2	4 1/2	9	576	1.83	4

Oshkosh Carrying Hooks
Regular Pattern



For carrying poles. Rock maple handle; malleable clasp. Crucible steel hooks attached to handle with malleable swivel.

No.	Each	HANDLE		Wt. Lb.	Extra Handles		
		Diam. In.	Lgth. Ft.		No.	Each	Wt. Lb.
295	\$3.86	2 1/2	4	7	593	\$1.29	3
296	3.98	2 1/2	4 1/2	8	594	1.39	4
297	4.09	2 1/2	5	8	595	1.60	4
298	6.70	3	5	12	963	2.96	5
299	6.93	3	6	13	964	3.58	6
300	7.39	3	7	14	965	4.51	7

Oshkosh Wood Jenney Pole Supports

Made of clear, straight-grained fir. Strong and stiff when set up; easily collapsible to a small size for carrying in trucks.

Center or pivot holes for bolt in cross pieces are reinforced with steel bushings. Steel pikes fastened to bottom of each leg stop any tendency to slide. Cross brace is placed high to prevent interference with walking.

Thickness, 1 3/4 inches; width, 3 1/2 inches.

No.	842	843	844
Each	\$12.83	14.57	15.75
Size.....feet	6	7	8
Weight...pounds	25	30	35



Oshkosh Pike Poles



Handle is of old growth yellow Washington fir; only straight, close-grained fir is used.

Pike is of special steel made of one piece with upset face, which takes end thrust and distributes it over the entire end of the handle. Pike is set in oil and a rivet runs through malleable iron ferrule, handle, and pike to further secure them. Pike projects 4 inches.

Standard Light Pattern

No.	Each	HANDLE		Wt. Lb.	Extra Handles		
		Diam. In.	Lgth. Ft.		No.	Each	Wt. Lb.
805	\$3.32	2	10	6	970	\$2.60	6
806	3.62	2	12	8	971	2.82	7
807	4.09	2	14	10	972	3.22	9
808	5.25	2	16	11	973	4.39	11

A. T. & T. Pattern

817	\$4.21	*2 1/2	10	12	...	...
818	4.50	*2 1/2	12	13	982	\$4.45 12
819	5.59	*2 1/2	14	14	983	4.95 13
820	6.46	*2 1/2	16	15	984	5.44 14
821	7.54	*2 1/2	18	18	985	6.27 16
822	8.40	*2 1/2	20	20	986	6.93 19

*Diameter at center; tapers to 2 inches at both ends.

No. 10 Oshkosh Pike Pole Guards



For guarding the hazardous point on pike poles.

The guard works easily and fastens securely in either the guarded or open position. When in the unguarded position, the guard is completely out of the way, snugly fitted around the pole. When in the guarded position, it automatically locks in place and provides complete protection from the pike point.

This guard will fit either the 2-inch or 2 1/2-inch pike poles.

Shipping weight, 3/4 pound.

No. 10.....each \$1.60

Oshkosh Special Pike Pole Coating

Oshkosh Pike Poles finished with this specially developed coating prevent loss of time caused by splinters and splinters.

It gives a smooth, hard, transparent coating.

This coating keeps the grain from raising.

It is a non-conductor of electricity.

Can be applied at a slight additional charge.

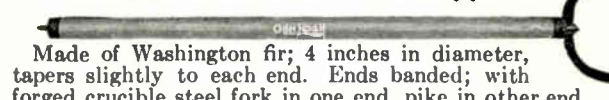
No. 740 Oshkosh Fir Deadman Wood Pole Supports



Of clear, straight grained fir. Measures 3x3 inches square, 8 1/2 feet over all. Steel fork has three prongs.

No. 740, Weight, 40 Pounds.....each \$14.00

Oshkosh Wood Mule Pole Supports



Made of Washington fir; 4 inches in diameter, tapers slightly to each end. Ends banded; with forged crucible steel fork in one end, pike in other end.

No.	845	846	847
Each	\$12.75	14.04	15.53
Size.....feet	6	7	8
Weight.....pounds	23	26	29

No. 848 Oshkosh Standard Deadman Wood Pole Supports

A.T.&T. Pattern



Made of rock maple with rounded edges. Each end is banded. Steel fork is fastened to upper end; pike in lower end. Thickness, 2 inches; width, 4 inches.

No. 848, Size 8 Feet, Weight 29 Pounds.....each \$16.62

Oshkosh Tamping Bars



Handle is made of hard rock maple. The tamping head is faced with an iron shoe, and measures 1 3/4 x 4 inches.

No.	854	855	856
Each	\$4.39	5.01	5.67
Length	7	8	9
Weight	13	14	16

Oshkosh Tamping Bars With Extra Heavy Iron Shoe



Made with hard rock maple handles with 1 1/4 x 1/2-inch steel shoe on tamping face. Tamping face is 1 1/4 inches wide and 3 1/2 inches long.

No.	1054	1055	1056
Each	\$4.79	5.34	6.10
Length	7	8	9
Weight	13	15	17

No. 1044 Oshkosh Electric Tamping Bars



Made of steel tubing with malleable iron tampers of different size on each end.
Length, 8 feet. Weight, 15 pounds.
No. 1044.....each \$4.86

No. 853 Oshkosh Loys or Slicks



The handle is of 2-inch selected maple and the blade is of tool steel 4 x 1/2 inches, burned onto the handle and held by two large rivets.
Length, 8 feet. Weight, 18 pounds.
No. 853.....each \$8.74

Oshkosh Crow and Digging Bars



Made of special octagon crucible steel. Has 2-inch chisel on one end, pointed on other end.

No.	1061	1062	1064	1065	1066
Each	\$5.56	5.89	6.10	6.94	7.97
Size	1"x7'	1"x8'	1 1/8"x7'	1 1/8"x8'	1 1/8"x9'
Weight... pounds	20	23	26	28	31

Oshkosh Tamping and Digging Bars



Made of special octagon crucible steel, tough and stiff. Has 2-inch chisel on one end, malleable iron tamper on other end.

No.	1071	1072	1074	1075
Each	\$5.78	6.17	6.46	7.48
Size	1"x7'	1"x8'	1 1/8"x7'	1 1/8"x8'
Weight... pounds	21	24	27	30

Oshkosh Plain Digging Bars



Made of special octagon crucible steel, tough and stiff. Has 2-inch chisel on one end.

No.	1081	1082	1084	1085
Each	\$5.05	5.79	5.86	6.84
Size	1"x7'	1"x8'	1 1/8"x7'	1 1/8"x8'
Weight... pounds	20	23	26	28

No. 852 Oshkosh Digging Spuds with Tamper



A light, evenly balanced digging tool. Handle is made of steel tubing with a tamping head of malleable iron, and the blade and socket are of one piece of forged high carbon steel. Blade measures 3 1/2 inches wide.
Length, 9 feet. Weight, 20 pounds.
No. 852.....each \$6.46

Oshkosh Straight Handle Shovels



Straight from end to end. Blade unpolished. Diameter handle, 1 1/8 inches.

With Carbon Steel Blade

No.	Each	Maple Handles			Extra Handles		
		Handle Feet	Strap In.	Wt. Lb.	No.	Each	Wt. Lb.
867	\$3.70	7	22	8	993	\$1.70	4
868	4.23	8	22	9	994	2.16	5
869	4.65	9	22	10	995	2.62	6
870	5.12	10	22	11	996	3.15	7
*Ash or Hickory Handles							
1032	\$3.83	7	22	8	1005	\$1.95	6
1033	4.30	8	22	9	1006	2.66	6
1034	4.80	9	22	10	1007	3.64	7
1035	5.34	10	22	11	1008	4.68	7

With Alloy Steel Blade

No.	Each	*Ash or Hickory Handles			No.	Each	Wt. Lb.
		Handle Feet	Strap In.	Wt. Lb.			
2032	\$4.36	7	22	8	2005	\$1.95	6
2033	4.89	8	22	9	2006	2.66	6
2034	5.48	9	22	10	2007	3.64	7
2035	6.09	10	22	11	2008	4.68	7

*For hickory handle, add letter H to No.

Oshkosh Crooked Handle Shovels



Handles are made of selected second growth Northern white ash, tough, strong Highland hickory, or hard rock maple. They are extra large, 1 1/8 inches in diameter.

With Carbon Steel Blade

Cat. No.	Each	Maple Handles			Extra Handles		
		Handle Feet	Strap Inches	Weight Pounds	Cat. No.	Each	Weight Pounds
874	\$3.70	7	22	8	1000B	\$2.90	4
875	4.23	8	22	9	1000	3.47	5
*Ash or Hickory Handles							
1040	\$3.83	7	22	8	1014	\$2.79	6
1041	4.30	8	22	9	1015	4.36	6
1042	4.80	9	22	10	1016	4.66	7
1043	5.34	10	22	11	1017	5.87	7

With Alloy Steel Blade

No.	Each	*Ash or Hickory Handles			No.	Each	Wt. Lb.
		Handle Feet	Strap Inches	Weight Pounds			
2040	\$4.36	7	22	8	2014	\$2.79	6
2041	4.89	8	22	9	2015	3.36	6
2042	5.48	9	22	10	2016	4.66	7
2043	6.09	10	22	11	2017	5.87	7

*For hickory handle, add letter H to Cat. No.

Oshkosh Short Handled Shovels



Used for starting and filling in holes.

With Carbon Steel Blade

The handle is made of Northern white ash, air seasoned.

No.	Each	Style of Blade	Wt. Lb.	Extra Handles		
				No.	Each	Length Feet Wt. Lb.
1090R	\$2.08	Round Point	5	1091	\$.65	4 1/2 2
1090S	2.08	Square Point	5	1091	.65	4 1/2 2

With Alloy Steel Blade

Equipped with fine quality ash handle.

2090R	\$2.38	Round Point	5	2091	\$.65	4 1/2 2
2090S	2.38	Square Point	5	2091	.65	4 1/2 2

Oshkosh Western Pattern Post Hole Spoons



**With Carbon Steel Blade
Maple Handles**

Cat. No.	Each	Handle Feet	Strap Inches	Weight Pounds	Extra Handles		
					Cat. No.	Each	Wt. Lbs.
859	\$3.70	7	22	10	993	\$1.70	4
860	4.23	8	22	10	994	2.16	5
861	4.65	9	22	11	995	2.62	6
862	5.12	10	22	11	996	3.15	7
*Ash or Hickory Handles							
1023	\$3.83	7	22	10	1005	\$1.95	6
1024	4.30	8	22	10	1006	2.66	6
1025	4.80	9	22	11	1007	3.64	7
1026	5.34	10	22	12	1008	4.68	7
1027	6.38	12	22	14	1009	5.91	8

**With Alloy Steel Blade
*Ash or Hickory Handles**

2023	\$4.36	7	22	10	2005	\$1.95	6
2024	4.89	8	22	10	2006	2.66	6
2025	5.48	9	22	11	2007	3.64	7
2026	6.09	10	22	12	2008	4.68	7
2027	7.30	12	22	14	2009	5.91	8

*For hickory handle, add letter H to Cat. No.

Oshkosh Eastern Pattern Post Hole Spoons



**With Carbon Steel Blade
Maple Handles**

Cat. No.	Each	Handle Feet	Strap Inches	Weight Pounds	Extra Handles		
					Cat. No.	Each	Wt. Lbs.
859E	\$3.70	7	22	10	993	\$1.70	4
860E	4.23	8	22	10	994	2.16	5
861E	4.65	9	22	11	995	2.62	6
862E	5.12	10	22	11	996	3.15	7
*Ash or Hickory Handles							
1023E	\$3.83	7	22	10	1005	\$1.95	6
1024E	4.30	8	22	10	1006	2.66	6
1025E	4.80	9	22	11	1007	3.64	7
1026E	5.34	10	22	12	1008	4.68	7
1027E	6.38	12	22	14	1009	5.91	8

**With Alloy Steel Blade
*Ash or Hickory Handles**

2023E	\$4.36	7	22	10	2005	\$1.95	6
2024E	4.89	8	22	10	2006	2.66	6
2025E	5.48	9	22	11	2007	3.64	7
2026E	6.09	10	22	12	2008	4.68	7
2027E	7.30	12	22	14	2009	5.91	8

*For hickory handle, add letter H to Cat. No.

Oshkosh D-Handled Shovels



Used for trench work.

With Carbon Steel Blade

The handle is second growth Northern white ash and is fitted with a pressed steel D top.

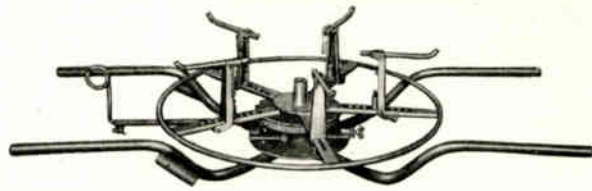
No.	Each	Style of Blade	Wt. Lb.	Extra Handles		
				No.	Each	Wt. Lb.
1092R	\$2.08	Round Point	4	1093	\$.65	2
1092S	2.08	Square Point	4	1093	.65	2

With Alloy Steel Blade

The handle is of clear straight grained ash, sharply bent, and fitted with a steel D top.

2092R	\$2.38	Round Point	4	2093	\$.65	2
2092S	2.38	Square Point	4	2093	.65	2

Oshkosh Combination Pay-Out and Take-Up Reels



As a Pay-Out Reel

A pay-out and take-up reel, all in one. It is lightweight, yet strong and durably constructed. The frame is made of tubing. Easy portability; the guide pins fold flat so that the whole reel is compact and easy to carry or slide in truck.

The guide pins are easily and quickly adjustable to take any size coil of wire from 13 to 27 inches inside diameter, to 34 inches outside diameter.

The automatic brake is another feature. As the wire is pulled the brake releases and the wire pays out freely. The instant tension is released, the brake sets and any possibility of back-lashing is prevented.

For converting into a take-up reel 2 braces are furnished which hold the reel in an upright position. Hand crank attached for ease in taking up wire.

The carrier frame is removable so that the reel can be bolted to a truck. A thumb screw terminal is provided for grounding the reel.

Length overall, 63 inches; width, 34 inches; height overall (guides up), 13 1/4 inches; height overall (guides down) 8 3/4 inches.

Weight, 75 pounds.

Prices upon application.

**No. 900 Oshkosh Barrow Reels
Heavy Western Union Type**



Used for heavy wire and heavy work.

Made of hardwood, braced and reinforced with steel. A wide bearing, together with a long pivot and sleeve, allow the reel to turn easily. Rests on strong, steel legs.

Reel pins adjustable for 12, 18, and 24-inch coils.

No. 900, Weight 80 Pounds.....each \$27.09
No. 901, Extra Pins, Weight 4 Pounds....per set of 4 3.00

No. 897 Oshkosh Folding Take-Up Reels



The reel part collapses and automatically throws off the coil at the same time and in an instant is ready for another coil. The frame, made of heavy hardwood, is strong and heavily reinforced throughout and folds up like a hinge.

Reel is made of malleable iron and steel.

It can be taken down in a moment merely pulling the pin out of the shaft, throwing off the coil and folding up the frame.

Take-up, 21 inches. Weight, 42 pounds.

No. 897.....each \$25.26

Coffing Flag Holders and Flags



Flag Holder is designed to fit all poles. Main body casting and locking handle are made of certified malleable iron. The chain wraps around the pole and hooks into main body of clamp.

Strong coil spring between chain and main body assures tension on locking chain.

Flag is made of 6-ounce army duck. Size, 12x16 inches. Has a 1x18-inch hardwood staff.

Flag Holder.....	each	.....
Flag.....	each	.....
Flag Holder and Flag.....	each	.....

Oshkosh Metal Flags



This metal flag is light and strong. It is made of 16-gauge steel welded to a 5/8-inch hollow iron staff. The flag is painted bright red and the staff black. The little peg hole near the top is for conveniently hanging it up in the truck.

The Oshkosh Warning Sign and the Oshkosh Folding Barricade have handy sockets to accommodate this flag.

Staff, 20 inches high.

Size of flag, 12x10 inches.
Metal Flag.....each \$.90



Oshkosh Warning Signs

This warning sign is light in weight, yet durable. Legs are of 1/2-inch high carbon steel. Has 1 1/4-inch flange around edge of lettered side.

Has two hollow handles for adjusting angle of the legs. These handles also serve as flag sockets, and each is equipped with a lantern lock.

Black letters, 5 1/2 inches high, on traffic yellow background.

Height, 43 inches.

Width, 28 inches.

Thickness, 1 1/4 inches.

Size folded, 28x28x1 1/4 inches.

Weight, 23 pounds.

Warning Sign.....each \$5.30

No. 902 Oshkosh Plain Pay-Out Reels



For gang mounting on a wagon when paying out several wires at one time.

Made of hardwood, braced and reinforced with sheet steel.

Reel pins adjustable for 12, 18, and 24-inch coils.

No. 902, Wt. 40 Lb.each \$16.32

Oshkosh Safety Extension Ladders

A light weight, safety extension ladder designed expressly for public utilities.

Equipped with an automatic safety lock or latch. This lock is so arranged that when pulling on the raising rope, the lock is lifted out of position. The instant the strain on the rope is slackened, the lock drops in place. In lowering, the extension must be lowered slowly. It cannot accidentally drop.

The side rails are made from straight grained, properly seasoned aeroplane spruce.

The rungs are made from tough mountain hickory, straight grained. Each rung has a shouldered tenon joint which is pressed tightly into the side rails, assuring a safe, tight fit. The side rails of each section are connected at top, middle, and bottom with steel tie-rods. This combination makes a rugged, durable construction. Either section can be used separately as an individual ladder, both being equipped with safety tips and pikes.

Other safety features include corrugated rubber tips, transparent safety finish, safety pole-grippers, and rubber guarded safety pikes. All metal parts are parkerized.

Furnished in full range of lengths in multiples of 2 feet.

Weight, 2 pounds per foot, average.

Safety Extension Ladder...per ft. \$.87



Oshkosh Sectional Ladders

Each section is 6 feet long, making a handy ladder to have around for miscellaneous uses where a long extension ladder is larger than the need requires.

For small service trucks, one or two of these sections can be hooked on and carried around all the time so that a ladder is always handy for emergency use.

The sections join together interchangeably, lapping 1 foot. One section fits into the other at either end as shown in the illustration. The joint is stiff, solid and secure.

Outside width of top, 16 1/2 inches; inside width of bottom, 17 inches; rungs diameter, 1 1/8 inches; side rails, 1 1/8x2 3/4 inches.

Side rails are selected aeroplane spruce; rungs are straight grained mountain hickory; metals, Parkerized steel.

Special transparent finish.

Rubber pikes at bottom, on special order.

Weight per running foot, 2 pounds.

Prices upon application.



Section Which Fits Into End

No. 3600 Klein's Favorite Tree Trimmer Heads



No. 3600-21, with Straight Saw

This trimmer will sever a 1-inch branch. The head is one piece, and comprises the hook portion with which the knife engages and the socket into which the handle is inserted. Socket is perfectly straight, and eliminates the necessity of tapering the end of the handle.

The knife is forged from tool steel and is integral with the lever. Knife is held open by a flat steel spring, and is operated by a rope attached to the end of the lever.

Two threading holes are provided for attaching a screw.

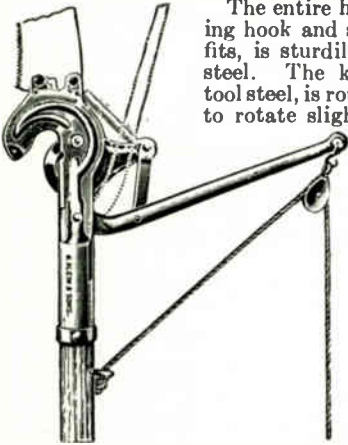
No.	Each	Size In.	Description	Wt. Lb.
3600-20	\$9.20	17	Head Only; No Saw, Rope or Handle.	3½
3600-21	11.70	23	Head with Str. Saw, No Rope or Hdle.	4
3600-22	11.90	26	Head with Curved Saw, No Rope or Hdle.	4¼
209	4.60	..	Knife Assembly	..

Tree Trimmer Handles

Length, 18 feet; brass ferrules.

No. 3601-6, 3 Sections; Weight, 10½ Pounds.....	each	\$9.70
No. 3601-9, 2 Sections; Weight, 9¾ Pounds.....	each	9.00

No. 3628 Klein Tree Trimmers



The entire head of this tool, comprising hook and socket into which handle fits, is sturdily constructed of pressed steel. The knife, made of tempered tool steel, is round in shape and arranged to rotate slightly with each cut, thus providing the entire circumference of the blade for cutting and giving an edge more than 3 times the length of that on the ordinary blade.

The leverage makes this trimmer cut the heavier branches quite easily. Knife may be readily removed for sharpening or renewal. Two threaded holes are provided for attaching saw.

Size over all, 12½ inches. Weight, 3½ pounds.
Price, No. 3628, Trimmer..... each \$11.10

No. 913 Klein's Tree Trimmer Saws



No. 913-12



No. 913-15

Saws are easy to attach to tree trimmers. Teeth are set to cut on up and down strokes. Curved blade saw is particularly efficient and easy cutting, even for large limbs.

No.	Each	Size inches	Weight per Dozen pounds
913-12	\$2.50	12	4½
913-15	2.70	15	4¾

No. 3605 Klein's Tree Trimmer Handles With Locking Ferrules



Made of selected Washington fir, turned at ends for ferrules. Size round, 1⅝ inches. Inner ferrules are of brass, outer ferrules of seamless steel tubing, galvanized.

Weight per doz. sets: No. 3605-6, 125 lb., No. 3605-9, 123 lb.
No. 3605-6, One Set, 18' Long, 3 Sections... per set \$12.50
No. 3605-9, One Set, 18' Long, 2 Sections... per set 10.70

No. 3628-K Klein's Circular Knives for Tree Trimmer



Made of first quality tool steel, oil tempered. Diameter, 2⅝ inches. Hole at center, ½ inch in diameter. Double bevel for easy cutting.

Weight per dozen, 2 pounds.

No. 3628-K.....each \$1.80

No. 913G Klein Saw Grasp



When a hand saw is required the regular tree trimmer saws can be set in this grasp in a few seconds and held securely with a single thumb screw. Efficient for cutting heavy branches.

Weight, ½ pound.

Price No. 913G.....each \$1.50

No. 915 Oshkosh Tree Trimmers



This trimmer has positive locking ferrules.

Head is made of two pieces of light forged steel, reinforced and riveted together. These sides act as a guide for the thin saw steel cutting blade. Blade is pivoted and starts cutting with a slicing motion the moment the rope is pulled. Cuts limbs up to 1½ inches in diameter.

Handle is made in three sections of 1½-inch diameter straight-grained, clear Washington fir. One 6-foot section is attached to head and two 7-foot lengths; all equipped with couplings. Furnished complete with handle and a short section of rope to which can easily be attached any kind and size of rope. One-half-inch rope is suggested for best results.

No. 915, Trimmer, less Rope. Wt. 13 Lb.....	each	\$9.10
No. 915B, Extra Blade. Wt. 10 Oz.....	each	2.50
No. 915S, Extra Spring. Wt. 2 Oz.....	each	.48
No. 915EM, Extra 7-Ft. Middle Ext. Wt. 4 Lb.....	each	2.56
No. 915EE, Extra 7-Ft. End Extension. Wt. 4 Lb.....	each	1.71
No. 915R, 20-Foot Rope with Connector. Wt. 4 Oz.....	each	1.40

No. 916 Oshkosh Tree Saws



Saw blade is strong, thin, and has fine teeth. It cuts clean. Blade is fastened in the frame.

Steel frame has hook for hanging saw in tree. The 6-inch handle has a ferrule on bottom to which can be connected the regular extensions of the trimmer.

No. 916, Saw. Weight 5 Pounds.....	each	\$7.35
No. 916B, Extra Blade. Weight 4 Ounces.....	each	1.75
No. 916T, Extra Tightener. Weight 4 Ounces.....	each	1.40



No. 1-W Bartlett Pulley Type Tree Trimmers



A very powerful cutting tool.

It not only has the compound lever, but it also has double leverage due to the pulley which is attached to the curved lever.

Will sever any branch up to 1¼-inch diameter, and the pulley enables the operator to pull the rope at any angle. A special coil spring positively returns the blade to a full cutting position.

An important feature of this tree trimmer is the light weight, the head complete weighing only 1¾ pounds.

All poles have two coats of water-proof shellac to prevent moisture absorption.

Furnished with 1¼x1½-inch rectangular poles, one piece poles or short sections joined together with No. 156 brass sleeves which have a positive locking device.

With Rectangular Pole and No. P156-2 Ferrule

4-Foot Length.....	each	\$6.10
6-Foot Length.....	each	6.40
8-Foot Length.....	each	6.70
10-Foot Length.....	each	7.00
12-Foot Length.....	each	7.30
14-Foot Length.....	each	7.60
16-Foot Length.....	each	7.90
No. 1-W Head Complete with Pulley.....	each	4.00

Extra Rectangular Sections, With No. 156-1 and 2 Body and Ferrule

4-Foot Length.....	each	\$2.40
6-Foot Length.....	each	2.80
8-Foot Length.....	each	3.20
10-Foot Length.....	each	3.60

Six and 8-foot octagon poles with round sleeves are obtainable if desired at 10 cents per pole additional.

For bottom sections only, deduct 50 cents if ferrule is not wanted.

No. 44 Bartlett Pole Saws

For large limbs.

Has 16-inch peg tooth blade with 7 teeth per inch. Saw is securely held by the head, which is stamped from stiff cold rolled steel and fastened to the pole by three bolts.

Head is made of two strips of steel riveted together so as to secure a truss shaped support for the blade, which is fastened between the two sides. Hook serves as a means for hanging the tool on a limb when not in use.

Saw can be adjusted to three angles to suit operator's position and the blade is ground for clearance, which prevents binding.

File blade has No. 395 cant file.

Furnished without ferrule.

Size pole, 1¼x1½ inches.

4-Foot Length.....	each	\$4.10
6-Foot Length.....	each	4.40
8-Foot Length.....	each	4.70
10-Foot Length.....	each	5.00
12-Foot Length.....	each	5.30
14-Foot Length.....	each	5.60
16-Foot Length.....	each	5.90

Paint brush clip will be attached to side of pole near head at 30 cents extra when desired.

No. P156-2 brass ferrule attached at 50 cents each, when extra sections are ordered.



No. 50 Bartlett Safety Back Pole Saws



Constructed to give the maximum amount of safety possible in hazardous work.

Bent wood back tapers from standard size pole to a narrow point which enables the user to operate the saw in close crotches.

In order to make the cutting most effective the cutting head has been designed so that the blade can be turned to three positions by simply loosening the thumb nut and turning the knurled holder until the pin drops into the desired position, then again tightening the thumb nut with the lower pin in a position corresponding to the upper end.

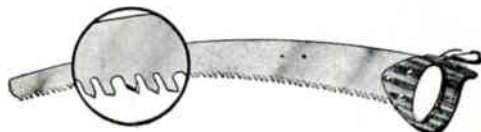
Steel blade is 36 inches long and 7/8 inch wide, having a draw cut of 5 points per inch, and will cut with great rapidity.

Saw has a cutting capacity of 5 inches.

File blade with No. 390 slim file.

5-Ft. Top Section with Blade and No. 156-2 Ferrule.....	each	\$7.00
4-Ft. Section with Sleeve Body.....	each	1.90
6-Ft. Section with Sleeve Body.....	each	2.30
8-Ft. Section with Sleeve Body.....	each	2.70
10-Ft. Section with Sleeve Body.....	each	3.10

No. 114 Bartlett Utility Pruning Speed Saws



Cuts very fast. Teeth are diamond point with a well-shaped raker. Handle has an extra large grip permitting gloves and is comfortably shaped for the hand.

Can be obtained with or without the automatic on and off belt snap.

Use 6-inch safeback cant file.

Length, blade, 26 inches.

No. 114, with Snap.....	each	\$4.30
Without Snap.....	each	3.90
Extra Snaps, Complete.....	each	.40

No. 124 Bartlett Pruning Speed Saws



Cuts very fast. Diamond point teeth with well-shaped raker. Special handle. Length blade, 24 inches.

No. 124, without Snap..... each \$3.75

No. 127 Bartlett Paragon Pruning Saws



Made of silver steel properly filed and set for best results.

Has an extra large hand hole and is very popular with linemen. Has a draw cut and considerable clearance, resulting in rapid work.

Use No. 390 slim file.

Length Blade.....	inches	20	22	24	26
No. 127.....	each	\$2.75	3.00	3.25	3.50

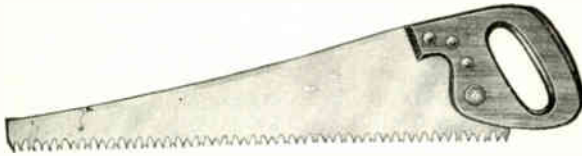
No. 170 Bartlett Foresters' Saws



For large or small limbs. Has 4½ points to the inch. Extra large handle for use of gloves. Use No. 395 cant file. Length blade, 26 inches.

No. 170.....each \$3.00

No. 41 Bartlett Utility Saws

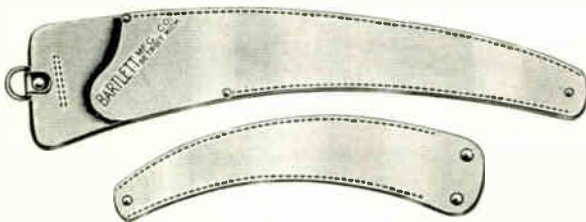


Used by utility companies. Will sever the largest branches. Extra large, special handle.

Tuttle tooth blade.

Length Blade.....inches 20 24
No. 41.....each \$2.50 2.75

Bartlett Leather Saw Sheaths



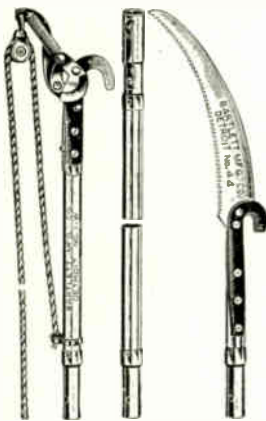
Oak tanned leather saw sheath for protection of the saw as well as the operator.

For Nos. 127, 41, 170, 114 or 124 Saws

Length Blade.....inches	20	22	24	26	.....
Each.....	\$2.10	2.20	2.30	2.40	.....
Saw No.....	41	41	170	114	124
Length Blade.....inches	20	24	26	26	24
Each.....	\$1.75	2.00	2.10	2.40	2.30

Bartlett Combination Pruners and Saws

Octagon Poles



This combination has two separate tools for head sections, mounted on short pieces of 1¼-inch octagon sitka spruce poles, with No. 146-2 round ferrule attached to the lower end and extra 6 or 8-foot octagon section fitted with round brass sleeve body which engages the ferrule and locks securely.

Combination makes it possible to use either head with same handle section, and several intermediate lengths can be added if desired.

For convenience in shipping, head sections may be ordered without extra sections if desired.

No. 1-WE, 30-Inch Head Section, Wt., 2¾ Lb.....each	\$5.15
No. 44WE, 30-Inch Head Section, Wt., 1½ Lb.....each	3.80
8-Ft. Intermediate Section with No. 146-1 and 2 Body and Ferrule.....each	3.30
8-Ft. Handle Section with No. 146-1 Sleeve Body.....each	2.80
No. 146-1 Brass Sleeve Body, Complete.....each	1.10
No. 146-2 Brass Sleeve Ferrule.....each	.50
No. 012-WE, 12-Inch Speed Saw Blade.....each	1.65

No. 10 Telephone Pole Pruning Saws



Will cut branches too large for the regular pruner. Has unbreakable malleable iron head with extra large hook for pulling out dead or cut branches and to hang up saw in tree while using other tools. Head is provided with paint brush holder to hold a brush for painting over cuts.

Highest quality saw blade, 16 inches long, made of special steel with fast, easy cutting needle teeth. Attached to head by bolt and thumb nut with lock washer. Blade adjustable to three different positions by means of three holes in end of blade which fit over end of a hardened steel screw. Shipping weight, each, 1¼ pounds.

No. 10, Saw Head, Complete with Blade (Without Pole).....each \$2.50

Bartlett Tree Paint

Black Antiseptic Pruning Compound



An ant repellent compound.

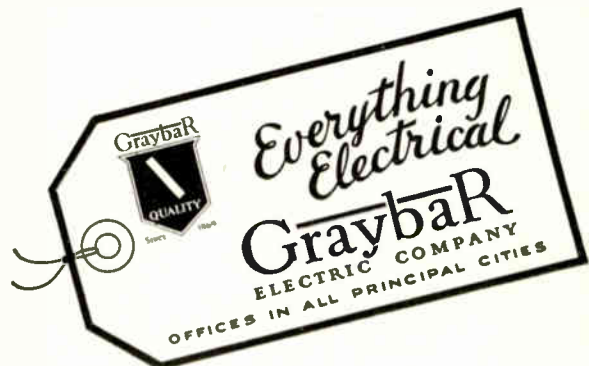
Especially adaptable to fall and winter trimming work, because it retains its liquid consistency under freezing temperatures.

Liquid is used for wound dressing and plastic tree surgery.

Made with a pure Egyptian asphalt base. Contains only ingredients which are helpful to the healing of tree wounds. Will not crack or blister. Thin only with linseed oil.

Packed in cartons: 48 half-pint or pint cans; 24 quart cans; and 6 gallon cans.

	Liquid Each	Plastic Each
½-Pint Can.....	\$3.30	\$4.40
1-Pint Can.....	.45	.60
1-Quart Can.....	.75	.90
1-Gallon Can.....	1.50	1.75
5-Gallon Drum.....	5.50	7.50
30-Gallon Drum.....	30.00	.....
50-Gallon Drum.....	50.00	.....



No. 1 Tree Pruners

Cuts one-inch diameter branches and is used by utility and tree expert companies. Also for light general line clearing work.



No.	Description	Ship. Wt. Lb.	Each
1-18	Comp. with Rope, 18-Ft. Pole	10	\$9.50
1	Pruner Head Only	1½	1.75
1	6-Ft. Head Section Pole	2¼	2.00
1	8-Ft. Head Section Pole	2½	2.55
1	6-Ft. Exten. Section Pole	3	3.00
1	8-Ft. Exten. Section Pole	3¼	3.75
51	6-Ft. Tapered Head Sec. Pole	3¼	4.00
21	6-Ft. Tapered Extension Sec. Pole	3½	5.00

No. 2 Tree Pruners

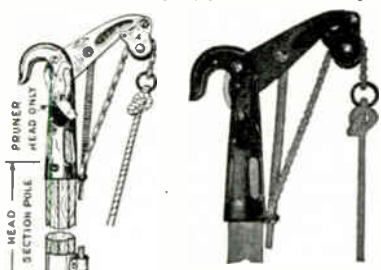


Cuts 1½-inch diameter branches and is a powerful, durable tree pruner designed for linemen's use in clearing branches from electric light, power and telephone lines. Takes hard use and gives efficient service.

No.	Description	Each Wt. Lb.	Each
2-18	Comp. with Rope, 18-Ft. Pole	19	\$15.00
2	Pruner Head Only	4	4.40
2	6-Ft. Head Section Pole	4½	2.70
2	8-Ft. Head Section Pole	4¾	3.75
2	6-Ft. Extension Section Pole	5½	4.25
2	8-Ft. Extension Section Pole	5¾	5.50

No. 11 Improved Tree Pruners

Cuts one-inch diameter branches; lightweight, powerful, general purpose pruner for light trimming and line clearing along electric light, power and telephone wires.



No.	Description	Each Wt. Lb.	Ship. Wt. Lb.
11-18	Comp. with Rope, 18-Ft. Pole	10	\$10.00
11	Pruner Head Only	1½	2.20
6-Ft. Head Sec. Pole		2¼	2.00
1		2¼	2.00
8-Ft. Head Sec. Pole		2½	2.55
1		2½	2.55
6-Ft. Exten. Sec. Pole		3	3.00
1		3	3.00
8-Ft. Exten. Sec. Pole		3¼	3.75
1		3¼	3.75
6-Ft. Tapered Head Sec. Pole		3¼	4.00
51		3¼	4.00
6-Ft. Tapered Exten. Sec. Pole		3½	5.00
21		3½	5.00

No. 12 Improved Tree Pruners



Easily cuts 1½-inch diameter branches especially designed for electric light, power and telephone line clearing.

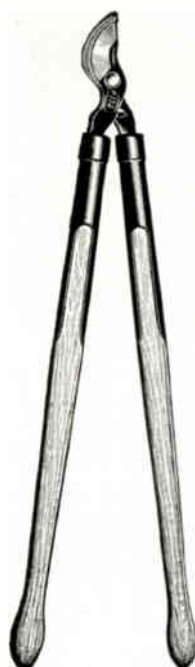
Will stand up and give long efficient service under the hardest use and even abuse.

No.	Description	Each Wt. Lb.	Ship. Wt. Lb.
12-18	Comp. with Rope, 18-Ft. Pole	19	\$15.50
12	Pruner Head Only	4	5.00
2	6-Ft. Head Sec. Pole	4½	2.70
2	8-Ft. Head Sec. Pole	4¾	3.75
2	6-Ft. Exten. Sec. Pole	5½	4.25
2	8-Ft. Exten. Sec. Pole	5¾	5.50

Complete Pruner

Solid or unjointed poles, 6, 8, and 12-foot lengths, and special length jointed pole sections for special purposes, can be supplied. Prices upon application.

No. 777 Bartlett Two-Hand Pruners



Due to the fact that the majority of men are right-handed, the blade has been placed on the opposite side than is the general custom. This permits the blade to be placed next to the body or main limb of the tree with hook handle held in left hand, while the right hand operates the blade.

Hook remains stationary while blade closes, instead of blade being held stationary while hook closes by twisting around the branch, wounding the bark.

Blade positively will not cut or dig into the hook. By dropping the hook considerably below the center line, a superior positive draw cut has been produced, with an opening between blade and hook, allowing a straight thrust at the branch.

Both blade and hook are hardened drop forged crucible tool steel. Has white ash handle.

26-Inch Handle with 10-Inch Strap Ferrule	each	\$3.60
26-Inch Handle with 4½-Inch Plain Ferrule	each	3.50
20-Inch Handle with 4½-Inch Plain Ferrule	each	3.40

Ezy-Cut Pruners



A powerful tool for heavy land clearing, brush cutting, clearing right of way, etc. Easily cuts two-inch brush.

Packed 1 dozen in a shipping carton.

No.	25	26
Each	\$3.00	\$4.00
Handles	22 inches	30 inches
Length Over All	28 inches	36 inches
Shipping Weight per Dozen	53 pounds	78 pounds

Super-Cut Pruners



An easy cutting, strong, powerful pruner for brush cutting, etc. Will stand the hardest use. Cuts two-inch diameter branches.

Cutting parts and handles are forged in one piece from special chrome-molybdenum alloy steel, carefully hardened, tempered and ground. Fitted with large, hardwood hand grips, riveted so that they cannot loosen or come off.

Packed 1 dozen in a shipping carton.

No.	726	730
Each	\$3.50	\$3.75
Length Over All	26 inches	30 inches
Shipping Weight per Dozen	48 pounds	51 pounds

Spaulding Universal Tree Wire Guards

For Insulation and Abrasion



Guard Ready to Wrap Around Wire



Guard Installed on Wire

These guards are made of two materials. For the inside of the tube a flexible bakelized fabric is provided, of high dielectric strength, affording perfect electrical protection. This is an inert material which will not oxidize nor deteriorate after long-time exposure.

Several turns of the flexible insulating material enclose the wire. Overlying this inner protection is a tough outside shell of glass-hard finish. This shell is built up of strong, tough fabric, bonded with phenolic varnish for density and resistance to abrasion. Will not abrade or wear through.

Economical in that it is not necessary to cover the wire from one pole to another in order to protect a section of it. Also has the constant gripping action which maintains the tightness of the convolutions and prevents any longitudinal displacement.

For 2600 Volts

Type	Per 100	Size Wire	DIMENSIONS, INCHES		
			Outside Flex. Shell	Sec.	Lgth.
A	\$105.00	{ No. 6 to No. 2 W. P. 3-Brd. No. 1 to No. 00 Str. Bare .30 to .40-Inch Diam. }	4 1/2	6	38

For 5000 Volts

B	121.00	{ No. 6 to No. 2 W. P. 3-Brd. No. 1 to No. 00 Str. Bare .30 to .40-inch Diam. }	5	12	38
C	110.00	{ No. 8 W. P. 3-Brd. No. 8 to No. 2 Sol. Bare .16 to .26-Inch Diam. }	4	9	38
D	138.00	{ No. 1 to No. 0 W. P. 3-Brd. No. 000 to 250,000 CM Str. Bare .50 to .60-Inch Diam. }	7	17	38
E	159.00	{ No. 00 to No. 0000 W. P. 3-Brd. 250,000 CM to 500,000 CM Str. Bare .60 to .80-Inch Diam. }	9	22	38

For 7500 Volts

K	159.00	{ No. 8 to No. 2 W. P. 3-Brd. No. 8 to No. 00 Sol. Bare .13 to .42-Inch Diam. }	7	22	38
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Accessories

Double faced adhesive tape is furnished with each order of tree wire guards to secure guard to wire for easiest installation.

A set of installation directions is wrapped with each guard.



Fibre Installation Tool

A special tool of insulating fibre for installation of Spaulding Tree Wire Guards (Types A to K inclusive). The installation of these guards should not be attempted without the use of this tool.

With this tool, these guards can be completely installed in five minutes or less, even in extremely cold weather.

Each..... \$.75

B & L Star Brand Metal Blocks

For Manila Rope
With Loose Side Hooks



No. 2325-A Single



No. 2326-A Double

Drop forged hook of special steel and of extra large size and strength. Malleable iron shell carefully rounded and without sharp projections; constructed to prevent rope jamming between the shell and sheaves.

Double blocks have full center straps, which extend through the entire length of the block.

Lgth. Shell	Diam. Rope	Iron Bushed			Roller Bushed			Graphite Bronze Bushed		
		Single	Double	Triple	Single	Double	Triple	Single	Double	Triple
3	3/8	\$2.40	\$3.60	\$4.80	\$3.00	\$4.70	\$6.40	\$4.00	\$6.60	\$9.20
4	1/2	2.70	4.00	5.30	3.30	5.10	6.90	4.30	7.00	9.70
5	5/8	3.50	5.30	7.10	4.10	6.40	8.70	5.10	8.30	11.50
6	3/4	4.10	6.30	8.50	5.00	8.00	11.00	6.00	10.00	14.00
7	7/8	5.80	8.40	11.00	7.00	10.50	14.00	8.00	12.50	17.00
8	1	6.60	10.80	15.00	8.00	13.50	19.00	9.00	15.50	22.00
9	1 1/8	10.00	15.00	20.00	12.00	18.00	24.00	13.00	20.00	27.00
10	1 1/4	12.00	18.00	24.00	15.00	24.00	33.00	16.00	26.00	36.00
12	1 1/2	18.00	29.00	40.00	22.00	37.00	52.00	23.00	39.00	55.00

Japanned Finish

Galvanized Finish

B & L Star Brand Wood Tackle Blocks for Manila Rope

Regular Mortise—Inside Iron Strapped—Loose Side Hooks

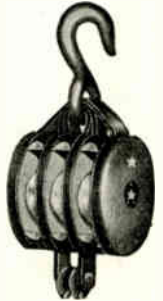
Japanned Fittings



No. PU-2207 Single



No. PU-2208 Double



No. PU-2209 Triple

Dimen. Shell	In. Rope	Iron Bushed			Roller Bushed			Graphite Bronze Bushed		
		Single	Double	Triple	Single	Double	Triple	Single	Double	Triple
3	3/8	\$1.50	\$2.40	\$3.30	\$2.10	\$3.40	\$4.70	\$3.10	\$5.20	\$7.30
4	1/2	1.70	2.60	3.50	2.30	3.70	5.10	3.20	5.50	7.80
5	5/8	2.10	3.20	4.30	2.80	4.50	6.20	3.70	6.20	8.70
6	3/4	2.50	4.00	5.50	3.40	5.70	8.00	4.40	7.70	11.00
7	7/8	3.00	4.80	6.60	4.00	6.60	9.20	5.40	9.20	13.00
8	1	4.20	6.40	8.60	5.60	8.80	12.00	7.00	12.00	17.00
9	1 1/8	5.50	8.50	11.50	7.00	11.00	15.00	9.00	14.00	19.00
10	1 1/4	7.00	11.00	15.00	9.00	14.00	19.00	11.00	18.00	25.00
12	1 1/2	12.00	19.00	26.00	14.00	22.00	30.00	16.00	26.00	36.00

B & L Star Brand Aluminum Shell Conductor Stringing Snatch Blocks

For Aluminum Cable

Drop Forged Flatted Swivel Hooks, Heads and Links

Furnished in drop link or safety locking pattern.

Lynite roller bearing sheaves with polished scores.

This snatch block is made almost entirely of high-grade aluminum, combining lightness with strength, and is used in stringing aluminum conductors.

The main strain is taken through the drop forged swivel hook

attached to the drop forged steel straps which never come in contact with the conductor.

The PU 32-A drop link pattern furnished unless otherwise specified. When ordering specify number, size of sheave with size of cable to be used.



No. PU 32-A Drop Link Pattern



No. PU 32 Safety Locking Pattern

Size Sheave Inches	Each	SIZE ALUMINUM CABLE		Weight Pounds
		Min. CM	Max. CM	
7x1 ³ / ₈ x ³ / ₄	\$32.00	No. 2/0	300,000	14
10x1 ¹ / ₂ x ³ / ₄	46.00	336,400	500,000	18
14x2 x1	80.00	500,000	795,000	37
16x2 ¹ / ₄ x1	96.00	795,000	1,272,000	40

B & L Star Brand Conductor Stringing Snatch Blocks

Wood Shell—Drop Link Pattern

Drop Forged Flatted Stiff Swivel Hooks

Heads and Links

With Roller Bearing Sheaves

Equipped with specially designed roller bearings to insure freedom of action, as any failure would create a dangerous abrasion of the conductors.

These blocks furnished in various sizes and made with special wide throats when so desired, so as to accommodate any large splicing that may run over sheave.

When ordering blocks specify figure number, size and type of sheave with size cable to be used, Copper or Aluminum.



No. PU 38 Straight Mortise



No. PU 38A Wide Throat

Size Sheave Inches	KIND OF SHEAVE				Throat In.	MAXIMUM SIZE OF CABLE CM	
	Jap'd. Iron	Galv. Iron	Lignum-vitae	Lynite		Copper	Aluminum
7x1 ¹ / ₂ x ⁵ / ₈	\$12.00	\$13.00	\$13.00	\$19.00	...	...	...
7x1 ³ / ₈ x ³ / ₄	15.00	16.00	17.00	27.00	...	188,700	300,000
10x1 ¹ / ₂ x ³ / ₄	22.00	23.00	28.00	43.00	...	250,000	397,500

Wide Throat

7x1 ³ / ₈ x ³ / ₄	\$16.00	\$17.00	\$18.00	\$28.00	2 ⁵ / ₈	188,700	300,000
10x1 ¹ / ₂ x ³ / ₄	24.00	25.00	30.00	45.00	2 ⁵ / ₈	250,000	397,500
10x1 ⁵ / ₈ x ³ / ₄	26.00	27.00	32.00	46.00	2 ⁷ / ₈	300,000	477,000
10x1 ⁷ / ₈ x ³ / ₄	28.00	29.00	35.00	54.00	3 ¹ / ₈	314,500	500,000

B & L Star Brand Public Utility Snatch Blocks for Manila Rope

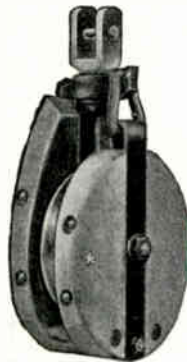
Eastern Pattern—Malleable Shells Drop-Forged Flatted Stiff Swivel Hooks

Has malleable iron shell, extra heavy drop-forged flatted stiff swivel hook, wrought iron straps, safety-locking link and smooth rounded edges to prevent chafing rope.



No.	Size Sheave In.	5-Roll Bear. Each	Star Graph. Bear. Self-Lub. Each	Graph. Brz. Bear. Self-Lub. Each	For Rope Diam. In.	Lgth. Shell In.
No. PU-2357, Open 3	x1 ¹ / ₈ x ¹ / ₂	\$5.30	\$4.60	\$5.90	7/8	6
	4 ¹ / ₂ x1 ³ / ₈ x ⁵ / ₈	7.55	6.65	8.20	1	8
	5 ³ / ₄ x1 ⁷ / ₈ x ³ / ₄	11.80	10.25	12.80	1 ¹ / ₄	10

B & L Star Brand Conductor Stringing Snatch Blocks



No. PU 25

When your requirements call for blocks of special sizes or designs, send in your specifications and our engineering department will gladly cooperate with you in the selection of proper blocks.

Prices upon application.

B & L Star Brand Public Utility Snatch Blocks for Wire Rope

Drop Forged Flatted Stiff Swivel Hooks, Heads and Links

Used with pole derricks; for pulling aerial cable, etc. Impression prevents rope jumping between sheave and shell.

All galvanized with sheave for wire rope, with graphite-bronze self-lubricating bushing. Rope guard prevents rope interfering with safety attachment.

Size Block.....inches	6	8	10
Each.....	\$9.00	12.00	18.00
Size Wire.....inches	3/8	1/2	5/8
Weight Each.....pounds	15	32 ¹ / ₂	52

Extra Iron Sheaves

Size.....in.	6x1x ³ / ₄	8x1 ¹ / ₄ x ⁷ / ₈	10x1 ¹ / ₄ x1
Each.....	\$1.90	3.75	5.05
Wt. Each..lb.	3 ¹ / ₂	8	12

B & L Star Brand Malleable Iron Shell Conductor Stringing Snatch Blocks For Manila Rope

No.....	30	20
Size Sheave..in.	3x ³ / ₄ x ³ / ₈	3x1x ¹ / ₂
Size Hook...in.	5/8	5/8
Size Rope...in.	5/8	3/4

Japanned

Iron Bushed.....ea.	\$5.90	\$6.50
Graphite Bushed..ea.	6.10	6.90
Bronze Bushed...ea.	7.10	7.90

(Self Lubricating)

Galvanized

Iron Bushed.....ea.	\$6.30	\$6.90
Graphite Bushed..ea.	6.50	7.30
Bronze Bushed...ea.	7.50	8.30

(Self Lubricating)

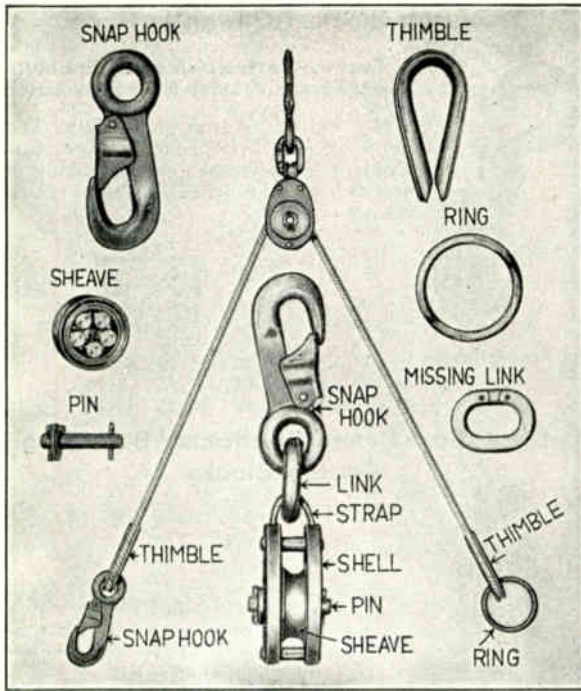


No. 30 PU 2407



No. 20 PU 2408

B & L Star Brand Aerial Hand Lines

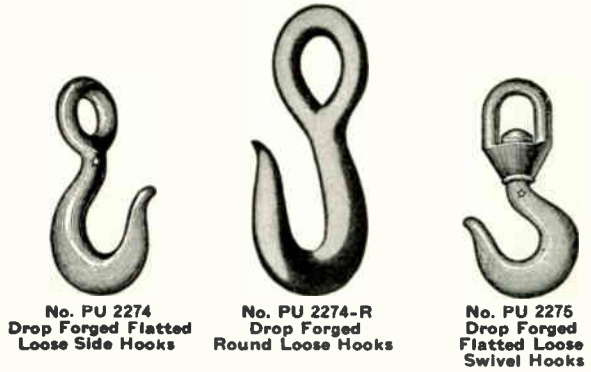


No. PU-37

Consists of 3-inch single roller bushed galvanized hollow steel block, 2 snap hooks, ring, 2 thimbles, missing link, and rope.

Complete with 60 Ft. of Manila Rope... each \$7.00 \$8.40
 Complete with 75 Ft. of Manila Rope... each 7.60 9.30
 Blocks Only without Rope (No Connections)... each 1.80

B & L Star Brand Hooks



Prices upon application.

Manila Rope



AMCO All-Weather Manila Rope

Made from the finest grade of white manila fibre and specially treated to resist rotting, moisture and other forms of mildew and fibre deterioration. It remains soft and pliable when wet and will not freeze up hard in cold weather. The treatment does not increase the weight of the rope. Packed in 1200-foot coils.

American Superior Manila Rope

A best quality rope that is carefully and uniformly manufactured from the finest grade of white manila fibre. Used by steamship companies and by industrial concerns for a great number of years.

Constantly tested through every step of production, this rope meets all exacting requirements for weight and strength. Packed in 1200-foot coils.

Approximate Weights and Strengths of 3-Strand Rope

Diameter Inches	Circumference Inches	APPROX. LENGTH		Working Strain Pounds	Approx. Breaking Strength Pounds	Approx. Weight Pounds per Coil
		PBR LB.	Ft. In.			
1/4	3/4	50	..	120	600	24
5/16	1	35	..	200	1000	35
3/8	1 1/8	24	6	230	1350	49
7/16	1 1/4	19	6	330	1750	63
15/32	1 3/8	16	..	450	2250	75
1/2	1 1/2	13	4	530	2650	90
9/16	1 3/4	9	7	690	3450	125
5/8	2	7	6	880	4400	160
3/4	2 1/4	6	1	1080	5400	200
13/16	2 1/2	5	1	1300	6500	234
7/8	2 3/4	4	5	1540	7700	270
1	3	3	8	1800	9000	324
1 1/16	3 1/4	3	2	2100	10500	375
1 1/8	3 1/2	2	9	2400	12000	432
1 1/4	3 3/4	2	5	2700	13500	502
1 1/2	4	2	1	3000	15000	576
1 5/8	4 1/2	1	8	3700	18500	720
1 3/4	5	1	4	4500	22500	893
2	5 1/2	1	1	5300	26500	1073
2 1/8	6	..	11	6200	31000	1290
2 1/4	6 1/2	..	9 1/2	7200	36000	1503
2 1/2	7	..	8	8200	41000	1752
2 3/4	7 1/2	..	7	9300	46500	2004
3	8	..	6 1/4	10400	52000	2290
3 1/8	8 1/2	..	5 1/2	11600	58000	2580
3 1/4	9	..	5	12800	64000	2900
3 1/2	9 1/2	..	4 1/2	14200	71000	3225
3 3/4	10	..	4	15400	77000	3590
4	11	..	3 3/8	18200	91000	4400
4 1/2	12	..	2 7/8	21000	105000	5225

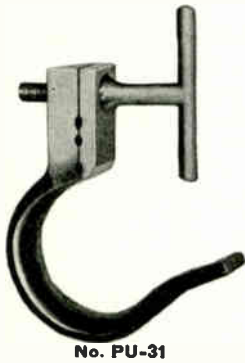
4-strand rope weights, about 7% more than 3-strand.

B & L Star Brand Booster Hooks

Supports the cable while being pulled through the supporting rings. Some rings, while adequate for supporting a stationary cable, tend to creep when performing the dual function of supporting and resisting movement while the cable is being placed.

Securely clamped to the messenger strand and presents a smooth rounded surface to the moving cable sheath.

Approximate weight, 3 pounds.
 No. PU-31each \$3.00

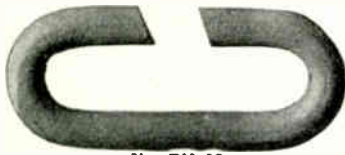


No. PU-31

B & L Star Brand C Hooks

For connecting the winch or pulling line to the cable grip or core hitch. Also used at the end of the winch line for attaching to poles, transformers, etc.

Approximate weight, 2 1/2 pounds.
 No. PU-28each \$3.00



No. PU-28

B & L Star Brand Flatted Swivel Hooks

Galvanized

For Come-Along

Size.....inches 1/2 5/8
 No. PU-41.....each \$2.28 3.57
 For Dbl. Blocks.....inches 3 4
 Length Overall.....inches 7 1/4 8
 Weight.....pounds 5/8 1



No. PU-41

American Galvanized Arc Lamp Chain



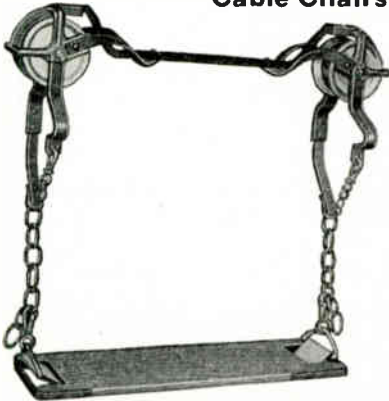
Made in three sizes: Nos. 31 and 33 for suspending arc lamps, and No. 35 for suspending incandescent lamps. It is heavily galvanized and rust-proof.
Put up on 500-foot reels.

Size No.	Description	Tensile Strength per 1000 Pounds	Wt. per 1000 Feet	Price per Foot
31	For Heavy Street Fixtures	915	118	\$8.50
33	For Medium Street Fixtures	725	89	8.25
35	For Light Street Fixtures	550	71	7.50

Galvanized Attachments

Hooks				
For Chain Nos.		31	33	35
Price, Hooks	per 100	\$6.00	6.00	4.00
Rings				
For Chain Nos.		31	33	35
Price, Rings	per 100	\$9.00	5.00	3.00
Connecting Links				
For Chain Nos.		31	33	35
Price, Connecting Links	per 1000 sets	\$38.00	38.00	30.00

Chance Rubber Wheel Flexible Safety Cable Chairs



No. 28 with Seat No. 8.

This chair can be collapsed, strapped or tied for convenient transportation. Adjustable up or down, by snaps and chain. Chain is made of steel, electric welded on sides of links to guard against weld opening. Snaps used are linemen's snaps of drop forged, galvanized steel.

Holes are provided in open side of chair frame for snapping on safety belt.

Chair is equipped with hand brake to hold chair stationary.

No. 7 seat is made of high grade fir lumber, reinforced with strap steel imbedded in wood. No. 8 seat is made with belting of best canvas, riveted at ends with copper rivets around electric welded iron hangers.

Width, 21 inches. Weight packed, 27 pounds.

No. 27, With No. 7 Seat	each	....
No. 28, With No. 8 Seat	each	....

Cope Aerial Cable Feeders and Straighteners



For pulling in aerial cable.

The wide mouth aluminum bells and flexible steel tubing prevent danger to cable or sheath. Holding clamps which securely grip messenger wire can also be used for dead-ending and splicing work. Interior surfaces are smoothly finished to accommodate up to 3-inch cables.

Complete with 6-Foot Tube, 2 Pairs Malleable Iron Clamps	each	\$20.00
Extra Lengths of Tubing	per foot	.90
Holding and Splicing Clamps	per pair	4.00

B & L Star Brand Aerial Cable Guide and Straightener



No. PU-29

For straightening lead covered cable while pulling into rings.

Standard size is for 2 5/8-inch diameter cable; other sizes made up for larger diameter cable. Weight, 24 pounds.

No. PU-29.....each \$36.50



No. PU-30, Open

B & L Star Brand Single Sheave Cable Blocks

For guiding winch lines in conjunction with aerial cable guides.

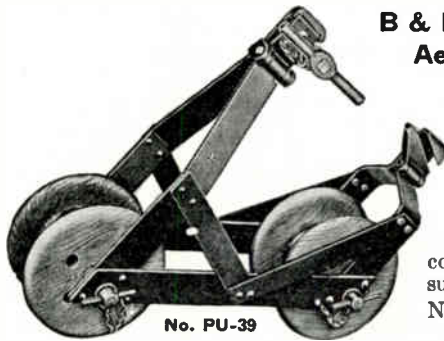
Standard for 2 5/8-inch diameter cable. Other sizes made up for larger diameter cable.

Weight, 11 pounds.

No. PU-30.....each \$9.00

B & L Star Brand Aerial Cable Guides

With Wood Rollers



No. PU-39

For pulling lead covered cable into supporting rings.

No. PU-39, Weight, 32 lbs. ea. \$40.00

B & L Star Brand Aerial Cable Cars

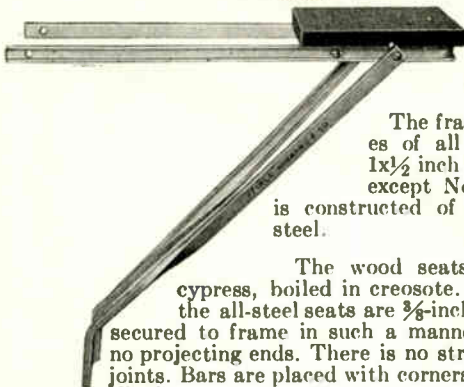


No. PU-36

No. PU-36, Weight, 21 1/4 Pounds.....each \$24.00

Hubbard Pole Seats

Hot Galvanized

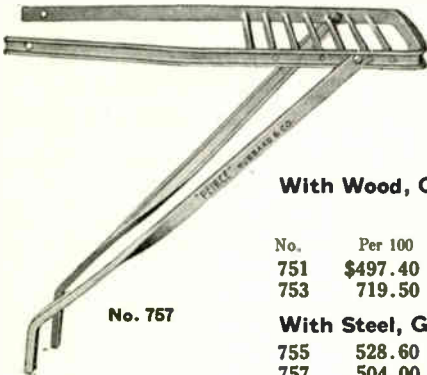


Will support more than three fourths of a tonsafely.

The frames and braces of all sizes are of 1x½ inch channel steel, except No. 9030, which is constructed of ¾-inch round steel.

The wood seats are 1½-inch cypress, boiled in creosote. The bars of the all-steel seats are ¾-inch square steel, secured to frame in such a manner as to leave no projecting ends. There is no strain on riveted joints. Bars are placed with corners up to prevent slipping.

No. 751



No. 757

With Wood, Creosoted Seat

No.	Per 100	Size Seat Inches	Shipping Wt. Per 100 Lb.
751	\$497.40	11x12	1300
753	719.50	11x20	1400

With Steel, Galvanized Seat

755	528.60	12x13½	1400
757	504.00	12x11	1300

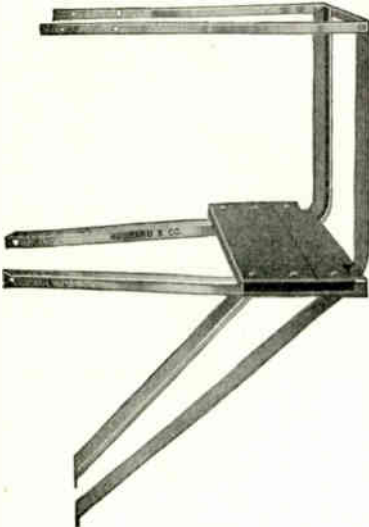
With Wood, Painted Seat

†9030	2757.00	8x26	4300
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†A. T. & T. Co. Std.

Hubbard Pole Balconies

Hot Galvanized



No. 9035

Used for convenience and comfort in telephone terminal box work and serves as switching platform with power companies.

Frame, braces and guard rails of No. 9035 are made of open hearth steel, galvanized by hot-dip process. Wooden platform is of thoroughly seasoned oak, painted with two coats of standard green pole paint.

Nos. 9035 and 9045 are identical except that the railing on No. 9035 fastens to a telephone terminal box and the railing on No. 9045 fastens to the pole.

Upright braces are 1½x1½x¾ inch steel; the platform supports, 1¾x1¾x¾ inch angle steel; and the guard rail of 1¼ inch flat steel.

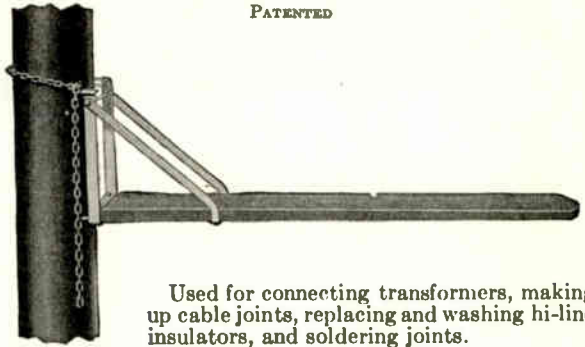
The complete balcony includes all bolts for fastening parts together but not the bolts for attaching to pole.

No.	†9035	9045
Per 100	\$4345.30	5413.10
Size Seat	14x30	14x30
Shipping Weight Per 100	6300	6700

†A. T. & T. Co. Std.

No. 600 Peirce Lineman's Safety Platforms

PATENTED



Used for connecting transformers, making up cable joints, replacing and washing hi-line insulators, and soldering joints.

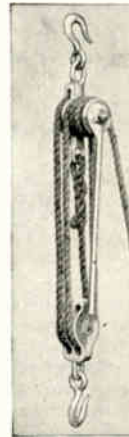
Width, 9½ inches. Length, 71 inches.

No. 600. Ship. Wt. Each, 50 Pounds.....per 100 \$8038.00

Chance Capstan Pulley Blocks

A light weight tool, easy to handle. Has a leverage ratio of 32 to 1. Equipped with ratchet handle.

Pulleys and drum are aluminum. Handle, housing, and hooks are drop-forged steel. Rope is manila.



No.	Capacity Pounds	Size Rope Inches	Net Weight Pounds
2	2000	½	15
* 2A	2000	½	13
4	4000	5/8	25¼
* 4A	4000	5/8	20½
22	3000	½	19¼
*22A	3000	½	16¾
44	5000	5/8	31¼
*44A	5000	5/8	25¾

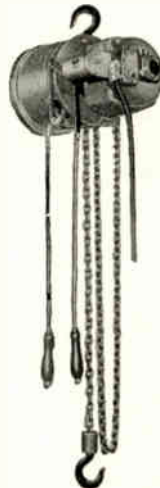
*Without rope.

Coffing Quik-Lift Electric Hoists
Hook Suspension—Pendant Rope Control

This hoist incorporates a maximum amount of efficiency, speed, power and durability. Standard lift, 8 feet.

The heavy duty, ball bearing motor is fully enclosed; high starting torque. Voltage, 110 or 220-440 volts; single or three-phase; 60 cycles. Can be plugged into any light circuit or current connection, a.c. or d.c. D.c. current is \$10.00 extra on all hoists except those with numbers preceded by the letter S which are \$20.00 extra.

Hoist is furnished with lubri-seal ball bearings throughout. Gears and pinions are made of special alloy steel, heat treated; gear system is sealed and running in oil. Hooks are made of special alloy steel, heat treated; extra heavy load chain; fool-proof limit switches.

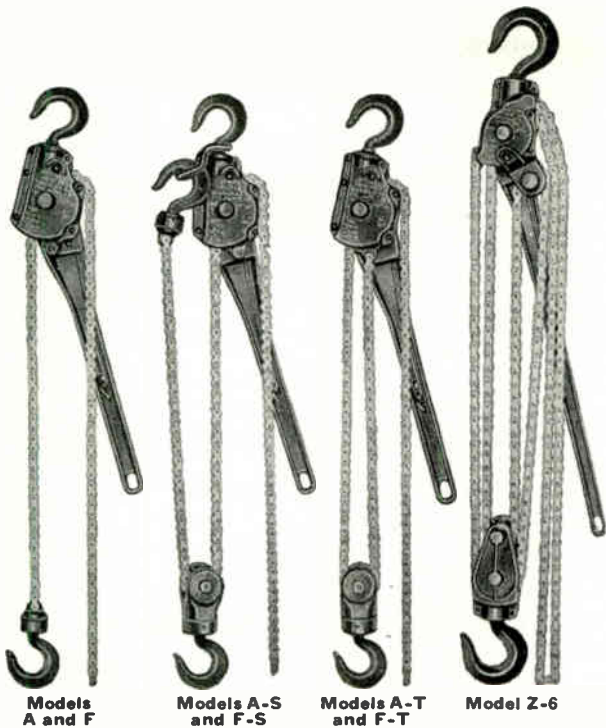


No.	Each	Cap. per Ft. Lb.	Lifting Speed per Min.	Motor Hp.	Shortest Dist. between Hooks In.	Net Wt. Lb.
J- 250-44	\$150.00	250	44	1/8	15½	89
J- 500-22	150.00	500	22	1/8	15½	89
J- 500-33	165.00	500	33	1/8	15½	99
J- 500-49	180.00	500	49	3/4	15½	126
J-1000-11	150.00	1000	11	1/8	15½	95
J-1000-17	165.00	1000	17	1/8	15½	115
J-1000-24	180.00	1000	24	3/4	15½	135
J-2000-5½	159.50	2000	5½	1/8	17½	95
J-2000-8	174.50	2000	8	1/8	17½	115
J-2000-12	200.00	2000	12	3/4	17½	135
JD-4000-2¾	185.00	4000	2¾	1/8	22	116
JD-4000-4	200.00	4000	4	1/8	22	131
JD-4000-6	215.00	4000	6	3/4	22	155
S-1000-36	250.00	1000	36	1	18	180
S-2000-18	250.00	2000	18	1	18	180
SD-4000-9	275.00	4000	9	1	23	195

The letter D signifies that the hoist has a double chain.

Can be furnished with special motors, such as Explosion-Proof or 25, 30, and 50 cycle.

Coffing's Safety-Pull Ratchet Lever Hoists



Hoist is equipped with a dual ratchet and pawl assembly, independent of each other, and the handle is always under control. (Cannot slip or drop load.)

The Safety-Pull has the free chain feature. That is when there is no load on hoist a slight pressure on thumb latch allows load chain to be pulled through the hoist, either up or down, without operating the handle.

Reversible handle permits operating hoist in any position, horizontally, vertically or from either side of the hoist.

Handle will bend at maximum overload before chain will break or hooks will straighten out. Handle is made of certified malleable iron.

Safety stops prevent handle from spinning in case operator's hand should slip off handle.

Specially designed hooks are made of drop-forged, heat-treated alloy steel.

Cadmium plated roller chain is standard on all models.

The hoist frame is made of certified malleable iron.

Sprocket and ratchet are made of special alloy drop-forged steel, heat treated and ground.

Reversing mechanism, bearing pins, etc., are made of heat-treated alloy steel to meet their special functions.

Hoists are factory tested at 100% over rated capacity.

Model	Each	Extra Lift per Ft.	Rated Cap. Ton	Lb. on Lever to Lift Rated Cap.	Stand. Lift In.	Min. Dis. between Hooks In.	Lift Speed per Min. In.	Net Wt. Lb.
*A	\$33.00	\$.90	3/4	56	56 1/2	13	36	14
*AS	41.00	1.80	1 1/2	60	56	15	18	19
*AT	41.00	1.80	1 1/2	60	55 1/2	15	18	17
*F	47.50	1.60	1 1/2	116	56 1/2	16	48	25
*FS	59.50	3.20	3	120	55 1/2	18	24	36
*FT	59.50	3.20	3	120	55	17	24	34
Z4 1/2	108.00	4.80	4 1/2	124	51	25	18	49
Z6	115.00	6.40	6	124	52	25	12	59
W9	235.00	8.00	9	124	60	30	9.6	120
W11	255.00	9.60	11	124	60	30	8	130
W13	275.00	11.20	13	124	60	30	7	140
W15	300.00	12.80	15	124	60	30	6	150

*If wanted with intermediate locking pawl, add \$5.00 to list.

NOTE.—Models A-S and F-S: By attaching a special iron block, called a super attachment, to Model A or F hoist (and 5 feet of chain to keep the standard 5-foot lift) they can be converted into double their rated capacities. Super attachment for Model A-S, \$5.05; Model F-S, \$6.55.

Coffing Power Master Spur Gear Chain Hoists Gravity Lowering



1, 1 1/2 and 2 Ton

Heat treated alloy steel swivel hooks. Certified malleable iron housing and hand chain wheel.

Free chain release for quick load adjustment. Hand control chain, gravity lowering, lowering speed controlled by governor. Load may be stopped at any position.

Special alloy heat treated Diamond load chain. All hooks and chains designed to carry 300% over rated capacity.

Expanding governor and brake. Safety band brake designed to slip at maximum overload, serves as a warning but will not drop load.

Cut alloy steel planetary gear system, sealed and running in oil.

Lubri-steel precision ball bearings.

Hardened and ground alloy steel load sprocket.

The 1, 1 1/2 and 2 ton hoists have single load chain; 3 and 4 ton hoists double chain.

Capacity..... tons	1	1 1/2	2	3	4
Each.....	\$90.00	112.50	122.50	142.00	152.00
Extra Lift.... per foot	\$1.65	2.10	2.10	3.70	3.70
Blocks for Converting to Large Capacity.ea.				\$15.00	15.00
Load Chain per lin. ft.	\$1.15	1.60	1.60	1.60	1.60
Hand Chain per lin. ft.	\$.25	.25	.25	.25	.25
Standard Lift.... feet	8	8	8	8	8
Min. Dis. Bet. Hooks in.	14	16	16	21 1/2	21 1/2
Chain Pull Full Load. lb.	76	97	98	100	101
Chain Overhaul to Lift Load One Foot.. feet	31	38	43	76	86
Lowering Speed... fpm.	20	15	15	7 1/2	7 1/2
Hoisting Speed... fpm.	4 1/2	5	4 1/2	2 1/2	2 1/4
Net Weight... pounds	86	98	100	116	120

Larger capacities prices upon application.

Model C Coffing Two-Gear Chain Hoists High Efficiency Cam Actuated



A free-running hoist, anti-friction throughout, all weather type, suitable for any application. Conforms to Army and Navy specifications.

This hoist has a most efficient gear reduction system, sealed and running in oil. Equipped throughout with lubri-sealed precision ball bearings.

All working parts are fully enclosed in certified malleable iron housing.

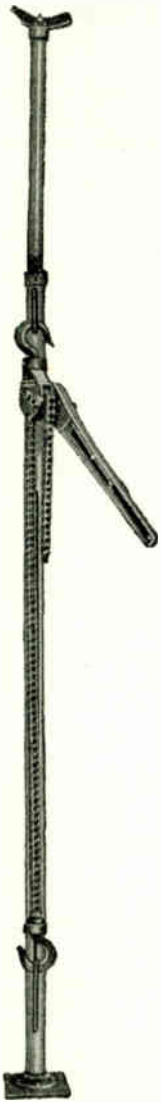
Has special designed load hooks and special alloy steel electric welded chain.

Tested at 100 per cent over rated capacity.

Model	Cap. Tons	Each	*Extra Chain per Lifting Foot	Extra Load Chain per Lineal Foot	Extra Hand Chain per 2 Lineal Feet	Net Wt. Lb.
C	1/2	\$60.00	\$.85	\$.50	\$.35	75
C	1	73.20	1.05	.70	.35	90
C	1 1/2	85.00	1.05	.70	.35	90
CD	2	98.00	1.75	.70	.35	108
CD	3	110.00	1.75	.70	.35	108

Model	Cap. Tons	Std. Lift Feet	Min. Dist. Bet. Hooks In.	Hoisting Speed per Min. Feet	Chain Pull to Lift Full Load Pounds	Chain Overhaul to Lift Load 1 Foot Feet
C	1/2	8	12 1/4	9	50	23
C	1	8	14 3/4	4 1/2	75	32
C	1 1/2	8	14 3/4	4	90	44
CD	2	9	18 1/2	2 1/4	75	64
CD	3	10	18 1/2	2	90	88

*Including hand and load chain. †Full load.



Coffing Power Pike Poles

This pole is built of two pieces of galvanized pipe, one telescoping the other. Power is obtained through the use of a Coffing Load Binder or Safety-Pull Hoist.

For straightening leaning poles one man, with this tool, can do the work of from two to six men.

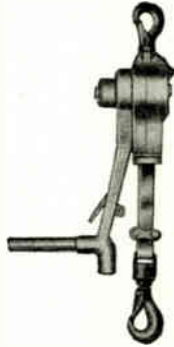
Pole has a heavy steel base. Top cannot slip off pole.

Load binder or hoist can be used for many other purposes.

Height: minimum, 8 feet 2 inches; maximum, 11 feet 7 inches.

Weight, 32 pounds.
Complete with Model A Load Binder.....each \$29.00
Pole Only.....each 14.00

Coffing Light Line Pullers



A tool for pulling telephone and light wires. Built on the ratchet or crank principle.

Equipped with a special steel load tape, 12 feet long. This tape has the advantage of being compact and strong. Has tensile strength of 2,500 pounds.

Although rated at 400 pounds, this puller is factory tested at 100% over rated capacity.

Weight, 5 pounds.
Each.....\$16.00

Coffing Load Binders



Drop-forged steel hooks with swivels on both ends. The take-up is 3/8 inch to each stroke of the handle.

If load becomes loose, it can be bound tight simply by drawing on lever. After load is taken off chain, both levers can be tripped at once and chain can be pulled through binder free.

Can also be used as a hoist and for stretching wire or cable.

Model.....	A	F
Load Binder.....each	\$15.00	\$20.00
Super Attachment (Special Iron Block).....each	4.75	6.25
Extra Chain.....per lifting ft.	.90	1.60
Rated Capacity.....tons	2	3
Standard Lift.....feet	2	2
Standard Chain.....feet	2	2
Lifting Speed per Minute.....in.	36	48
Weight.....lbs.	11 1/2	24

Coffing Temporary Cross Arms

Built to stand hard usage. Weighs much less than a standard cross arm, and no line truck should be without at least one set.

No. 10-A



For electric work. Hooks are self-locking, made of certified malleable iron, large enough to hold line hose to prevent current from arcing.

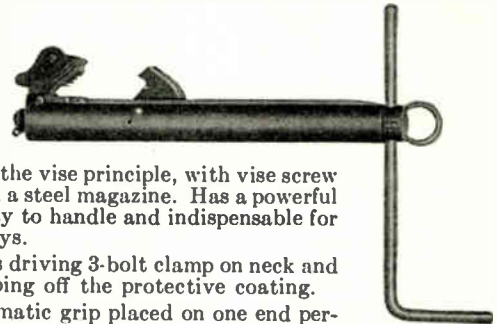
No. 10-A.....each \$13.50

No. 10-C



For changing cross arms on corners.
No. 10-C.....each \$11.50

Coffing Temporary Guy Clamps



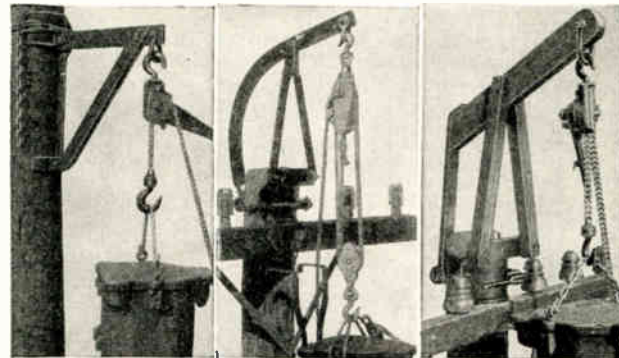
Built on the vise principle, with vise screw enclosed in a steel magazine. Has a powerful grip, is easy to handle and indispensable for necking guys.

Prevents driving 3-bolt clamp on neck and thus stripping off the protective coating.

An automatic grip placed on one end permits necking as close to the pole as desired without slipping.
Weight, 3 1/2 pounds.

Each.....\$5.00

Coffing Transformer Gins



Model ST

Model OST

Model WT

Tested to more than 3000 pounds without yielding.

Clamps on side of pole. Malleable iron and steel.
Model ST, Weight, 28 Pounds.....each \$14.00

Clamps securely to top of any size pole. Made of special spring steel, angle iron legs and malleable iron clamp.
Model OST, Weight, 33 Pounds.....each \$14.00

Main body and legs made of seasoned hickory, bolted to malleable iron clamp. Non-conductor of electricity.
Model WT, Weight, 28 Pounds.....each \$14.00

No. 102-1 Klein's Splicing Clamps



Arranged with 5 round holes for bare wire. For copper wire Nos. 8, 10, 12, 14, 16, A.W.G. For iron wire Nos. 10, 12, 14, 16, 18, B.W.G. Length, 8 inches.

No. 102-1.....each \$5.00

No. 102-3 Klein's Splicing Clamps



Large hole can be used for guy wire or messenger strand. Copper wire Nos. 2, 4, 6, 8, 10 and 12 A. W. G. Iron wire Nos. 4, 6, 8, 10 and 12 B. W. G.

No. 102-3, 10¾-Inch. Wt. per Doz., 16¾ lbs. each \$6.40

No. 102-30 Klein's Splicing Clamps



Holes reversed for those who prefer this arrangement.

Copper wire Nos. 2, 4, 6, 8, 10, 12 A. W. G. Iron wire Nos. 4, 6, 8, 10, 12, 14 B. W. G. No. 102-30, 10¾-Inch. Wt., per Doz., 15 lbs.each \$6.40

No. 102-48 Klein's Splicing Clamps



Largest hole convenient to bring together guy strand before applying a three bolt clamp.

Copper wire Nos. 0, 2, 4, 6, 8 A. W. G. No. 102-48, 10¾-Inch. Wt., per Doz., 15 lbs.each \$6.40

No. 105-15 Klein's Splicing Clamps For Twisting Double Tube Sleeves



For copper sleeves Nos. 8, 10, 12, 14, 17, A.W.G. For iron sleeves Nos. 10, 12, 14, 16, 19, B. W. G. No. 105-15, Size 8-inch.each \$5.30

No. 105-17 Klein's Splicing Clamps



Has five sets of chamber for twisting double tube sleeves. For copper sleeves Nos. 6, 8, 10, 12, 14, 17, A.W.G. For iron sleeves Nos. 8, 10, 12, 14, 16, 19, B. W. G. No. 105-17, Size 10¾-inch.each \$6.40

No. 105-31 Klein's Splicing Clamps



Three double chambers for twisting Nos. 10 and 12 A. W. G. sleeves, Nos. 12, 14, and 17 N. B. S. sleeves. No. 105-31, 8¾-Inch. Wt. per Doz., 5¾ lb.each \$5.30

No. 132-15 Klein's Combination Wire and Sleeve Clamps



The unusual range of wire and sleeve sizes covered by this clamp makes it practically a universal tool for telegraph, telephone and power line work. Has 5 round holes for twisting bare wire and an oval opening for guy wire or messenger strand. Copper wire Nos. 4, 6, 8, 10, 12, A.W.G. Iron wire Nos. 6, 8, 10, 12, 14, B. W. G. Strand opening .437x.624.

Reverse side has 5 chambers for twisting double tube sleeves. Copper sleeves Nos. 6, 8, 10, 12, 14, 17, A.W.G. Iron sleeves Nos. 8, 10, 12, 14, 16, 19, B. W. G.

Hammer forged from high grade crucible tool steel. Oil tempered, polished head and black handles.

Weight, per dozen, 18 pounds. No. 132-15 Size 11¼ inches.each \$9.10

No. 132-46 Klein's Wire and Sleeve Clamps



One side for double tube copper sleeves Nos. 4, 6, 8, 10, and 12 A. W. G. Other side for copper wire Nos. 4, 6, 8, 10, and 12 A. W. G.

No. 132-46, Weight per Doz., 17¾ Lbs.each \$9.10

No. 132-12 Klein's Combination Wire and Sleeve Clamps



For telephone and telegraph general line and trouble work. This clamp has four round holes for twisting bare wire.

Copper wire Nos. 6, 8, 10, 12, A.W.G. Iron wire Nos. 8, 10, 12, 14, B. W. G. The reverse side has four double chambers for twisting sleeves.

Copper sleeves Nos. 8, 10, 12, 14, 17, A.W.G. Iron sleeves Nos. 10, 12, 14, 16, 19, B. W. G. Hammer forged from high grade crucible tool steel. Oil tempered, polished head and black handle. Weight per dozen, 11 pounds. No. 132-12, Size, 9 inches.each \$6.70

No. 132-30 Klein's Combination Wire and Sleeve Clamps



Sleeve openings are for N.B.S. and B.W.G. sizes 9 and 8 respectively. Remaining five openings cover range of wire sizes used on railroad signal and telegraph work.

No. 132-30, Size, 11¼ In., Wt. per Doz., 18 Lb.each \$9.10

No.132-48 Klein's Copperweld Sleeve Clamps



This clamp has four chambers for twisting single tube (oval) sleeves used for making joints on copperweld conductors sizes 4A, 6A, 8A, and 3 No. 12. These chambers also accommodate single tube (oval) sleeves as in following table:

Copperweld Size No.	Solid B&S Copper No.	Strand B&S Copper No.	Copperweld Size No.	Solid B&S Copper No.	Strand B&S Copper No.
4A	1	2	8A	4	5
6A	3	4	3 No. 12	5	6

Swing latch holds head securely closed while joint is twisted preventing slippage or burning which might develop otherwise from bowing of handles when twisting larger sleeves.

No. 132-48, Size, 11½ In., Wt. per Doz., 18 Lb.each \$10.60

No. 132-39 Klein's Strand and Wire Holding Tools



This tool serves as a temporary clamp to hold together two sections of strand or wire while placing permanent clamps or splicing and serving.

Openings will fit: 7/16-inch strand (16000-lb. Bell System); 3/8-inch strand (10000-lb. Bell System); 1/2-inch strand (6000-lb. Bell System); 3/8-inch strand (2200-lb. Bell System); 3/4-inch solid No. 12 B.W.G. iron or No. 10 B. & S. copper wire; and 3/2-inch solid No. 13 B.W.G. iron or No. 11 B. & S. copper wire.

Hammer forged from high grade tool steel. Polished head and handles temper blued.

Weight per dozen, 18 pounds.

No. 132-39, Size, 11 1/4 Inches.....each \$9.10

No. 132-47 Klein's Wire and Sleeve Clamps



For single tube or oval copper sleeves. Nos. 2, 4, 6, 8, and 104.

Hinge has stop to prevent handles from opening beyond point convenient for clamping on sleeve.

No. 132-47, Weight per Doz., 18 Lbs.....each \$10.60

No. 132-74 Klein's Wire and Sleeve Clamps



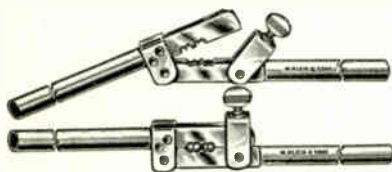
Has three special chambers for twisting single tube or oval (Memco) sleeves Nos. 2, 4, and 6; also an oval (hog) hole .437x.624 for guy strand.

Chambers or openings are a modified figure eight shape, giving a secure hold which prevents burning sleeve when joint is twisted. Swing latch overcomes any spring in handle which might otherwise develop when used on larger sleeves. Stop in hinge prevents handles from opening beyond the point convenient for clamping onto the sleeve.

Hammer forged from high grade tool steel, polished head, temper blued handles. Size, 11 1/2 inches.

No. 132-74, Weight per Dozen, 16 Pounds.....each \$10.60

No. 107-20 Klein's Di-Stock Sleeve Twisters



For all types of oval or double tube copper or aluminum sleeves, from No. 4 B&S solid to No. 3/0 B&S strand. Tubular handles, 7/8

inch diameter, threaded onto head. Readily attached or removed. Space between yokes, 3 inches, usually sufficient for three sleeve openings. Head readily and securely tightened onto sleeve by thumb nut operating in hinged yoke. Central position of head makes for ease in keeping sleeve straight while twisting joint and provides ample leverage. Held in blank and finished with sleeve openings as ordered.

Length overall, 23 1/2 inches. Weight each, 3 1/4 pounds.

No. 107-20.....each \$20.60

No. 107-34 Klein's Di-Stock Sleeve Twister



A hand operated cam lever closes the head securely on the sleeve—no thumb screws to bother with.

Tubular handles are furnished.

No. 107-34, weight each, 9 Lbs.....each \$30.00

Klein's Chicago Grips

Main body piece and lever are forged steel. Draw parts are wrought steel. Gripping jaws are machined smooth.

No. 1613—For Bare Wire



Bronze lining of jaws prevents slippage and consequent surface abrasion of conductor or strand.

No.	Each	B. & S. WIRE SIZE		Approx. Max. Open. In.	Wt. Lb.
		Maximum	Minimum		
1613-30	\$4.00	6 Solid (.162")	12 Solid (.081")	.22	1 1/2
1613-30B	6.70	Same as above, with Bronze Lined Jaws			
1613-40	7.10	0 Strd. (.373")	10 Solid (.102")	.44	3
1613-40B	12.00	Same as above, with Bronze Lined Jaws			
1613-50	12.00	4/0 Solid (.460")	6 Solid (.162")	.52	8
1613-50B	20.00	Same as above, with Bronze Lined Jaws			
1613-50A	12.00	4/0 Strd. (.552")	6 Solid (.162")	.62	8
1613-50AB	20.00	Same as above, with Bronze Lined Jaws			

No. 1611—For Insulated Wire



Similar to No. 1613, but with the necessary extra width in jaws "lipped" out to avoid unnecessary weight.

The upper jaw has saw-tooth gripping notches.

No.	Each	B. & S. WEATHERPROOF WIRE SIZE		Approx. Max. Open. In.	Wt. Lb.
		Maximum	Minimum		
1611-20	\$6.70	4 Solid (.391")	10 Solid (.250")	.50	3
1611-30	8.40	1 Solid (.500")	6 Solid (.313")	.56	3 3/4
1611-40	13.30	2/0 Strd. (.672")	1 Solid (.500")	.75	7 1/4
1611-50	13.30	4/0 Strd. (.860")	2/0 Solid (.672")	.94	7 3/4

No. 1611 Series can be furnished with bronze lined jaws to special order. Order as 1611-20B, 1611-30B, etc.

Klein's Chicago Grips For Aluminum Cable Steel Reinforced



Both gripping jaws are smooth. Safe load up to 8,000 pounds.

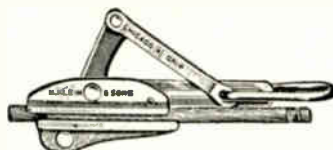
Weight, 7 1/2 pounds.

No.	Each	For Cable	Approx. Maximum Opening Inches
1626-39B	22.70	With Bronze Lined Jaws.....	.75
1626-40	17.80	4/0 to 500,000 C.M., A.C.S.R.....	.97
1626-40B	22.70	With Bronze Lined Jaws.....	.97
*1626-AB	28.90	With Bronze Lined Jaws, 3/0 to 300,000 C.M., A.C.S.R.....	.75

*Furnished to order. Alloy steel, heat treated.

Klein's Chicago Grips

For Hollow Core and Other Large Diameter Conductors



In stock at factory in blank and finished to fit any diameter conductor up to 1 1/2 inches. Jaws lipped out to avoid excess weight.

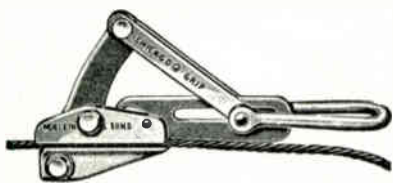
Forged from alloy steel, heat treated. Bronze lined jaws.

Maximum safe load up to 25,000 pounds.

No.	Each	FOR CABLE			Max. Open. In.	Approx. Wt. Lb.
		Hollow Conductor C.M.	Copper Strand C.M.	A.C.S.R. C.M.		
1628-30B	\$120.00	350,000-	550,000-	477,000-	1.35	28
		1,000,000	1,250,000	1,033,500		
1628-40B	\$126.70	1,000,000-	1,250,000-	1,033,500-	1.60	32
		1,250,000	1,750,000	1,590,000		

Klein's Improved Chicago Grips

For Messenger, Guy Strand and Conductors
Up to 1/2-Inch Diameter



For use on No. 4 B.&S. solid copper to 4/0 B.&S. 7-strand copper; and No. 6 to 3/0 A.C. S.R.

Forged from alloy steel, heat treated.

The jaws have been lengthened and leverage increased.

Maximum opening, .58 inch. Safe load, 8,000 pounds.

Approximate weight 6 pounds.

No. 1628-5, without Bronze Lined Jaws.....each \$14.00

No. 1628-5B, with Bronze Lined Jaws.....each 17.50

Klein's Chicago Grips

For Messenger and Guy Strand, Heavy Cable, Etc.

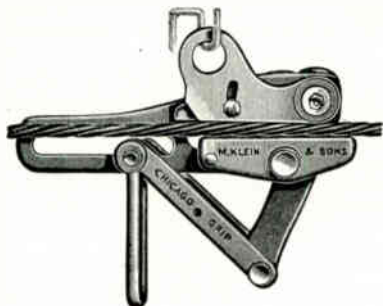


Forged from alloy steel, heat treated. Gripping jaws are machined smooth. Safe load, 15,000 pounds.

No.	Each	FOR CABLE		A.C.S.R. No.	Max. Open. In.	Approx. Wt. Lb.
		Galv. Steel Strand In.	Copper Strand			
1628-16	\$40.00	5/16	1/0 B.&S.- 300,000 C.M.	2-4/0	.69	15 1/2
*1628-16B	46.70	5/8	"	"	.69	15 1/2
*1628-16BP	53.30	...	1/0 B.&S.- 550,000 C.M.	2- †477,000	1.06	17

*With bronze lined jaws. †C. M.

Klein's Hot Line Chicago Grips



Designed especially for use on hot line work. An eye integral with safety latch provides ready means for placement with hot line stick.

Forged from alloy steel, heat treated. Bronze-lined jaws.

Safe load 1628-3BH up to 4,000 pounds; 1628-5BH, 8,000 pounds.

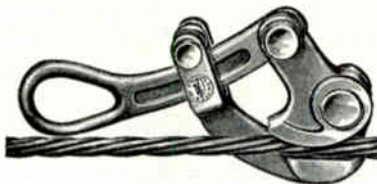
No.	Each	For B.&S. Wire	Max. Open. In.	Approx. Wt. Lb.
1628-3BH	\$12.80	1/0 Strand to 10 Solid	.44	3
1628-5BH	22.00	4/0 Strand to 4 Solid	.58	6

Klein's Chicago Grips

With Bronze Lined Jaws

Construction engineers are demanding grips that will not slip under heavy loads and which will not damage the conductor or strand. These requirements are met by welding a lining of bronze into the jaws of standard Chicago Grips, indicated by "B" following catalog number.

Klein's Haven's Steel Grips

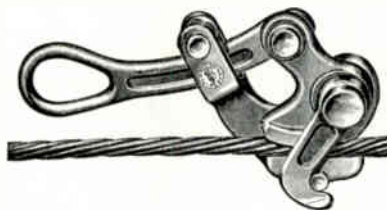


All parts are solid steel drop forgings, heat treated. Eye is pear shaped, 7/8 inch and 1/8 inch wide, and a roller fitted to body yoke makes motion free and allows

load to come on smoothly. Instantaneous hold, yet a shake on tackle rope releases grip. Will not slip due to hand cut serration in face of eccentric. Galvanized finish.

No.	1604-10	1604-20
Each.....	\$3.80	5.60
For Wire Size, and Smaller.....	No. 4 B.&S.	1/2 In.
Approx. Maximum Opening...inches	15/64 (.24)	17/32 (.53)
Approx. Minimum Opening...inches	1/16 (.06)	3/64 (.14)
Weight per Dozen.....pounds	12	28 1/2

Klein's Improved Haven's Grips



For wires 3/4 inch to No. 2 B.&S. Approximate maximum opening, 25/32 inch (.78); approximate minimum opening, 1/32 inch (.22). Parts are alloy steel drop forgings properly heat treated.

For use on solid or strand wires. Swing latch engages stud on lower jaw preventing any distortion of body or cross bolt under load. For use on trolley wire and weatherproof. Can be readily adapted, at slight extra cost, for hot line work on weatherproof (insulated) conductors. Swing latch holds tool on line in position for pull. Eye is pear shaped 1 1/4 in. wide. Hand cut serration in face of eccentric assures a hold that cannot slip. Galvanized finish.

No. 1625-20—Weight per Dozen, 45 Pounds...each \$13.10

No. 1700-30 Klein's Chicago Linemen's Tools



This tool is a combination of No. 1613-30 Chicago Grip and No. 1702-20 Howes Wire Tool. It is largely used by telephone companies.

For No. 6 wire and smaller down to No. 13. Other sizes of grips can be furnished in this combination to order only.

Weight, 4 pounds.

No. 1700-30.....each \$14.10
Strap for No. 1700-30, 1 1/4 In. x 7 Ft.....each 4.00

No. 1702-20 Klein's Howes Wire Tools



The strap is harness leather 1 1/4 inches wide and 7 feet long. At one end a forged steel swivel hook is provided with opening to permit anchoring round insulator pin. The forward end has a locking device to hold the load at any distance and is so arranged that a wire grip can be readily attached.

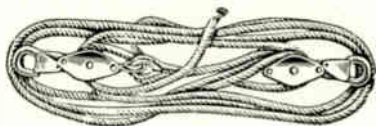
The metal parts are galvanized.

Weight per set, 2 1/2 pounds.

No. 1702-20, Single Purchase.....each \$10.00
Extra Strap, 1 1/4 Inches x 7 Feet.....each 4.00

No. 1802 Klein's Heavy Block Tackles

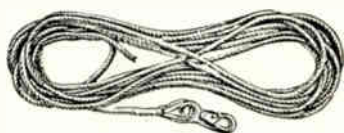
Drop Forged Hooks and Eye



Consist of two special double sheave blocks. Spring guarded snap hooks do away with taping. Pulleys are bronze bushed and self lubricating. Furnished with 30 feet best quality Manila rope, 4 strand.

No.	1802-40	1802-50	1802-60
Each	\$20.70	23.30	24.40
Size Rope.....inches	1 1/2	5/8	3/4
Weight Each.....pounds	15 1/2	18	19

No. 1803 Klein's Hand Lines



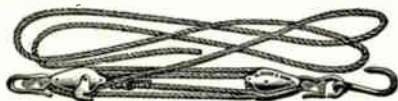
Best quality manila rope which will not twist. Spliced to eye of snap hook with galvanized steel thimble. Snap hook is drop forged with round eye, opens to 3/4 inch.

Complete with 3/8-inch, 4-strand manila rope and No. 443-A snap.

No. 1803-60, With 75-Foot Rope, Weight Each, 3 1/2 Pounds.....	each	\$8.50
No. 1803-120, With 120-Foot Rope, Weight Each, 5 1/4 Pounds.....	each	11.20

Klein's Self-Locking Block Tackles

No. 1802-30



Consists of light steel galvanized shell block, fitted with a snubbing hook to lock load in any position. Convenient and time-saving for man on the pole, also in handling a vertical load. To lock load, pull luff rope under hook. To release, pull rope. Block is arranged with spring guard snap hooks. When pulling up wire to make a split it may be used with two grips attached to the snaps, or with drop forged hook No. 258 to anchor to an insulator pin or other convenient anchorage. Hook is specially shaped to fit under double petticoat insulator on cross arm. Rope will not twist.

Furnished with 25 feet of 3/8-inch, 4-strand manila rope and detachable anchor hook. Shipped unassembled.

No. 1802-30.....	each	\$7.20
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Parts

No. 258 Anchor Hook.....	each	\$1.50
25-Foot, 3/8-Inch, 4-Strand Rope.....	each	1.50
No. 267 Plain Block Only.....	each	2.70
No. 268 Snubbing Block Only.....	each	3.30

No. H-1802-30—With Guarded Snaps

Same as No. 1802-30 except that snaps are guarded. The nose of each hook has been lengthened to extend over the latch or keeper. This does away with any necessity of taping snaps a'fer come-along has been engaged.

Furnished with 25 feet of 3/8-inch, 4-strand manila rope and detachable anchor hook. Shipped unassembled.

No. H-1803-30.....	each	\$8.30
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Parts

No. 258 Anchor Hook.....	each	\$1.50
25-Foot, 3/8-Inch, 4-Strand Rope.....	each	1.50
No. H-267 Plain Block Only.....	each	3.50
No. H-268 Snubbing Block Only.....	each	4.50

No. 443-A Klein's Snaps For Hand Lines and Light Hoists



Can be used on all light hoisting, for roofers, etc. Drop forged with galvanized finish. Hook and eye are integral drop forging. Duck bill nose closes around latch.

Will carry loads up to 2000 pounds. When fitted to a 4-inch tackle block, it provides an ideal means for connecting with come-along; no taping is necessary.

Opening will take up to 3/4 inch. Eye, 1 1/8 inches. Length overall, 5 1/2 inches.

Weight per dozen, 6 1/2 pounds. No. 443-A.....each \$2.50

No. 258 Klein's Anchor Hooks for Tackles



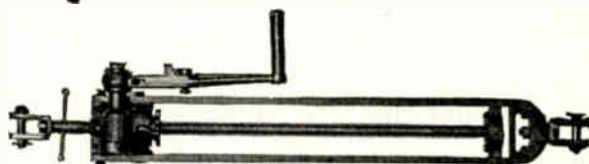
Solid steel drop forging. Overall length, 5 1/2 inches x 3 1/4 inches across the hook. Size opening, 2 inches; inside diameter of eye, 5/8-inch.

Galvanized finish. Weight per dozen, 4 pounds. No. 258.....each \$1.50

Matthews Quick Release Slack Pullers



No. 730



No. 732

Enables one man to do the work of four when taking the slack out of guy strand, messenger wire or changing strain insulators, or for splicing trolley wire, telephone or power cable under tension; also used for pulling back underground cable. Takes the place of block and tackle. One man can easily pull 3000 pounds with the No. 730, 6000 pounds with the Nos. 731 or 732, and 10000 pounds with the Nos. 7100 or 7110. No slack is lost in dead ending as strain is held to the exact point pulled.

With the new quick release feature, when the entire take-up has been used, the wire is temporarily dead ended and the lock released. This permits the slack puller to be immediately extended to its maximum or any intervening length.

No.	Description	Ship. Wt. Lb.	Each
730	Maximum Take-Up, 19 Inches.....	17	\$24.00
731	Same as No. 730, Except That Clevis is Substituted for Hook.....	17	26.00
732	Same as No. 731, Except That it Also Has Quick Take-Up Feature.....	17	28.00
7100	Maximum Take-Up, 27 Inches.....	45	33.00
7110	Same as No. 7100, Except That it Also Has Quick Take-Up Feature.....	45	35.00

The 730, 731 and 7100 do not have the quick take-up feature.

Chance Linemen's Socket Wrenches



Fits heads and nuts of all standard bolts for pole and guy work.

Drop forged.

No.	154	234
For Nut Size.....inches	5/8 & Smaller	3/4 & Smaller
Net Weight.....pounds	2 1/2	3 1/4

No. 3109-20 Klein's Combination Steel Lag Screw Wrenches



This wrench is forged from select bar steel. The slot is formed in a cross shape and will fit machine bolts, nuts or lag screws from $\frac{3}{8}$ inch to $\frac{5}{8}$ inch. The small end of the wrench is arranged for $\frac{5}{16}$ -inch machine bolts or lag screws. The round hole allows the end of a bolt to come through as the nut is run on.

The jaw is wider at its upper portion and when this wrench is put on a nut or bolt the tendency is to draw the bolthead or nut into the wrench and prevent slipping off. Weight, per dozen, 24 pounds.

Nos. 3109-20 Length, 13 $\frac{1}{2}$ Inches..... each \$4.60

No. 3146 Klein's Linemen's Wrenches Bell System Type



Wrench is particularly adapted for use on heavy 3-bolt guy clamps on which the clearance for a wrench is limited.

This wrench is forged of select bar steel, heat treated, and is of the open end type with two openings of a different size at each end. There is a hole provided at the larger end so that the wrench may be used for turning in standard pole steps.

Size, 13 inches. Weight per dozen, 23 pounds.

No.	3146	3146-A
Each.....	\$4.50	4.50
For Size Hardware.....inches	$\frac{5}{8}$	$\frac{3}{4}$
Openings on Larger End.....inches	$1\frac{1}{8}$ and $1\frac{5}{16}$	$1\frac{5}{16}$ and $1\frac{5}{16}$
Openings on Smaller End.....inches	$1\frac{3}{16}$ and $\frac{9}{16}$	$\frac{5}{8}$ and $\frac{7}{8}$

No. 4638 Graybar Lineman's Chipping Hammers

Bell System Type



Drop forged oil tempered, specially made for line construction work.

The face is suitable for general use and the pein is suitable for chipping brick work, concrete, stone, etc., or for riveting.

Length over all, 16 inches.

Weight of head, 3 $\frac{1}{2}$ pounds. Weight of hammer complete, per dozen, 48 pounds.

Price, No. 4638..... each \$2.30

No. 13 Graybar Lineman's Double Faced Hammers

Bell System Type



Drop forged oil tempered head with special short neck designed to strike a heavy accurate blow in a confined space.

Length over all, 15 inches.

Weight of head, 2 $\frac{1}{4}$ pounds. Weight of hammer complete, per dozen, 35 pounds.

Price, No. 13..... each \$2.00

No. 201 Klein's Side Cutting Pliers



For use on bare and insulated wire. Curved handles. Powerful leverage and keen cutting knives.

No.	201-5	201-6	201-7	201-8	201-9
Each.....	\$4.60	4.90	5.60	5.90	7.60
Size.....inches	5	6	7	8	9

No. 212 Klein's Side Cutting Pliers With Sleeve Joint Twisters



Diamond Special for use on bare and insulated wire, with sleeve joint twister.

No.	212-6	212-7	212-8
Each.....	\$5.60	6.00	7.60
Size.....inches	6	7	8

No. 201 Klein's Side Cutting Pliers



Nose and all edges rounded and shoulder of head removed.

No.	201-5NE	201-6NE	201-7NE	201-8NE	201-9NE
Each.....	\$4.60	4.90	5.60	5.90	7.60
Wt., Doz. lb.	3	5 $\frac{1}{4}$	7 $\frac{1}{4}$	11 $\frac{1}{4}$	13 $\frac{1}{2}$

No. 212 N. E. Klein's Side Cutting Pliers

N. E. Type with Sleeve-Joint Twister



For use on bare and insulated wire by linemen, electricians and mechanics. Opening provided

for twisting double tube sleeve joints.

Polished head, handle temper blued.

Packed 6 in a standard package.

No.	212-6N.E.	212-7N.E.	212-8N.E.
Each.....	\$5.60	6.00	7.60
Size.....in.	6	7	8
Sleeve Opening, N.B.S.	14 & 17	14 & 17	12
Sleeve Opening, B.&S.	12(.045")	12(.045")	10(.104")
Weight per Dozen..lb.	5 $\frac{1}{4}$	7 $\frac{1}{4}$	11 $\frac{3}{4}$

No. 202 Klein's Oblique Cutting Pliers



Lap joint type. Cuts close. The narrow head permits its use in confined places.

Knives are perfectly fitted.

No. 202-5...ea. \$4.00
No. 202-6...ea. 4.30

No. 245 Klein's Oblique Cutting Pliers

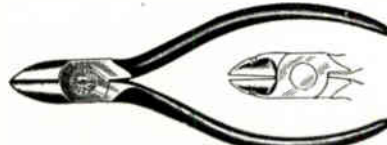


Can easily be carried in vest pocket.

For electricians, telephone men and switchboard builders.

No. 245-5, 5-Inch, Weight per Doz., 3 Lbs..... each \$4.00

No. 245-5-W Klein's Oblique Pliers



For removing acetate cellulose insulation from .050 and .058 wires.

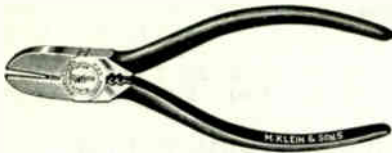
Has two W shaped notches at back of cutting knives.

Length, 5 inches.

No. 245-5-W, Weight per Dozen, 3 Pounds..... each \$4.70

No. 240-S Klein's Oblique Cutting Pliers

With Wire Stripping Notch and Sleeve Openings



For the use of electricians, telephone men, and switchboard builders. Stripping notch provides a means for crimping on .032-.025-inch single tube

copper sleeves often used in telephone work for splicing .032-inch bridle wire and .025-inch inside wire.

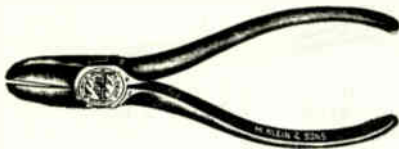
Size, 5 inches. Polished head, handle temper blued.

Weight per dozen, 3¾ pounds.

No. 240-5-S.....each \$4.50

No. 240 Klein's Oblique Cutting Pliers

With Wire Stripping Notch



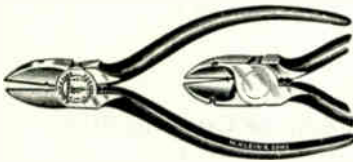
Has a notch in the cutting knives for stripping small wires. Notch is placed ⅜ inch from hinge and has diameter of .052 inch. Can be used for crimping single tube copper sleeves.

Polished head and temper blued handles. Packed 6 in box.

No.	240-5	240-6
Each.....	\$4.30	4.60
Size.....	5	6
Weight per Dozen.....	3¾	4

No. 202-SW Klein's Oblique Cutting Pliers

With W Stripping Notches, Sleeve Openings and Skinning Hole—Bell System Type



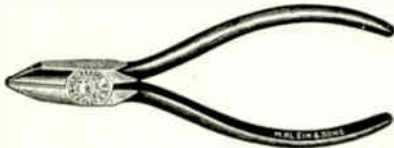
An all-purpose cutting tool for telephone installation and maintenance work. The W notches will slit acetate cellulose and other insulations from wires up to .058-inch o.d. A stripping hole .052-inch diameter is provided in blades which also provides means to crimp on .032 and .025 single tube copper sleeves. Sleeve openings in handles.

Size, 5½ inches. Polished head, handle temper blued.

Weight per dozen, 3¾ pounds.

No. 202-5SW.....each \$4.80

No. 202 Klein's Narrow Nosed Oblique Pliers

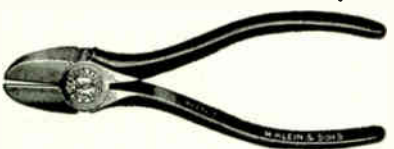


Plier has narrow hinge and pointed nose. For telephone or radio work.

Polished head, and handles temper blued.

No. 202-5A, 5-Inch Size; Wt. per Doz., 4 Lb.... each \$4.00
No. 202-6A, 6-Inch Size; Wt. per Doz., 4¼ Lb.... each 4.30

No. 242-6 Klein's Oblique Cutting Pliers



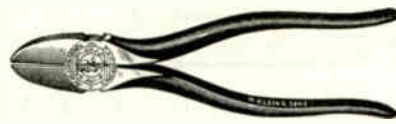
Heavy pattern.

For use where it is not necessary to reach into confined spaces.

No. 242-6, 6 Inch, Weight per Doz., 4¼ Lb.....each \$4.40

No. 220 Klein's Oblique Cutting Pliers

With Handform Handles



Made especially for automotive mechanics. Knives are close cutting and carefully matched for their full length.

Useful for pulling cotter pins, for choke wires, etc.

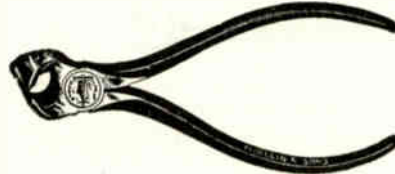
The Handform handles provide full leverage and comfort for continual use.

Size, 7 inches. Polished head, handle temper blued.

Packed 6 in a standard package.

No. 220-7.....each \$4.60

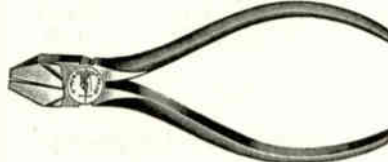
No. 232 Klein's End Cutting Pliers



Stout jaws and broad cutting knives.

No.	Each
232-5½	\$6.50
232-7	7.30

No. 235-6 Klein's Diagonal Cutting Pliers



Has long cutting knives. Head is narrow to permit use in confined spaces.

Has polished head, handles temper blued.

No. 235-6, 6 Inch, Weight per Doz., 4½ Lbs.....each \$6.40

No. 301 Klein's Long Nose Pliers

Without Cutters



For stripping insulated wire ends. Point, ⅜ inch round.

*Extra long nose, 2¾ in.

No. 301-5, 5-Inch Size; Wt. per Doz., 3¼ Lb...each \$3.40
No. 301-6, 6-Inch Size; Wt. per Doz., 3¾ Lb...each 3.70
*No. 301-7, 7-Inch Size; Wt. per Doz., 4¼ Lb...each 4.10

No. 203 Klein's Long Nose Side Cutting Pliers

With Cutting Knives



For stripping insulated wire ends. Point, ⅜ inch round.

*Extra long nose, 2¾ in.

No. 203-5, 5-Inch Size; Wt. per Doz., 3¼ Lb...each \$4.10
No. 203-6, 6-Inch Size; Wt. per Doz., 3¾ Lb...each 4.60
*No. 203-7, 7-Inch Size; Wt. per Doz., 4¼ Lb...each 5.00

No. 303-6 Klein's Long Needle Nose Pliers



Longnosepermits use in confined spaces. Has polished head and handles temper blued.

Weight per dozen, 3¾ pounds.
No. 303-6, Length 6 Inches.....each \$3.70

No. 317 Klein's Chain Nose Pliers Without Cutters



For general use. Size, 6 inches. Polished head, handles temper blued. Weight per dozen, 3½ pounds. No. 317-6 ea. \$3.70

No. 217 Klein's Chain Nose Pliers Side Cutting



With side cutting knives. Size, 6 in. Polished head, handles temper blued. Weight per dozen, 3½ pounds. No. 217-6 ea. \$4.60

No. 313 Klein's Heat-Coil Pliers



Particularly adapted for the removing of heat coils from switchboards and telephone terminals, as the points of the

nose are shaped to fit the coils. This tool is also serviceable in removing caps from batteries or from binding posts, as well as holding any cylindrical object.

- Size, 6 inches.
- Polished head, handles temper blued.
- Packed 6 in a standard package.
- Weight per dozen, 3¾ pounds.

No. 313-6each \$5.30

No. 305-6 Klein's Long Flat Nose Pliers



Has long wide flat nose. Inside of jaws left smooth if desired. Has polished head and

handles temper blued. Weight per dozen, 3½ pounds. No. 305-6, Length, 6 Incheseach \$4.10

No. 206-6 Klein's Long Flat Nose Side Cutting Pliers



Has long wide flat nose and cutting knives. Smooth jaws if desired. Has polished head and handles temper blued. Weight per dozen, 3½ pounds.

Price, No. 206-6, Length 6 Incheseach \$4.50

Klein's Long Flat Nose Spring Adjusting Pliers



Hollow ground on outside of jaws to reach between and grasp springs easily.

No. 311-5½, 5½ Inch, Weight per Doz., 3¼ Lbs. each \$4.50

No. 304-6 Klein's Long Duck Bill Pliers



For general use. Jaws are wider and heavier than those of flat nose pliers. Length, 6 inches. Has polished head and handles

temper blued. Weight per dozen, 3½ pounds. No. 304-6each \$4.10

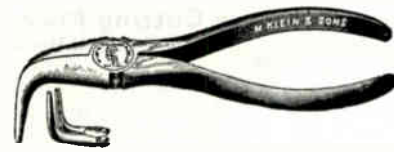
No. 205-6 Long Duck Bill Side Cutting Pliers



General use. Jaws are wider and heavier than those of flat nose plier. Has polished head and handles

temper blued. Weight per dozen, 3 pounds. No. 205-6, Length, 6 incheseach \$4.50

No. 302 Klein's Long Curved Nose Pliers



Angle is arranged to give full clearance and prevent skinning of knuckles.

Weight per dozen, 3 pounds.

No. 302-6, Length, 6 incheseach \$4.90

No. 316-S Klein's Long Nose Sleeve Pliers Bell System Type



Sleeve openings permit twisting No. 17 N.B.S. and smaller copper sleeves. Point, ½ inch round.

No. 316-S, 6-Inch Size; Wt. per Doz., 3¾ Lb.each \$4.50

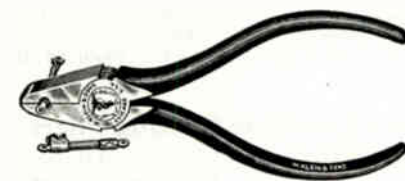
No. 301-C Klein's Long Nose Cord Crimping Pliers



For telephone switch board work; oval groove for crimping telephone cords. Point, ½ inch round.

No. 301-C, 6-Inch Size; Wt. per Doz., 3¾ Lb.each \$4.50

No. 039 Klein's Cord Tip Closing Pliers



The jaws of this tool are designed to permit its use as a hand press for closing cord tips such as W.E. 101 and 102. The circular opening in the jaws is correctly

sized to insure a perfect connection when the closure is completed.

- Size, 5 inches.
- Polished head, handles temper blued.
- Packed 6 in a standard package.
- Weight per dozen, 3 pounds.

No. 039each \$5.60

No. 203-8 Klein's Long Nose Cutting Pliers



Made for use with heavier gauge insulated wire.

The round nose is for forming loops and a flat space is provided ahead of the knife for holding objects securely or for cracking insulation. Lgth., 8 in.

No. 203-8, Weight per Doz., 8 Lbs.each \$7.10

No. 203-8N Klein's Long Nose Cutting Pliers

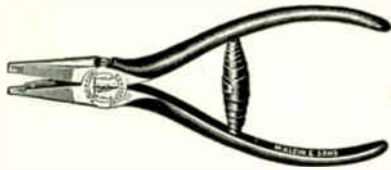


This plier is same as 203-8 but is fitted with stripping notch in knife. Notch is

regularly furnished to take No. 12 A. W. G. insulated wire but can be varied for other sizes to order. Lgth., 8 in.

No. 203-8N, Weight per Doz., 8 Lbs.each \$7.60

No. 301-6-VP Klein's Long Nose Pliers



For light cutting in spaces beyond the reach of regular cutting pliers. Used in radio shops. Has 1/4-inch knife at point. Length, 6 inches.

No. 301-6-VP, Weight per Dozen, 4 Poundseach \$5.10

No. 406-6 1/2 Klein's Slip Joint Pliers



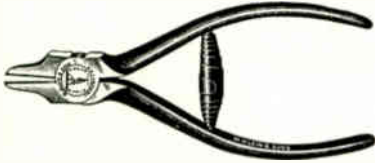
This plier embodies all the advantages offered by a tool of this type. Has a wire cutter and a screwdriver handle. Has

polished head and handles temper blued.

Weight per dozen, 6 pounds.

No. 406-6 1/2, Length, 6 1/2 Inches.....each \$2.50

No. 202-5-VO Klein's Oblique Cutting Pliers



Narrow Tapered Head

For light cutting in confined spaces. Used largely in radio tube shops. Volute spring keeps plier open.

Length, 5 1/2 ins.

No. 202-5-VO, Weight per Dozen, 4 Pounds.....each \$5.40

No. 407-7 Klein's Utility Slip Joint Pliers



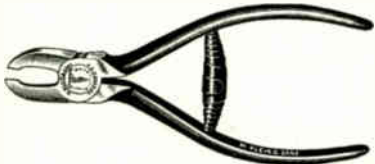
Heavy duty type plier which is adaptable as a pipe wrench or wire cutter. Has

sure grip jaws for irregular objects. Made of tempered tool steel; polished head, and handles temper blued.

Size, 7 inches. Weight per dozen, 7 pounds.

No. 407-7.....each \$3.00

No. 202-5-VC Klein's Oblique Pliers



Cutout Knives

For cutting at tip only. Used largely on radio tube construction. Volute spring keeps plier open.

Length, 5 1/2 ins.

No. 202-5-VC, Weight per Dozen, 4 Pounds.....each \$5.20

No. 408-8 Klein's Bent Nose Slip Joint Pliers

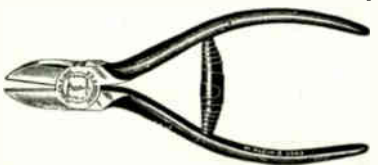


For use in difficult places. An excellent general purpose tool.

Has polished head and handles temper blued.

No. 408-8, 8 Inch, Weight per Doz., 8 Lbs.....each \$3.50

No. 202-5-AV Klein's Oblique Cutting Pliers



Narrow Head

For heavy cutting. Hammer forged from high grade tool steel. With volute spring for bench work.

No. 202-5-AV, 5 1/2-Inch, Weight per Doz., 4 Lb..each \$4.60

No. 1550-2 Klein's Xela Electricians' Knives

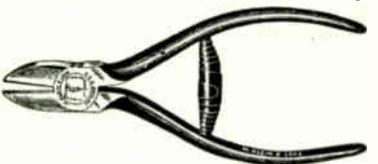


A handy combination for the electrician, combining an emergency screwdriver, a knife blade for cutting or stripping wire; safely locked so that it cannot close during use. The commendable features are a well-tempered blade, a strong joint, a solid well-proportioned hand fitting handle and a lock to keep the blade safely open, yet promptly releasable when it is desired to close the blades.

Screwdriver blade is locked when open; to unlock a slight side pressure of the thumb releases the lock and permits the blade to be closed readily.

No. 1550-2, Double Blade.....each \$2.70

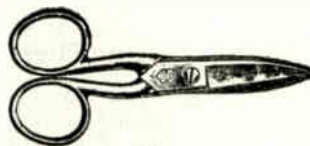
No. 245-5-V Klein's Oblique Cutting Pliers



For electricians, telephone men, etc. Hammer forged from high grade tool steel. With volute spring for bench work.

No. 245-5-V, 5-inch, Weight per Doz., 3 Lb.....each \$4.60

Xela Electrician's Scissors



Made of high grade steel properly tempered.

Has screw hinge.

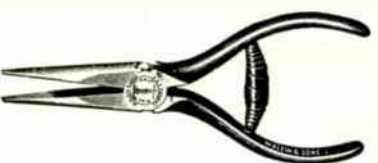
Nickel plated finish.

Size, 5 in.

Weight per dozen, 2 pounds.

No. 2100-5.....each \$1.70

No. 301-5-V Klein's Long Nose Pliers



Without Cutting Knives

Hammer forged from high grade tool steel. With volute spring for bench work.

No. 301-5-V, 5-Inch, Weight per Doz., 3 1/2 Lb...each \$4.50

No. 5139 Klein's Canvas Tool-Packs

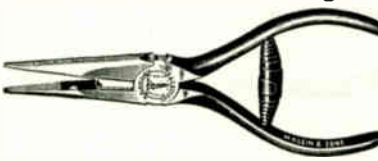


Made of sturdy, brown canvas. A heavy zipper instantly closes or opens the full length mouth. Especially useful for a selection of frequently used small tools.

Weight per dozen, 3 pounds.

No. 5139, Size, 6x12 Inches.....each \$1.50

No. 203-5-V Klein's Long Nose Cutting Pliers

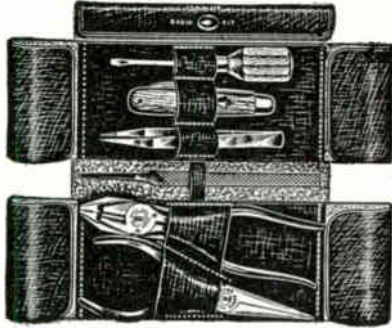


For production bench work where a combination of long jaws with cutting knives is required. Fitted with volute spring.

Length, 5 3/4 ins.

No. 203-5-V, Weight per Dozen, 2 3/4 Pounds.....each \$5.10

No. 1305-2 Klein's Inspectors' Tool Kits

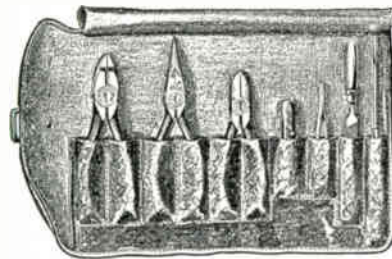


Solid black leather folding case strongly stitched, reinforced back. Fitted with one each of the following tools: No. 201-6 side-cutting plier; No. 301-5 long nose plier; No. 1550-2 Xela electricians' knife; 1 pair electricians' tweezers; 1 special file; 1 special screwdriver.

A handy assortment to fit the pocket.
Weight, 1½ pounds.

Price, No. 1305-2.....each \$15.00

Klein Tool-Kits



Designed for mechanics, service men and electricians.

Contains long nose plier, special side cutting plier, diagonal cutting plier, electrician's knife, a pair of electrician's tempered tweezers,

4½-inch file and a screw driver with insulated handle. All contained in a Keratol roll fastened with a strong strap and buckle.

No. 1305-33A.....each \$18.00

No. 5116 Klein's Detachable Plier Holsters



Made of heavy harness leather with loop to slip over belt.

Carries 7, 8 or 9-inch side cutting pliers.

Mouth of pocket is framed to hold open position permanently.

Length, 10 inches.

Weight per dozen, 6 pounds.

Price, No. 5116.....each \$3.00

Nos. 5107 and 5112 Leather Plier Pockets



Made of good quality leather. Has slits through which belt is inserted. No. 5112 is the same as No. 5107 except that plier does not protrude.

No. 5107, Weight per Dozen, 2½ Pounds.....each \$1.30

No. 5112, Weight per Dozen, 2½ Pounds.....each 1.30

No. 5111 Klein's Hip Pocket Tool Cases



This case is suitable for carrying pliers or other tools in hip pocket.

Prevents cutting of clothes, or possible injury to the person.

Made of black leather.

Weight per dozen, 5½ pounds.
No. 5111, Size, 5x7 Inches.....each \$2.00

Klein's Combination Tool Pockets



This pocket is made of heavy harness leather. Opening at bottom prevents accumulation of dirt or water. Top flap of double thickness leather is for riveting to belt.

Space provided for pliers fits 6, 7, 8 and 9-inch side cutting pliers.

No. 5118-K For Pliers and Knife

Weight per dozen, 7½ pounds.

No. 5118-K, Size, 4¾x8 In.....ea. \$2.50

No. 5118-S For Pliers and Screwdriver

Weight per dozen, 5½ pounds.

No. 5118-S, Size, 4x8 In.....ea. \$2.10

No. 5118-R For Pliers and 6-Foot Rule

Weight per dozen, 7½ pounds.

No. 5118-R, Size, 4¾x8 Inches.....each \$2.50

Klein's Rubber Glove Pouches



Scotch chrome leather pocket for carrying rubber gloves. Comes equipped with snap and Dee ring, ready to attach to body belt.

No.....	5120-9	5120-15
Each.....	\$4.00	\$5.30
Size, In.....	7½x9	7½x15
Weight per Doz.....	4½	7

No. 1515-1 Klein's Cable Sheath Splitting Knives



Cutlery steel blade, oil tempered. Riveted, harness leather handle.

Weight per dozen, 12 pounds.

No. 1515-1.....each \$3.50

Klein's Skinning Knife for Linemen



Shape of blade has been carefully considered to make it a real safety tool.

Half hard rubber handle is molded on securely and provides adequate insulation and a positive grip.

Hole in handle is through the solid rubber.

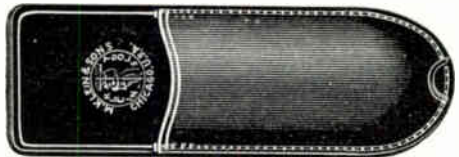
Blade, 3 inches long, 8 inches long overall.

Weight, per Dozen.....pounds 4¼

No. 1560-3.....each \$3.00

Skinning Knife Sheath

For No. 1560-3 Knife



Can be riveted to belt or carried in hip pocket. Opening at bottom to prevent collection of dirt and permit escape of water.

Weight per dozen, 4 pounds, Size, 3x9 inches.

No. 5163.....each \$1.70

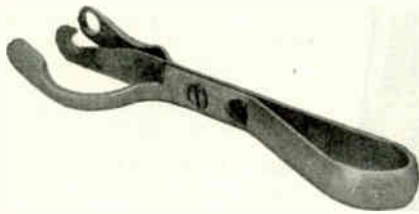
No. 4 Ideal Cable Rippers



For use on non-metallic sheathed duplex cable or lead covered cable. Ripper is squeezed onto the cable and pulled, ripping the cable with one simple operation. Can also be used for ripping the outer sheathing of other cords, lead cables, etc., where outside diameter is not greater than ½ inch.

No. 4.....each \$3.36

No. R62267 Braid Strippers



For use in stripping braid from switchboard cable.

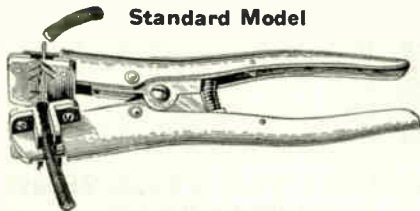
This stripper consists of a steel blade slotted at one edge and sharpened. Assembled in a metal band by means of two screws.

Size, 5⁵/₈ inches.

No. R62267.....each

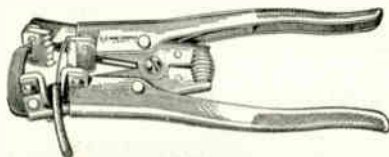
Ideal Wire Strippers

Standard Model



For stripping solid wires; also used for stranded wire. Cutting edges are shielded. Blind centers of the V-notches on blades prevent cutting or scarring of wire.

Automatic Model



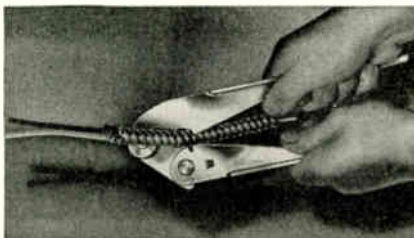
For stripping stranded wire; used equally well on solid wire.

Lever stops return of arms until wire is removed after stripping, then they are quickly snapped back to normal. Lever will not operate unless wire with insulation .050 inch or larger is inserted between grippers. When no wire is inserted, lower gripper moves upward when handles are squeezed, pushing trigger and lever up and out of action.

Specifications

No	0	1	2	3
Standard Model.....each	\$5.00	\$5.00	\$5.00	\$5.00
Automatic Model.....each	6.00	6.00	6.00	....
For Stripping Solid or Stranded Wire.....gauge	20-30	12-18	10-16	8-10
Shipping Weight.....pounds	1 ¹ / ₂	1 ¹ / ₂	1 ¹ / ₂	1 ¹ / ₂
Extra Blades.....per set				\$.90

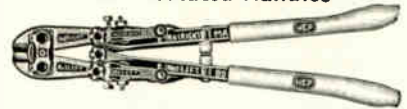
Ideal BX Armor Cutters



This cutter is a lightweight pocket tool which cuts armor perfectly in one operation. For use on either two or three wire, No. 12 or No. 14 cable. Eliminates nicked wires and shorts.

Each.....\$3.45

Porter Electric Wire Cutters With Insulated Handles



Cuts wire and cable insulation. Cutting capacity limited to opening at heel of jaws. Will not cut hardened material.

No.	0	1	2	3
Rigid, Complete.....each	\$8.25	\$10.75	\$12.75	\$16.50
Swivel, Complete.....each	10.50	13.25	15.75	.....
Cutterhead, Complete.....each	3.40	4.30	5.20	6.30
Jaws.....per pair	2.70	3.50	4.30	5.30
Rubber Handle Covers.....per pair	3.10	3.60	4.60	5.60
Approx. Length.....inches	20	26	32	37
Jaw Opening.....inches	5 ⁵ / ₈	3 ³ / ₄	1 ¹ / ₈	1 ¹ / ₄
Cap. Solid Copper Wire.....inches	3 ³ / ₁₆	3 ³ / ₈	1 ¹ / ₂	5 ⁵ / ₈
Approx. Weight, Rigid.....pounds	3 ¹ / ₂	5 ³ / ₄	9 ¹ / ₄	13 ¹ / ₂
Approx. Weight, Swivel.....pounds	4 ¹ / ₄	6 ³ / ₄	10 ¹ / ₂	.....

Porter Electric Wire Cutters Not Insulated



With wide jaw opening for heavily insulated wire on lines which are dead.

No.	0	1	2	3
Rigid, Complete.....each	\$5.75	\$7.25	\$9.00	\$11.50
Swivel, Complete.....each	8.00	9.75	12.00	.....
Cutterhead, Complete.....each	3.40	4.30	5.20	6.30
Jaws.....per pair	2.70	3.50	4.30	5.30
Approx. Length.....inches	19	25	31	36
Jaw Opening.....inches	5 ⁵ / ₈	3 ³ / ₄	1 ¹ / ₈	1 ¹ / ₄
Capacity Solid Copper Wire.....in.	5 ⁵ / ₁₆	3 ³ / ₈	1 ¹ / ₂	5 ⁵ / ₈
Approx. Weight, Rigid.....pounds	3 ¹ / ₄	5 ¹ / ₄	8 ¹ / ₂	12 ¹ / ₂
Approx. Weight, Swivel.....pounds	4	6 ¹ / ₄	9 ³ / ₄	.....

Porter Storage Battery Cutters Not Insulated



For cutting neck of large power plant battery plates. Narrow nose and long cutting edges assure easy work and long service. Available with clipper cut or center cut jaws.

No.	1	2
Rigid, Complete.....each	\$11.25	\$18.00
Swivel, Complete.....each	13.75	21.00
Cutterhead, Complete.....each	8.50	14.25
Jaws.....per pair	7.75	13.25
Approx. Length.....inches	26	32
Jaw Opening.....inches	1 ³ / ₈	1 ¹ / ₈
Approx. Weight, Rigid.....pounds	5 ¹ / ₄	8 ¹ / ₂
Approx. Weight, Swivel.....pounds	6 ¹ / ₄	9 ³ / ₄

Porter Heavy Duty Shear Type Cable Cutters



For insulated cable. Two sharp edges avoid mashing or damaging cable strands.

Made in two types: FT, for regular cable, telephone office inside cable, fine stranded flexible conductors, not armored, and FH, for armored cable, stranded copper conductors No. 12, 3-wire BX, also for up to 500,000 cm. There are so many types of cable that it is advisable to submit samples to be cut.

No.	1	2	3
Complete.....each	\$6.50	\$7.50	\$8.50
Cutterhead, Complete.....each	5.00	6.00	7.00
Straight Blades.....per pair	2.05	2.55	2.65
Curved Blades.....per pair	2.15	2.65	3.00
Approx. Length.....inches	20	27	34
Capacity Insulated Cable.....inches	1	1 ³ / ₈	1 ³ / ₄
Approx. Weight.....pounds	2 ⁵ / ₈	4 ⁵ / ₈	7 ¹ / ₄

Porter Foresters



No. 1 is especially designed for the fruit grower but it is also handy for the home gardener for light shrub cutting, root cutting and any general clearing up.

No. 2 is suitable for forest pruning, brush and shrub cutting and root cutting. Especially recommended as a forestry tool where pine pruning and rust control programs are being carried out. Convenient in close growth.

No. 3 is capable of cutting up to its rated capacity in hard wood such as oak, maple and beech. Designed for use in reforestation work for such jobs as brush cutting, trail clearing, roadside stripping and any general improvement cutting in stands of all ages.

These foresters have the slide shift 3-power slot which provides great extra power in the middle of a difficult cut by the simple shift from one notch of the power slot to the next. Power can be increased 50 or 100 per cent. Use of the power slot is easy, instantaneous and with a few minutes practice, instinctive.

Ruggedly built for life time use. Easily sharpened by the use of a half round, second cut file of the proper size. Edges are protected when the handles are closed. All parts are carefully heat treated, and fully interchangeable.

Cuts clean and without damage to bark.

No.	1	2	3
Each.....			
Length.....inches	20	27	34
Capacity Cut.....inches	1 $\frac{3}{8}$	1 $\frac{1}{2}$	2
Weight.....pounds	2 $\frac{5}{8}$	4 $\frac{5}{8}$	7 $\frac{1}{4}$

Porter Fireman's Cutters With Insulated Handles



Special groping hook guides wire into jaws. Wide jaw opening for heavily insulated wires.

No.	1	2	3
Rigid, Complete.....each	\$16.75	\$26.50	\$31.00
Swivel, Complete.....each	19.25	29.50	.....
Cutterhead, Complete.....each	10.50	19.50	21.50
Jaws.....per pair	3.50	4.30	5.30
Rubber Handle Covers.....per pair	3.60	4.60	5.60
Approx. Length.....inches	27	33	39
Jaw Opening.....inches	$\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{1}{4}$
Capacity Solid Copper Wire.....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$
Approx. Weight, Rigid.....pounds	6	9 $\frac{1}{2}$	14
Approx. Weight, Swivel.....pounds	7	10 $\frac{3}{4}$	.....

No. 12X-1855 Porter Bolt Clippers

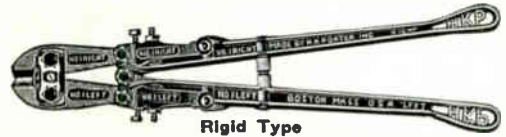


Capacity up to $\frac{1}{4}$ -inch annealed bolts in the thread, $\frac{3}{8}$ -inch soft rods. Stops have rubber buffers. Length, 12 inches.

No. 12X-1855, Approx. Weight, 1 $\frac{1}{2}$ Pounds per dozen \$36.00
Jaws.....per pair 1.60

Porter Rigid and Swivel Type Bolt Clippers

Clipper Cut—Center Cut



Rigid Type



Swivel Type

The swivel type flexible bolt clipper permits cutting at any desired angle. This is made possible by ball and socket joints and a positioning spring. The cutting jaws of rigid type clipper cut and center cut clippers are firmly fixed in line with the handles.

Clipper cut jaws are beveled almost entirely from one side for close cutting. Center cut jaws are beveled equally, bringing cutting edge at center of jaw. Clipper cut regularly furnished.

Rigid Type

No.	Clipper Cut Each	Center Cut Each	*Complete Cutterheads		*Jaws		Approx. Lgh. of Tool in. in Thrd.	Approx. CAP., In. of nealed Bolts Soft Rods	Approx. Wt. Lbs.	
			Clipper Cut Each	Center Cut Each	Clipper Cut Pr.	Center Cut Pr.				
100K	\$4.00	\$4.25	\$2.50	\$2.70	\$2.00	\$2.20	10	$\frac{3}{16}$	$\frac{1}{8}$	1 $\frac{1}{2}$
140K	4.50	4.75	2.80	3.00	2.20	2.40	14	$\frac{1}{4}$	$\frac{3}{16}$	2 $\frac{1}{4}$
0NE	5.50	5.75	3.20	3.40	2.50	2.70	18	$\frac{5}{16}$	$\frac{1}{4}$	3 $\frac{1}{4}$
1NE	7.00	7.25	4.00	4.30	3.20	3.50	24	$\frac{3}{8}$	$\frac{5}{16}$	5 $\frac{1}{4}$
2NE	8.75	9.00	4.90	5.30	4.00	4.40	30	$\frac{1}{2}$	$\frac{3}{8}$	8 $\frac{1}{2}$
3NE	11.25	11.75	6.00	6.50	5.00	5.50	36	$\frac{5}{8}$	$\frac{1}{2}$	12 $\frac{1}{2}$
4AR	15.50	16.50	8.00	9.00	6.80	7.80	42	$\frac{3}{4}$	$\frac{5}{8}$	17 $\frac{3}{4}$

Swivel Type

0NE	\$7.75	\$8.00	\$3.20	\$3.40	\$2.50	\$2.70	19	$\frac{5}{16}$	$\frac{1}{4}$	4
1NE	9.50	9.75	4.00	4.30	3.20	3.50	25	$\frac{3}{8}$	$\frac{5}{16}$	6 $\frac{1}{4}$
2NE	11.75	12.00	4.90	5.30	4.00	4.40	31	$\frac{1}{2}$	$\frac{3}{8}$	9 $\frac{3}{4}$

*Same jaws and heads can be used for either rigid or swivel.

Porter Cohardite Insulated Cutters



Rugged and durable lineman cutter with cohardite insulation molded onto handles—a safety measure against abrasion and puncture.

No.	1	*1	2	*2
Rigid, Clipper Cut.....each	\$16.00	\$24.00	\$18.25	\$34.00
Rigid, Center Cut.....each	16.25	24.25	18.50	34.25
Swivel, Clipper Cut.....each	18.50	26.50	21.25	37.00
Swivel, Center Cut.....each	18.75	26.75	21.50	37.25
Cutterhead Complete.....each	.....	.....	.....	.....
Jaws.....per pair	.....	.....	.....	.....
Cohardited Handles.....per pair	13.25	13.25	14.75	14.75
Approx. Length.....inches	26	26	31 $\frac{1}{2}$	31 $\frac{1}{2}$
Jaw Opening.....inches	$\frac{3}{4}$	$\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{1}{8}$
Cap. Solid Copper Wire inches	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$
Approx. Weight.....pounds	7	7	10 $\frac{1}{8}$	10 $\frac{1}{8}$

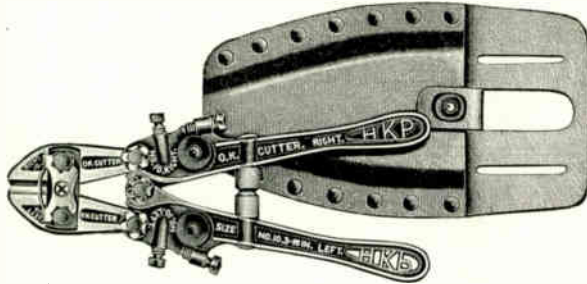
*Fireman's cutters with automatic search hook.

No. 723 Greenlee Standard Screwdriver Bits



Size.....inches	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$	Asstd.
Length Over All.....inches	4 $\frac{1}{4}$	4 $\frac{1}{2}$	5	5 $\frac{1}{2}$	.....
Price, No. 723.....per dozen	\$1.50	1.50	1.60	1.80	1.60

No. 10-CCRE Porter High Tensile Wire Cutters



A light, handy tool for linemen only, specially tempered to solve problem of cutting new high tensile telephone and telegraph line wire. Especially suitable for new Nos. 85 and 135 high strength wire in No. 10-12-14 BWG.

Fitted with sturdy holster made of weather resistant leather. Put together with rivets—no stitching. Special safety snap down retainer strap. Tool comes out easily and goes back in with no fumbling. Slides on belt and stays in position.

Length of tool, 10 inches. Length of tool and holster, 11 inches.

Approximate weight of tool, 1½ pounds; approximate weight of tool and holster, 2 pounds.

No. 10-CCRE Tool.....each \$4.25
Holster.....each 2.25

No. 31 Greenlee Electricians' Double Speed Auger Bits



A fast boring auger bit fitted with a double screw point which leads six turns to the inch. Head is of the double-spur pattern, providing two cutting edges, spurs and side lips which allow for maximum wear. Twist is open for good chip clearance and cutting edges are sharply pitched for fast cutting. Especially suited for boring soft wood, but can also be used in the harder woods.

All parts fully polished except the square.

Overall length, 9 inches.

Standard package, ½ dozen in a box.

Sizes in 16ths.....inches 10 11 12
No. 31.....per dozen \$6.00 7.00 7.00

No. 16 Greenlee Unispur Auger Bits



For electricians. Has twist length of 5½ inches; over all length without screw point, 10 inches. Has 8-pitch single screw point. Head has single cutter with 1 outlying spur.

Size in 16ths.....inches 10 11 12 13 16
Price, No. 16....per dozen \$6.00 7.00 7.00 8.25 9.50

Greenlee Setfast Expansive Bits

The cutters and the adjusting barrel are fitted with 8 pitch square thread. Has wide open mouth. The parts are locked by the action of the eccentric pin in the side of the body. Cutter is set by turning adjusting barrel. Packed 1 in a box; 6 in carton.



Price, No. 5 Small Bit, 5/8 to 1¼ Inches....per dozen \$22.00
Price, No. 5A Cutter, 5/8 to 1½ Inches....per dozen 3.00
Price, No. 5B Cutter, 1 1/8 to 1¾ Inches...per dozen 3.75
Price, Extra Adjusting Barrels.....per dozen 1.50
Price, Extra Eccentric Pins.....per dozen 1.50
Price, No. 6 Large Bit, 7/8 to 3 Inches....per dozen 26.00
Price, No. 6A Cutter, 7/8 to 1¾ Inches....per dozen 5.25
Price, No. 6B Cutter, 1¾ to 3 Inches....per dozen 6.00
Price, No. 6C Cutter, 2½ to 4 Inches....per dozen 9.00
Price, Extra Adjusting Barrels.....per dozen 1.80
Price, Extra Eccentric Pins.....per dozen 1.80

Greenlee Bit Extensions



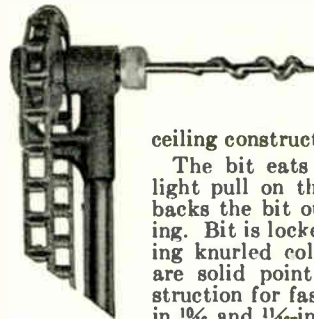
No. 900 is made to drive a bit up to 1-inch diameter but small enough to follow a 5/8-inch bit. This is due to the thin outer shell, which does not drive the bit, the driving coming from the bit chuck within. There are 5 major parts, all exposed surfaces of which are nickel-plated except the square, which is lacquered. The positive lock prevents the loosening of the holding sleeve. This lock consists of a sleeve with a spring tension, which engages the screw sleeve when released, and two 1/8-inch pins prevent it turning.

No. 925 bit extension is similar in design to No. 900 except it is made extra heavy to follow a 1½-inch auger bit and drive tools up to 2-inch diameter.

Packed 1 in a leatherette case.

Length.....inches 12 15 18 21 24 30
Price, No. 900...each \$2.10 \$2.20 \$2.25 \$2.35 \$2.40 \$2.50
Price, No. 925...each 2.75 3.00

No. 11 Ideal Joist Boring Machines



The Ideal Boring Machine is operated from the floor, and bores holes at any angle through rafters, joists or studdings. Used on new or old floor and ceiling construction.

The bit eats right into the wood with a light pull on the chain. Reversing the pull backs the bit out without bending or breaking. Bit is locked in place by merely tightening knurled collar—no tools required. Bits are solid point type, with special lip construction for fast and easy boring. Available in 1/8 and 1/16-inch diameters.

Weight, 17 pounds.

No. 11 Complete with Two Special Bits.....each \$18.75
Extra Bits (Quick Cutting).....each 1.12

No. 220 Greenlee Short Socket Firmer Chisels



Beveled edges and leather tipped handles. Blades 4½ inches in length and are thinner than the regular firmer chisel, filling the demand for tools lighter in weight. They are shorter in length than the regular firmer chisel and yet longer than a butt chisel. Extra for beveled edges. Packed six in a box.

Size Inches	Price per Dozen	Size Inches	Price per Dozen	Size Inches	Price per Dozen
1/8	\$14.00	5/8	\$15.50	1 1/4	\$20.50
1/4	14.00	3/4	16.00	1 1/2	22.00
3/8	14.00	7/8	18.00	1 3/4	24.00
1/2	14.00	1	18.50	2	25.00

Lufkin 1-Inch Micrometer Calipers



With Full Finished Cut-Away Frame Rapid Reading Range, 0 to 1 Inch

Packed 1 in box. Wt., 7 oz.

For Measuring by Thousandths of an Inch

No.	Description	Each
1611	Plain, without Lock Nut or Ratchet Stop..	\$8.50
1621	With Lock Nut, without Ratchet Stop....	9.50
1641	With Lock Nut and Ratchet Stop.....	10.00

For Measuring by Ten-Thousandths of an Inch

1611V	Plain, without Lock Nut or Ratchet Stop.	\$10.25
1621V	With Lock Nut, without Ratchet Stop....	11.25
1641V	With Lock Nut and Ratchet Stop.....	11.75

Lufkin Wizard Junior Tape-Rules



Nickel plated steel blade, 1/2 inch wide, is stiffened by concave forming so it can be projected unsupported. Will also flex to measure circles, around corner, etc. Blade is manually operated. Remains set at any point. Solid hook is for measuring within or beyond arm's reach. Accurate butt end measurement is taken from shoulder of blade.

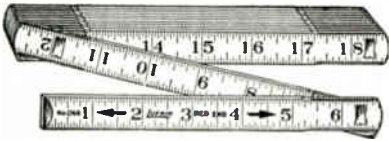
Nickel plated case, 1 7/8 inches in diameter, encloses blade. Rounded corners and ribbed at bottom to stand on edge.

Nos. 1686 and 1688 are marked on one side in inches to 16ths on both edges. First 6 inches of upper edge to 32nds.

No. 1686D is marked on one side in feet, 10ths and 100ths on upper edge. Inches and 16ths on lower edge.

No.	1686	1688	1686D
Per Dozen	\$10.20	16.80	13.20
Length	72 in.	96 in.	6 ft.
Weight, per Dozen	lb. 2 1/4	2 1/2	2 1/4

Lufkin Red End Spring Joint Rules



Lock joints and strike plates of solid brass. The cream enamel is a new finish.

The white enamel is as near snow white as it is possible to obtain and both colors have a gloss finish.

Marked consecutive inches to 16ths, both edges, both sides. Six-inch folds, 5/8-inch wide. Can be furnished with the patent folding hook.

Length Feet	No. in Box	Wt. Lbs. per Dos.	CREAM ENAMELED		WHITE ENAMELED	
			No.	Price per Dos.	No.	Price per Dos.
4	6	2 1/4	054	\$5.20	064	\$5.60
5	6	2 3/4	055	6.40	065	6.90
6	6	3 1/2	056	7.20	066	7.80
8	6	4 1/2	058	10.00	068	10.80

No. 372 Lufkin Boxwood Caliper Rules

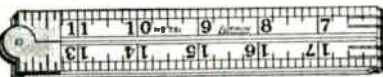


Square joint. Graduated in 8ths, 10ths, 12ths, and 16ths; caliper, 16ths and 32nds. One foot, two-fold, 1 3/8 inches wide.

Packed 6 in box. Weight, per dozen, 1 3/4 pounds.

No. 372 (36 1/2).....per dozen \$12.10

No. 751 Lufkin Boxwood Rules



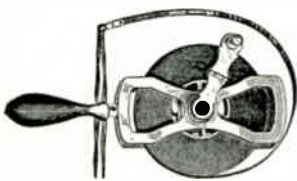
Has square joint and middle plates, graduated in 8ths and 16ths. Two-foot, 4-fold, 1 inch wide.

Has extra prominent markings and figures, most legible.

Packed 6 in a box. Weight, per dozen, 1 1/2 pounds.

No. 751 (61).....per dozen \$5.50

Michigan Chain Tapes



Especially popular in railroad and highway work. Line is detachable from reel, has heavy brass end clips, and is furnished with a pair of leather thongs.

Markings are on babbitt metal. Marked on one side only, feet only every foot, with end feet in 10ths. Blank space on each end.

Width, 5/16 inch. Approximate thickness, .015 inch. Length, 100 feet.

No. 3100, Tape Complete with Reel.....each \$12.30
No. 03100 Line Only, without Reel, with Thongs, each 8.20

Lufkin Sterling Linen Tapes



Case is of genuine leather, metal lined, with a folding flush handle and nickel-plated trimmings.

Tape is 5/8 inch wide with leather reinforcement on first end.

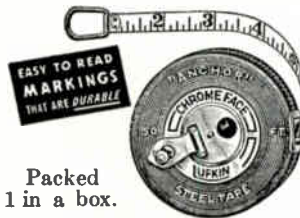
Tape is marked on one side only, to feet, inches and half-inches.

Packed 1 in a box.

Catalog No.	400	403	405	406
Each	\$3.80	5.00	6.40	7.50
Length	feet 25	50	75	100
Weight	ounces 8	12	19	24

Lufkin Chrome Face Anchor Steel Tapes

Accurate, highest grade Steel Tapes, chrome plated. Markings durable as well as extra legible. Measurements easy to read, even in poor light, markings being jet black on satin chrome-white surface, free of glare. The hard chrome face resists both rust and wear, is smooth and easy to clean. Thus built up, of metal throughout, these Tapes will not crack, chip or peel, and are extra strong. Leather case, metal lined; winding handle opened by push pin.



Packed 1 in a box.

No.	Ft. In. & 8ths	Ft. 10ths & 100ths	Each	Width In.	Length Ft.	Wt. Oz.
C210&C210D	3/8	25	\$5.40	3/8	25	9
C213&C213D	3/8	50	6.60	3/8	50	15
C215&C215D	3/8	75	8.60	3/8	75	21
C216&C216D	3/8	100	11.30	3/8	100	26
C310&C310D	1/2	25	6.30	1/2	25	10
C313&C313D	1/2	50	7.50	1/2	50	19
C315&C315D	1/2	75	9.90	1/2	75	26
C316&C316D	1/2	100	12.50	1/2	100	31

Lufkin Challenge Steel Tapes

This tape is 3/8 inch wide and has a Nubian finish. The metal-lined, genuine leather case has nickel-plated trimmings and a folding flush handle. Measurements are guaranteed accurate.

Nos 260 to 266 are marked in feet, inches and eighths. Nos. 260D to 266D are marked in feet, 10ths and 100ths, one side only.

Packed 1 in a box.



No.	Each	Length Feet	Wt. Oz.
260 & 260D	\$5.40	25	8
261 & 261D	5.90	33	9
263 & 263D	6.60	50	11
264 & 264D	8.30	66	14
265 & 265D	8.60	75	17
266 & 266D	11.30	100	21

Lufkin Linen Tapes

On Metal Reels

Tape is 5/8-inch wide, high grade linen line, non-metallic.

Has clear markings, prominent figures. Leather reinforcement first end. Substantial, perforated disk reel of metal, heavily nickel plated. Perforations aid in clearing tape of dirt and in drying it out. Sturdy folding winding handle and adjustable strap handle. Patent threader makes removal of old

and attaching new line simple.

Marked in feet, inches and half inches, one side only.			
No.	1407	01407	
Each	\$18.50	9.10	
Length	feet 150	150	
Weight Each	pounds 3 1/2	1 1/8	

No. 1407 furnished tape complete with reel; No. 01407, line only, without reel.

Klein's Linemen's Pole Climbers

(Also Called Spurs or Hooks)

Safety is the first and vital point in considering linemen's pole climbers. The lineman going up a pole depends entirely upon his spurs.

To assure utmost dependability Klein's Climbers are forged from special steels and are individually tempered. Shanks and gaffs are tested to insure perfect riveting and temper.

Leg iron or shank is made of spring steel; gaff or spur is forged from tool steel.

The shape of Klein's Climbers has been carefully considered. It is the result of many years' experience and much practical suggestion from linemen. Klein's Climbers have flexible shanks and yield readily to pressure of leg; they do not chafe. Gaff or spur is correct in shape, set of angle and temper. It is hand riveted to leg iron in secure manner.



No. 1939 Klein's Streamlined Linemen's Climbers

A newly designed climber in which the use of any unnecessary metal has been carefully avoided. Leg irons are flexible and tapered in width and thickness. The "critical" section from 3 inches above the gaff to half way across the stirrup has been designed for ample strength. The gaffs are slender type, preferred on treated (Black Jack) poles. A wrought ring carries the ankle strap. Gaffs 3½ inches long measured on the outside. Riveted top loop.

Each climber individually tested.

Size is measured from instep to end of shank. Special sizes on order.

Average weight per pair, 2½ pounds.

Size . . . in. 15 15½ 16 16½ 17 17½ 18
Per Pair . . \$8.00 8.00 8.00 8.00 8.00 8.00 8.00

Klein's Eastern Climbers



When ordering specify length of shank desired. Measure from instep to extreme end. Other than stock sizes to order. Tested before leaving factory.

No. 1901

Stock sizes, 15, 15½, 16, 16½, 17, 17½ and 18 inches.

Has punched strap loops. Packed 1 pair in a carton.

No. 1901, Wt. 3½ Lbs. per pair \$7.20

No. 1900

Same and same sizes as No. 1901 but has riveted strap loops. Packed 1 pair in a carton.

No. 1900, Wt. 3½ Lbs. per pair \$7.20

No. 1903

Light weight pattern with riveted strap loops. Packed 1 pair in a carton.

No. 1903, Wt. 2½ Lbs. per pair \$7.20

No. 1907



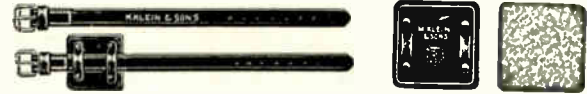
This is the standard tree climber used by forest rangers, top loggers, fire wardens, surveyors, etc. Made in all standard sizes.

Has punched strap loop. Gaffs, or spurs, are 5½ inches long measured on the outside and 3½ inches long measured on the underside. They are set high in the leg iron so that points clear the ground.

Packed 1 pair in a carton.

No. 1907 per pair \$8.00

Klein's Linemen's Climber Straps and Pads



All leather used is first quality harness leather. All sewing is lock stitched with genuine linen thread hot waxed. Buckles and buckle tongues are Klein standard solid steel drop forgings, tested to 1500 pounds.

With Square Pads—Straps 1¼-Inches Wide

This set consists of 2 upper or calf straps and two lower or ankle straps; and two square pads. Size straps, 1¼x22 inches. Size pads, 4x4 inches.

No.	Description	Per Set	Wt. Lb. per Dos. Sets
5301-1	With Plain Pads	\$7.10	20
5301-2	With Sheep-Lined Pads	7.50	20
5301-3	With Felt-Lined Pads	7.50	20

With Square Pads—Straps 1-Inch Wide

5301-11	With Plain Pads	\$6.90	18
5301-12	With Sheep-Lined Pads	7.30	18
5301-13	With Felt-Lined Pads	7.30	18

Without Pads

Set consists of one pair, (2 straps).

5301-4	Strap size, 1¼x22 Inches	\$2.90	8
5301-9	Strap Size, 1x22 Inches	2.80	6
5301-14	Strap Size, 1¼x26 Inches	3.20	9
5301-10	Strap Size, 1x26 Inches	3.10	8

With Pads

Set consists of one pair, (2 straps), and two plain pads, size, 4x4 inches.

5301-5	Strap Size, 1¼x22 Inches	\$4.20	12
5301-15	Strap Size, 1x22 Inches	4.10	11

Square Shape Climber Pads

Size, 4x4 inches. Set consists of one pair, (2 pads).

8200	Sheep-Lined	\$1.70	4
8201	Felt-Lined	1.70	4
8202	Plain Leather	1.30	4

No. 8206 Klein's Pear Shape Linemen's Climber Pads



These pads are made of two thicknesses of select harness leather riveted together. Outer piece punched with two slots for climber strap and one cross slot through which leg iron of climber is passed. Size, 3½x6 inches.

No. 8206 per pair \$1.40

Klein's Climber Straps and Pads

Bell System Type



Set consists of 2 calf straps 1x22 in. with 2 special pads and 2 ankle straps 1x26 in.

Cat. No.	Per Set	Description	Wt. Lbs. per Dos. Sets
5301-6	\$7.90	With Plain Pads	14
5301-7	8.20	With Sheep-lined Pads	15
5301-8	8.20	With Felt-lined Pads	15

Straps, Only

	Dos. Pr.
5301-9 \$2.80 Calf Straps, 1x22 in., 2 Straps	5
5301-10 3.10 Ankle Straps, 1x26 In., 2 Straps	6

Pads, Only

	Dos. Pr.
8203 \$2.00 Plain Leather	4
8204 2.30 Sheep-lined Leather	5
8205 2.30 Felt-lined Leather	5

Pads made of select leather, arranged with loops for climber straps and climber. Tapering ¾ inch to 2¼x6¼ inch deep.

No. 1929-G Klein's Linemen's Climber Gaff Guards



Made of harness leather. The wings of the guard fit around leg iron of climber just above the gaff and snap on.

The gaff is covered and protected by the leather fold over.

Weight per dozen pairs, 1 1/4 pounds.

Set consists of one pair, 2 pieces.

No. 1929-G.....per pair \$.70

Klein's Ankle Straps

For Ring Attachment on No. 1939 Klein's Linemen's Climbers



These straps are made in two pieces and are furnished with rivets and burrs. Punched ready for quick attachment. Weight per dozen pairs, 10 pounds.

No. 5301-16, Size, 1 1/4 x 24 Inches.....per pair \$3.60

No. 5301-26, Size, 1 x 24 Inches.....per pair 3.20

Klein Safety Straps

Klein Safety Straps are made in various patterns in a choice of two materials.

First quality back stock vegetable tanned harness leather. The new Klein-Kord fabric especially made for this purpose.

In all cases sewing is with genuine linen thread, hot waxed and lock stitched. Riveted by hand with solid copper rivets.

All buckles, including tongues, are drop forged, tested to 1500 pounds. There are three patterns of drop forged, tested snaps available as illustrated below.

Standard Snaps

Have wide nose covering spring latch protecting it from accidentally twisting out of Dee Ring, and can be used with any Dee.

Straps listed with plain catalog numbers have Standard Snaps.

Hank's Snaps

Are of special construction and must be used in conjunction with Hank's Dee Rings on belt.

Straps listed with "H" prefixing catalog numbers have Hank's Snaps.

Klein-Lok Snaps

Have a twin latch arrangement. Both latches must be pressed simultaneously to release. Full factor of safety. Can be used with any Dee.

Straps listed with "KL" prefixing catalog numbers have Klein-Lok Snaps.

Neatsfoot Oil

Keeps leather soft and pliable. Prolongs its life.

Supplied in cans with full directions for use.

Pint Can.....each \$1.50
 Quart Can.....each 2.50
 Half Gallon Can.....each 4.50

Klein's Tool Belts

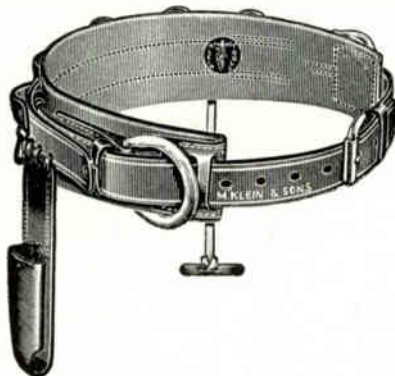
All Klein Belts are made of first quality vegetable tanned harness leather. Sewing is with genuine linen thread, hot waxed, lock stitched. Rivets are solid copper, hand set with burrs. Buckles, including tongues, and Dee Rings are steel drop forgings tested to 1500 lbs.

Catalog numbers prefixed by the letter "H" indicate belts fitted with Hank's Dee Rings which must be used with Hank's Safety Straps. All other makes are fitted with Standard Double or Single Bar Dees.

To insure proper fit select size that allows heel of Dee Rings to come about 1 inch in front of hip bones as per following table.

Distance Between Dee Rings, In....	20	22	22	24	26	28
Belt Size, In.....	36	38	40	42	44	46

No. 5228 Klein's Leather Tool Belts



Made of one piece of soft pliable, tough russet latigo leather, doubled to form comfortable rolled edges and returned at each end. Cushion is 4 1/2 inches wide at the center of the back and tapers to 3 1/2 inches wide at the front. Body strap is first quality russet harness leather, 2 inches wide, stitched to the cushion at back and passing through loops at end of cushion as well as through the dee rings. A russet harness leather tool strap, 1 1/4 inches wide with five loops in the 1 1/4-inch loop strap is carried on leather hangers from the body strap to which it is looped at the ends. This keeps the tool loops from contracting when belt is buckled on.

Constructed so that no rivets come through to inside of belt. Dee rings and buckle are single bar type solid steel drop forgings. All hardware tested to 1500 pounds. Galvanized finish. Fitted with leather pliers pocket, knife snap and tape thong, complete. Weight per dozen, 45 pounds.

Size.....Inches 36 38 40 42 44 46

No. *5228.....each \$17.50 17.50 17.50 17.50 17.50 17.50

No. †H-5228....each \$17.50 17.50 17.50 17.50 17.50 17.50

*With standard (single bar) dees. †With Hank's dees.

Special sizes supplied on order.

Klein's Tool Belts

With Standard Dees

No.	Each	Width In.	Wt. per Dos.
5204	\$10.20	3 1/2	34
5205	11.20	*2 1/4	35
5202	9.50	2 1/4	32

With Hank's Dees

H5204	\$10.20	3 1/2	34
H5205	11.20	*2 1/4	35
H5202	9.50	2 1/4	32

With Plier Pocket, Knife Snap and Tape Thong Attached

With Standard Dees

5204DE	\$13.20	3 1/2	38
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With Hank's Dees

H5204DE	\$13.20	3 1/2	38
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*Double thickness.



No. 5204 DE

No. 5204 Klein's Texas Belts



No. H5204 TSO (With Hank's Dees)

Are lined throughout with soft latigo leather.

Made 4 inches wide at center of back for full support, tapering to 2 1/4 inches wide at hips to permit free bend to body of wearer.

No. 5204-TSO, Standard Dees, Weight, 36 Lb. each \$15.30

No. H5204-TSO, Hank's Dees, Weight, 36 Lb. each 15.30

No. 5212 Klein's Derrick Belts



For oil derrickmen or structural workers.

Made to stand load of 250 pounds with a dead fall of five feet.

One three inch Forged Dee Ring at back for life line.

Double tongue buckle.

No. 5212, Weight, 42 Lbs. each \$11.00

No. 5214 Klein's Steel Workers' Belts



Three forged Dee rings for attachment of line in most convenient position. Leather loop for wrench. Main belt passes through rings held in place by backing pieces of latigo leather stitched and riveted to belt proper. Two-inch buckle, double tongue type with solid forged frame. One-piece belt of harness leather, two inches wide.

Distance between outer Dee rings 24 inches. Adjustable from 36 to 44 inches. Made in one size.

No. 5214, Weight per Dozen, 28 Pounds. each \$7.70

No. 5214-O, Without Wrench Loop, Weight per Dozen, 27 1/2 Pounds. each 7.50

No. 5215 Klein's Extension Straps



This strap is 1 3/4 inches wide, made of first quality harness leather and fitted with special forged D ring and buckle. It is worn attached to D ring on main body belt and used when large diameter poles necessitate a longer safety strap than the regular. By engaging snap of the regulation safety strap to the special D ring on the extension strap the lineman can immediately adapt his outfit so that he has no difficulty in working conveniently. No matter how large the pole—can be lengthened or shortened.

Size, 1 3/4 x 15 inches.

Weight per dozen, 14 pounds.

No. 5215. each \$5.10

No. H-5215. each 5.10

Klein Leather Safety Straps



No. 5251

Leather Wear Pads

No.	Each	Size	Wt. Lbs. per Dos.
5251	\$9.70	1 3/4 in. x 5 ft. 8 in.	32 1/2
H5251	9.70	1 3/4 in. x 5 ft. 8 in.	32 1/2
KL5251	10.70	1 3/4 in. x 5 ft. 8 in.	32 1/2

Stainless Steel Wear Pieces

5250	\$9.70	1 3/4 in. x 5 ft. 8 in.	32 1/2
H5250	9.70	1 3/4 in. x 5 ft. 8 in.	32 1/2
KL5250	10.70	1 3/4 in. x 5 ft. 8 in.	32 1/2
5253	12.40	2 in. x 5 ft. 8 in.	40
H5253	12.40	2 in. x 5 ft. 8 in.	40
KL5253	13.40	2 in. x 5 ft. 8 in.	40

Bell System Type

5257S	\$13.00	2 in. x 5 ft. 1 1/2 in.	39
5257L	13.70	2 in. x 5 ft. 10 in.	41

N. E. L. A. Specifications

5258	\$13.40	2 in. x 5 ft. 6 in.	40
H5258	13.40	2 in. x 5 ft. 6 in.	40
KL5258	14.40	2 in. x 5 ft. 6 in.	40

Klein's Belt Accessories

No. 5130 Tape-Thongs With Fiber Cross Bar

Tape-thong provides a convenient arrangement for carrying a roll of tape. Made of pliable latigo leather, 10 inches long by 3/8 inch wide. Slit to form loops at both ends. One end is looped to a fiber cross bar 3 1/2 inches long. The other loop may be attached readily to the belt.

Weight per dozen, 1/2 pound.

No. 5130. each \$.40

No. 5131 Knife Snaps With Strap and Rivets

Mounted on harness leather strap. Provided

with rivets and burrs ready for attaching to the belt. Weight per dozen, 1 1/2 pounds.

No. 5131. each \$.50

No. 5132 Rings With Strap and Rivets

Mounted on harness leather strap. Provided with rivets and burrs ready for attaching to the belt.

No. 5132, Weight per Dozen, 1/2 Pound. each \$.40

No. 5221 Klein's Combination Leather and Klein-Kord Belts



Leather cushion three inches wide tapered at hips. Body or top strap of 1 3/4-in x 6-ply Klein-Kord stitched to it. Leather strap one inch wide riveted to body strap forms five tool loops.

Will not stretch between Dee rings. Rings and buckle of solid steel drop forgings each tested to 1500 pounds. Galvanized finish. With leather plier pocket, knife snap, and tape-thong. In 36, 38, 40, 42, 44, and 46-inch sizes. Weight per dozen, 36 pounds.

No. 5221-KK, With Std. (Single Bar) Dee Rings. each \$12.90

No. H-5221-KK, With Hank's Dee Rings. each 12.90



No. 5130



No. 5131



No. 5132

Klein's Fabric Tool Belts



This belt is especially recommended for the use of line patrolmen, inspectors, service men and others who must carry a belt for occasional use.

Constructed throughout of a new rubberized fabric. This fabric is made up of a number of plies laid and vulcanized in live rubber in such a way as to secure the flexibility necessary for comfort as well as to protect the fabric from the weather. The inner surfaces are left untreated to prevent condensation from body heat which might otherwise occur.

The cushion is 3 inches wide tapered at the hips where it is returned through the double bar dee rings. The body, or top strap, is 1½ inches wide riveted to the cushion to form four tool loops of convenient size. It also passes through the dees as an additional safety precaution. All edges are lock stitched with genuine linen thread. Dee rings and buckle are solid steel drop forgings, individually tested to 1500 pounds. Galvanized finish.

Weight per dozen, 25 pounds.

No. 5227-KK With Standard D Rings

Size.....inches	36	38	40	42	44	46'
No. 5227-KK...each	\$9.20	9.20	9.20	9.20	9.20	9.20

No. H-5227-KK With Hank's D Rings

Size.....inches	36	38	40	42	44	46
No. H-5227-KK each	\$9.20	9.20	9.20	9.20	9.20	9.20

Klein's Klein-Kord Safety Straps



Size 1¾ inches x 5¾ feet. With stainless clips. Weight per dozen, 36 pounds.

No. KI-5233, With Klein-Lok Snaps.....each	\$10.70
No. 5233, With Standard Snaps.....each	9.70
No. H-5233, With Hank's Snaps.....each	9.70

Klein's Klein-Kord Safety Straps

Fixed Length Type



This fixed length strap avoids wear close to the buckles, due to the smooth way it moves on the pole.

Effective length, 1¾x56 inches.

Weight per dozen, 25½ pounds.

No. KI-5234, with Klein-Lok Snaps.....each	\$8.30
No. 5234, with Standard Snaps.....each	7.30
No. H-5234, with Hank's Snaps.....each	7.30

No. K.K.D.-025 Klein-Kord Dressing

For use with Klein-Kord.

Put in ¼-pint cans.

Weight per dozen, 4¼ pounds.

No. K.K.D.-025.....per can	\$.50
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No. 5209 Klein's Safety Harnesses



Back

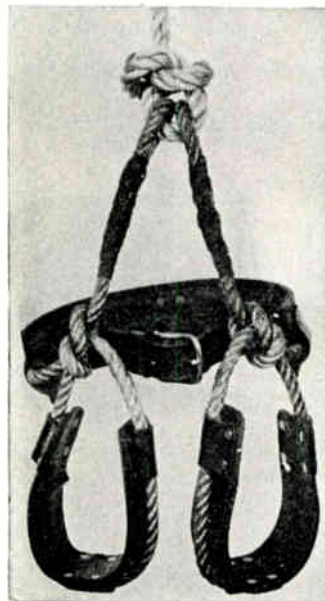


Front

Meets requirements of various safety commissions for use where danger from gassing is present. Working in gassy manholes, gas tanks, oil tanks and even boilers, men are frequently overcome and an emergency arises instantly. This harness provides a sure means by which patient can be brought to safety and danger overcome. Design is such that it slings wearer in a perpendicular position so that he can be readily hauled through an ordinary manhole opening. A solid harness leather back plate 2¼x10 inches is stitched and riveted around the 1¼-inch adjustable belt strap. Back plate also carries a tested drop forged D ring to which the ¾-inch manila life line, 25 feet in length is permanently attached. Shoulder straps are ¾ inch and made adjustable and riveted to belt at single ends. These straps hold belt in position around chest so as not to encumber wearer while working. Weight per dozen, 75 pounds.

No. 5209, with Life Line.....each \$13.40

Bartlett Safety Saddles



Provides a belt and saddle combination.

Main belt is made of 3½-inch heavy leather, reinforced by the tightening strap which is adjustable from 36 to 44 inches.

It is provided with two D rings, and a ½-inch, 4-strand rope also passes through supports on the belt to encircle the leg supports, which are of 3-inch leather.

Used extensively by state highway departments, public utilities and tree expert companies.

Also used in painting steel towers in high tension transmission lines.

Complete.....each \$8.00



No. 5108 Klein's Inspectors' Harness Leather Tool Bags



This bag is made of harness leather and will stand rough and hard usage. The leather does not absorb moisture.

Bag has a shoulder strap combined with a pad and hand strap. The bottom is three-ply and is protected with steel studs. Retaining straps

pass clear around the bag so that it may be loaded to the limit of its capacity and be securely held intact. All seams are sewed with hot waxed linen thread, lock stitched.

No.	5108-14	5108-16	5108-18	5108-20	5108-22	5108-24
Each.	\$15.00	16.00	17.00	17.50	18.50	19.50
Size... in.	14x8	16x8	18x8	20x8	22x8	24x8
Wt....lb.	5	5 3/4	6	6 1/2	7	7 1/4

Klein's Linemen's Canvas Tool Bags With Leather Bottoms

This bag is made of one piece of white duck reinforced all around the bottom with heavy bag leather. The bottom is made of heavy leather outside and duck inside, lock stitched all around. The bottom is protected with strong steel studs. Bottom and sides are joined together with lock stitched leather welt seams.

Mouth of the bag is formed by a 12-gage steel frame. The canvas is clinched between this frame and an inside secondary steel frame.

Bag has harness leather handles and two retaining straps with buckles.

No. 5102, with Leather 3 1/4 Inches up Sides



No. 5105, with Leather 8 Inches up Sides



No.	Each	Size Inches	Weight Pounds	No.	Each	Size Inches	Weight Pounds
5102-12	\$8.30	12	2 1/4	5105-16	\$10.50	16	3
5102-14	9.00	14	2 1/2	5105-18	11.00	18	3 1/2
5102-16	10.00	16	3	5105-20	12.00	20	3 3/4
5102-18	10.50	18	3 1/4	5105-22	13.00	22	4
5102-20	11.50	20	3 1/2	5105-24	14.00	24	4 1/4
5102-22	12.50	22	3 3/4	.....	.....	.....	.....
5102-24	13.50	24	4	.....	.....	.....	.....

Linemen's bags can be furnished with lock and key, and shoulder strap at slight additional cost.

No. 30 Salisbury Non-Metallic Tool Bags



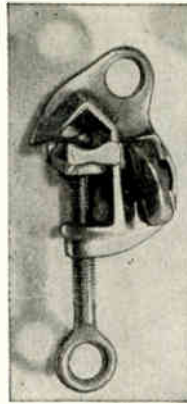
The tool bag is an essential part of line crew equipment as it is an efficient method of raising tools, supplies and material to the pole top.

This bag is of sturdy construction, amply reinforced and designed throughout for heavy duty service.

Made of duck with a single side seam together with top and bottom fastenings strongly sewed. The heavy leather bottom extends 3 inches up the sides. The top is held open, in round form, by a stout non-metallic ring. A 3/8-inch rope handle is firmly spliced to the bag through leather reinforcements. Equipped with a utility pocket on the inside to accommodate small tools, bolts, washers, etc. Bag is collapsible.

Diameter, 12 inches. Height, 16 inches.

Tips Perma-Grip Tap Off Clamps



Carefully, scientifically proportioned to give proper electrical conductivity, maximum mechanical strength, and symmetrical appearance. Current carrying capacity is in proportion to that of the maximum jumper wire for which each clamp is designed.

Tests reveal a minimum yield point of 165 inch-pounds and an ultimate strength in excess of 260 to 500 inch-pounds (depending on size) applied torque on eye screw.

Gripper is designed for three-point contact with the conductor.

U.S.S. threads on the high strength bronze eye screw permit quick, easy application, and a tight positive grip with greatly minimized danger of sticking due to corrosion.

Clamps with S.A.E. threads available on request. If hex screws are wanted, specify on order.

- TYPE CC. Copper to copper connection.
- TYPE CA. Copper to aluminum connection.
- TYPE GP. General purpose connection.
- TYPE AA. Aluminum to aluminum connection.
- TYPE AC. Aluminum to copper connection.

No. S1725

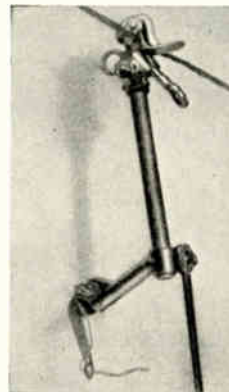
Type	MAIN LINE WIRE SIZES				JUMPER WIRE SIZES				Wt. Lb. per 100
	MAXIMUM		MINIMUM		MAXIMUM		MINIMUM		
	Size	Dec. Eqv.	Size	Dec. Eqv.	Copper	ACSR	Copper	ACSR	
CC			No. 6 Sol.	.162					64
CA	2/0 Str.	.414	Sol.		2 Str.	3			65
GP	Copper		Copper		2 Str.	3			64
AA	6 ACSR		No. 8 ACSR	.158	2 Str.	3			39
AC	with Armor	.434			2 Str.	3			40
GP	1/0 ACSR No Armor	.398			2 Str.	3			64

No. S1730

CC			No. 4 Sol.	.2043	2/0 Str.				95
CA	300M CM	.629	Copper		1/0	No. 6 Sol.			96
GP	Str. Copper				2/0 Str.	No. 6 Sol.	8		95
AA	2 ACSR		No. 6 ACSR	.198	1/0	No. 6 Sol.	8		55
AC	with Armor 266,800 CM	.595			2/0 Str.	No. 6 Sol.	8		56
GP	ACSR No Armor	.642			2/0 Str.	No. 6 Sol.	8		95

Tips Fused Tap Clamps

50-Ampere Capacity



Used where a fused protective device is required for transformer installations or branch line taps on 2300 to 15,000-volt lines. Provides protection for rural line tap-offs. Easily installed and removed with a clamp stick.

Has high rupturing capacity, ample flashover value, and positive vibrationproof contact. Designed to extract fuse links and thus reduce arcing with its charring effect inside fuse tube.

Tapper is provided with a Tip Snap Clamp. The fuse tube is lightweight, corrosion-resisting, waterproof, laminated plastic of great mechanical strength. Fiber lining quenches arc.

Type of connection: No. S1630-CC, copper to copper. No. S1630-AC, aluminum to copper.

No.	WIRE SIZES		Jumper	Weight Pound
	Main Line			
S1630-CC	4/0 Str.	Copper	No. 2 Str. Copper	2 1/4
S1630-AC	3/0 ACSR.		No. 2 Str. Copper	2 1/4

No. G4767-2 Tips Temporary Jumper Clamps



This clamp, equipped with 5000-volt rubber-covered extra-flexible cable, is recommended for extra protection to linemen doing general low voltage maintenance work.

Has large, positive, gripping surface.

Handle is of corrugated, medium hard rubber; will not break or crack if dropped from pole. Cable is easily and securely attached. Handle will accommodate 1-inch maximum overall diameter grounding cable.

No cable furnished.

Main line contact: maximum wire size, 750,000 CM stranded copper; minimum wire size, No. 10 solid copper. Jumper wire size: maximum, No. 2/0, 5000-volt flexible grounding cable. Length, 9 inches.

Weight each, 1 3/4 pounds.

Tips Grip-All Clamp Sticks



This clamp stick is safe and easy to handle.

To open jaws it is necessary to release the safety catch. Safety catch closes automatically when jaws are closed.

Full universal action is obtainable; eye screw may be turned with clamp stick at 0° to 90° angle to screw axis.

Hardwood pole is 1 1/2 inches in diameter; tested to withstand 75,000 volts per foot for five minutes.

Castings are aluminum and bronze.

No.	M1865-4	M1865-6	M1865-8
Length Pole.....feet	4	6	8
Overall Length.....	4'6 3/4"	6'6 3/4"	8'6 3/4"
Net Weight.....pounds	4 1/2	5 1/4	6

Tips Fuse Puller and Disconnecter



This puller permits pulling of cartridge type fuses without leverage being placed on cartridge in the act of pulling. The self-aligning head is able to follow the position of the cartridge while still holding it securely.

No.	Description	Overall Length	Net Weight Pounds
M4226	Mounted 1 1/4"x6' Pole.....	6'x6 1/2"	4 1/2
M4228	Fuse Puller Head for 1 1/4" Pole.....	8"	2 1/2

Tips Insulated Handles For Pliers and Cutters



Pliers with Insulated Handles

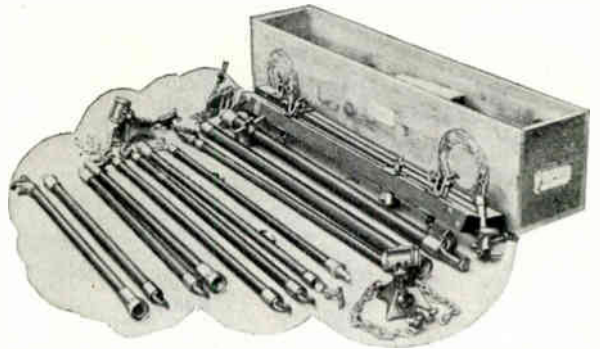
Tips Plier Handles provide a handy emergency tool.

Pliers or cutters are easily secured to insulated handles by means of eye bolts.

Cutter Only for Use with Insulated Handles

No.	Description	Pole Size	Overall Length	Weight Pounds
M1861-2	One Pair of Handles Only.	1 1/4"x4'	4'4 1/2"	7 1/2
M1861-4	Insulated Handles with 10-Inch Cutters.....	1 1/4"x4'	5'2"	9
M1861-1	Insulated Handles with 8-Inch Pliers.....	1 1/4"x4'	4'9"	8 1/2

Tips Hot Line Maintenance Tools



Tips Hot Line Tools make it possible to do all types of live line repair work safely without interrupting service.

A wide variety of Tips Tools are designed to do maintenance work on voltages 40 to 220 Kv.

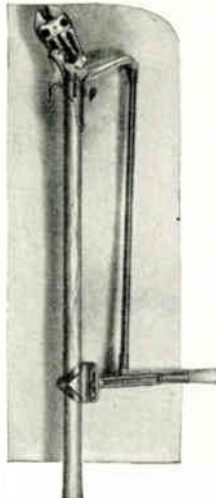
New poles or crossarms may be installed in the line. Pin type, suspension, or dead end insulators may be replaced. Transformers may be installed or removed. Similar maintenance jobs may be accomplished on either pole or tower with the aid of Tips Tools.

Complete information furnished on application.

Tips Insulated Wire Cutters

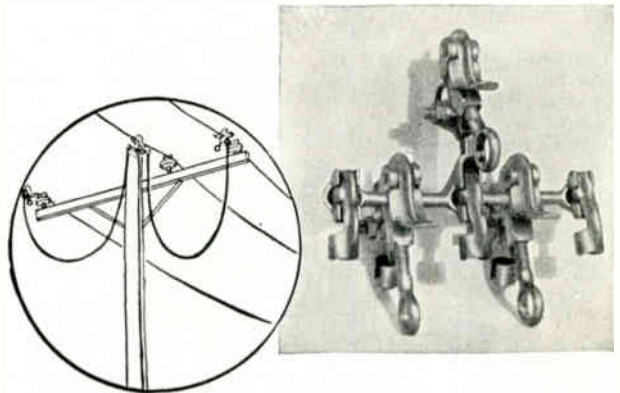
A lever type cutter that is easy to use. Gives positive insulation to operator because both pole and lever provide insulation.

In two sizes: for cutting 2/0 weatherproof solid copper wire or 2/0 bare aluminum core steel reinforced wire; heavy duty cutter for 2/0 weatherproof stranded copper, 4/0 bare stranded copper, and 4/0 bare aluminum core steel reinforced wire. Poles are laminated spruce. Lever attachment is a fiber sleeve.



No.	Pole Size	Overall Length	Approx. Wt. Lb.
M1871-4	1 1/4"x4'	4'7"	5 1/4
M1871-6	1 1/4"x6'	6'7"	5 3/4
M1873-4	1 1/2"x4'	4'8"	9 1/4
M1873-6	1 1/2"x6'	6'8"	10

No. G1710-5 Tips 3-Wire Standard Grounding Sets



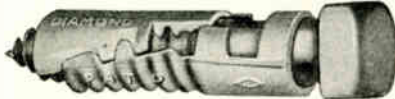
Has eye screw for use with clamp stick, no cable.

Cluster shown at right is made for grounding on any 3-wire construction. Also with clamps mounted on poles, single clamps mounted or unmounted. Clamps and cluster are bronze.

Main line contact: maximum wire size, 4/0 stranded copper, 3/0 ACSR. Jumper wire size: maximum wire size, No. 2 ground cable. Overall length, 8 inches.

Net weight, 4 1/2 pounds.

Diamond Wedge Type Lag Screw Expansion Shields



Made of malleable iron, hot galvanized by the Diamond process.

Sizes 1/4 to 5/8-inch

inclusive packed 100 in a box; 3/4-inch, 50.

Diam. Lag Screw In.	Long Standard				Short Standard			
	*Per 100	O.D. & Drill Size Inches	Length Shield Inches	Ship. Wt. Lb.	*Per 100	O.D. & Drill Size Inches	Length Shield Inches	Ship. Wt. Lb.
1/4	\$15.00	1/2	1 1/2	4 1/2	\$15.00	1/2	1	3
5/16	18.00	5/8	1 3/4	4 1/2	18.00	1/2	1 1/4	3
3/8	25.00	3/4	2 1/4	10	25.00	5/8	1 3/4	9
1/2	38.00	5/8	3	17 1/2	38.00	3/4	2	11
5/8	45.00	7/8	3 1/2	23	45.00	7/8	2 1/2	16
3/4	65.00	1	3 1/2	25	.....	.....	.....	.....

*Without lag screw.

Diamond P Lag Screw Expansion Shields

Hot galvanized by the Diamond process. Malleable iron.



Prices without lag screw.

Diam. Lag Screw In.	Long Standard				Short Standard			
	Per 100	O.D. & Drill Size In.	Length Shield In.	Ship. Wt. Lb.	Per 100	O.D. & Drill Size In.	Length Shield In.	Ship. Wt. Lb.
1/4	\$15.00	1/2	1 1/2	5	\$15.00	1/4	1	3
5/16	18.00	5/8	1 3/4	6	18.00	1/2	1	4
3/8	25.00	3/4	2 1/4	12	25.00	5/8	2	8
1/2	38.00	3/4	3 1/2	20	38.00	3/4	2	12
5/8	45.00	7/8	3 1/2	26	45.00	7/8	2	16
3/4	65.00	1 1/8	3 1/2	42	65.00	1 1/8	2	23
7/8	95.00	1 3/8	5	92	.....	.....	.....	.....
1	110.00	1 1/2	5	110	.....	.....	.....	.....
1 1/4	250.00	1 7/8	6 1/2	250	.....	.....	.....	.....

Diamond N Two-Part Composition Expansion Shields



Style F

Style C

Threaded on the interior. Made of comparatively soft composition and in small diameters for wood screws.

Furnished without screws.

Diameter Screw...	3/16" or No. 10	1/4" or No. 14	3/8" or No. 24	1/2" or No. 34
Per 100.....	\$15.00	15.00	25.00	38.00
O.D. Size Drill To Use.....in..	3/8	7/16	9/16	5/8
Length Shield.in..	1 1/8	1 1/8	2	2

Di-En-Key Expansion Bolts With Malleable Iron Expansion Shields



Hot galvanized by the Diamond process.

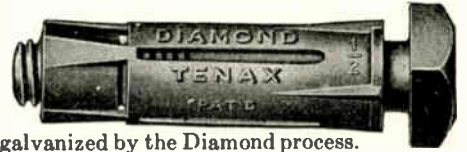
For use in suspension rods for mine hangers, steam and water pipes, sprinkler systems and allied lines. The smaller sizes are adapted to opera chairs and school furniture work.

Furnished either closed back (bottom bearing) as illustrated or open back.

Prices do not include machine bolt.

Diam. Screw.....in.	1/4	5/16	3/8	1/2	5/8	3/4
Per 100.....	\$15.00	18.00	25.00	38.00	45.00	65.00
Length.....in.	1	1 3/4	2	2 1/2	2 1/2	3 3/4
O.D.....in.	1/16	3/16	11/16	7/8	1	1 1/4

Diamond Tenax Expansion Shields For Machine Bolts



Hot galvanized by the Diamond process.

Tenax is cast in one piece of malleable iron. It has break-age connections between the nut and expansion shell. When the bolt is tightened the connections between the nut and shell break down and the nut telescopes into the shell and is guided by the slides in perfect alignment into the shell. A 4 way expansion with 4 ways to use. Smallest diameter of hole in any Malleable Iron expansion of equal bolt diameter. Has extremely high holding capacity. Prices do not include bolts.

Diam. Bolt In.	Without Bolts Per 100	Diameter Shield and 1 Size Drill Inches	Length In.	No. Per Box	Shipping Wt. Lbs. per 100
1/4	\$15.00	1/16	1 1/4	100	3
5/16	18.00	1/2	1 1/2	100	4
3/8	25.00	5/8	2	100	8
1/2	38.00	3/4	2 1/2	100	12
5/8	45.00	7/8	2 7/8	100	17
3/4	65.00	1	3 1/4	50	24

Keystone Interlocking Expansion Shields Double—For Use with Machine Bolts

Made of malleable iron.



Hot galvanized by the Diamond process.

Makes permanent fastenings to concrete, brick, or stone. Prevents nut being drawn out of shield when heavy loads are applied. Guides mechanic in determining when to stop tightening up bolt. Prevents nut being drawn past point of maximum expansion. Locks two sides and nut into a unit of resistance against load.

Diam. Screw or Bolt In.	Shields Only Per 100	Length Shield In.	O.D. and Size Drill to Use In.	Wt. Lb. Per 100
1/4	\$15.00	1 1/2	1/2	6
5/16	18.00	1 3/4	9/16	7
3/8	25.00	2	1 1/16	11
1/2	38.00	2 1/2	7/8	19 1/2
5/8	45.00	2 7/8	1	29
3/4	65.00	3 1/4	1 1/8	38
7/8	95.00	4	1 1/2	88
1	110.00	4 1/4	1 5/8	108
1 1/4	250.00	6	2 1/8	300

Keystone Single Expansion Shields For Machine Bolts and Machine Screws

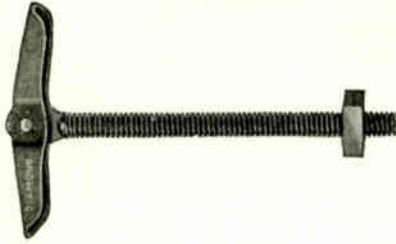


Hot galvanized by the Diamond process.

Diam. of Screw or Bolt Inches	Per 100	Length Inches	Outside Diam. and Size Drill to Use, Inches	Shipping Weight, Pounds per 100
1/4	\$15.00	1 5/16	1/2	6
5/16	18.00	1 1/2	9/16	7
3/8	25.00	1 5/8	11/16	10
1/2	38.00	1 7/8	7/8	17
5/8	45.00	2	1	20
3/4	65.00	2 3/4	1 3/16	44
7/8	95.00	2 3/4	1 1/2	75
1	110.00	2 3/4	1 5/8	90



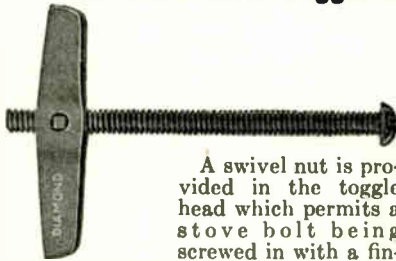
No. 1 Diamond Toggle Bolts



The No. 1 Diamond Toggle Bolt has the threaded bolt riveted to the toggle head.

Size, In.	Per 100
1/8 x3	\$6.80
1/8 x4	7.00
3/16 x3	7.00
3/16 x4	7.30
3/16 x5	8.40
3/16 x6	8.90
1/4 x3	7.70
1/4 x4	8.00
1/4 x5	9.40
1/4 x6	9.80
5/16 x3	12.00
5/16 x4	13.00
5/16 x6	15.00
3/8 x3	14.00
3/8 x4	16.00
3/8 x6	20.00
1/2 x4	25.00
1/2 x5	28.00
1/2 x6	30.00

No. 5 Diamond Toggle Bolts



A swivel nut is provided in the toggle head which permits a stove bolt being screwed in with a finished head at the outside of the work.

Furnished with either round or flat slotted head. Also furnished with steel heads and brass bolts; and with brass toggle heads and brass bolts.

*Mushroom head furnished in round head style 1/8-inch diameter only.

Size In.	Per 100
*1/8 x3	\$6.80
*1/8 x4	7.00
3/16 x3	7.00
3/16 x4	7.30
3/16 x5	8.40
3/16 x6	8.90
1/4 x3	7.70
1/4 x4	8.00
1/4 x5	9.40
1/4 x6	9.80
5/16 x3	12.00
5/16 x4	13.00
5/16 x6	15.00
3/8 x3	14.00
3/8 x4	16.00
3/8 x6	20.00

Diamond N Drills



4-Point or Star Drill



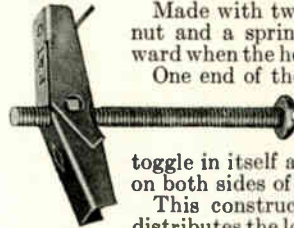
Diamond or Single Point Drill

Made of high grade octagon drill rod. Quality of steel is tested for uniformity. Heat treatment is scientifically conducted; heats for hardening and drawing the temper are determined by pyrometer and thermometer.

Diam. Drill In.	8-IN. LENGTH		12-IN. LENGTH		18-IN. LENGTH		24-IN. LENGTH	
	Per Dos.	Wt. per Dos.	Per Dos.	Wt. per Dos.	Per Dos.	Wt. per Dos.	Per Dos.	Wt. per Dos.
1/4	\$8.25	1 1/2	\$8.50	2 1/8	\$11.00	3	\$13.50	3 1/2
5/16	8.25	2 1/4	8.50	2 1/2	11.00	3 7/8	13.50	5 1/8
3/8	8.25	2 5/8	8.50	3 3/4	11.00	5	13.50	7 1/8
7/16	8.70	3 1/2	9.00	5	11.50	7	14.00	9
1/2	9.65	3 1/2	10.00	5	12.50	7 3/4	15.00	10 1/4
9/16 & 5/8	11.65	6 1/2	12.00	9 1/2	15.00	13 3/4	17.50	18 1/4
11/16 & 3/4	13.70	8	14.00	11 1/2	17.50	16 3/4	20.00	22 1/4
13/16 & 7/8	15.30	10	16.00	14	20.00	20 1/2	22.50	27 1/2
1	17.00	14	18.00	20	22.50	30	25.00	40
1 1/8	23.00	20	24.00	28 1/2	28.00	42	32.00	54
1 1/4			30.00	28 1/2	35.00	42 1/2	40.00	57
1 3/8			40.00	35	45.00	53	50.00	72
1 1/2			50.00	36	56.00	54	62.00	72
1 5/8			60.00	42	66.00	63	72.00	84
1 3/4			75.00	46 1/2	81.00	70	87.00	93
1 7/8			90.00	53	97.00	80	104.00	106
2			105.00	54	112.00	81	120.00	108
2 1/4			135.00	55	145.00	83	165.00	110
2 1/2			165.00	79	175.00	119	195.00	158

Can be furnished with tapered shanks to fit electric hammers. Supplies on order in lengths up to 6 feet for rock drilling.

Diamond Steel Spring Toggle Bolts



Made with two wings that engage a trunnion nut and a spring which forces the wings outward when the head has passed through the wall. One end of the spring is extended to prevent rotation of the head while turning in the screw.

Each wing is a complete toggle in itself and forms a bridge with bearing on both sides of the hole.

This construction gives great strength and distributes the load over a maximum of wall area.

All toggle threads are National Standard Thread. Head and bolts packed 100 in a box.

TYPE R—with round head screws. TYPE F—with flat head screws. TYPE M—with mushroom head furnished in R type 1/8 inch diameter only. TYPE N—reverse R or F screw on 2 to 4-inch lengths, 5 and 6-inch lengths threaded rods only and add nut. TYPE P—reverse R or F screw 2 to 4-inch lengths, 5 and 6-inch lengths threaded rods only and add acorn nut. Cap nuts extra.

DIAMETER	BOLT SIZE		Lgth. In.	Size Drill Req. In.	Ship. Wt. Lb. per 100	Per 100
	Wire Ga. No.	Thrds. In.				
1/8	6	32	2	3/8	1 3/4	\$6.60
1/8	6	32	3	3/8	2	6.80
1/8	6	32	4	3/8	2 1/4	7.00
5/32	8	32	3	1/2	3 1/2	7.00
5/32	8	32	4	1/2	4	7.30
5/32	8	32	5	1/2	4 3/4	8.40
5/32	8	32	6	1/2	5 1/4	8.90
3/16	10	24	2	1/2	3 1/4	6.90
3/16	10	24	3	1/2	3 3/4	7.00
3/16	10	24	4	1/2	4 1/4	7.30
3/16	10	24	5	1/2	4 3/4	8.40
3/16	10	24	6	1/2	5 1/2	8.90
1/4	..	20	3	1 1/16	6	7.70
1/4	..	20	4	1 1/16	7 1/4	8.00
1/4	..	20	5	1 1/16	8 1/2	9.40
1/4	..	20	6	1 1/16	9 1/2	9.80
5/16	..	18	3	1 1/16	11	12.00
5/16	..	18	4	1 1/16	13	13.00
5/16	..	18	5	1 1/16	15	14.00
5/16	..	18	6	1 1/16	17	15.00

Toggle Heads Only

Bolt Size	1/8	3/16	1/4	5/16
Steel	per 100 \$6.30	\$6.40	\$7.00	\$9.00
Brass	per 100 17.64	17.92	19.60	25.20

Diamond Hammer Drills



Drills holes with safety and accuracy. Each sliding stroke of this telescopic hammer penetrates further, with greater accuracy and less effort. No danger of striking hand or wrist.

Drills up, down, horizontally and in awkward corners with no discomfort to the operator.

Used particularly for installing expansion shields and anchors.

Either Diamond N drill points or Di-Forge twist drill points may be used.

Weight, 5 pounds each.

Each, without points..... \$10.00

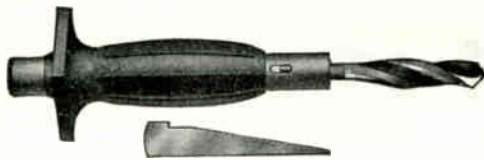
Diamond Style B Drill Holders



A hand drilling tool for electricians and in other lines of industry where numerous small holes are to be drilled for fastening small fixtures, etc.

Either Diamond N or Di-Forge drill points may be used. Style B, without Points..... each \$2.00

Diamond Style C Rubber Grip Drill Holders



Made of Vanadium steel, with a soft rubber grip with flange to protect the hand of the operator. Hexagon flange to prevent rolling.

Either Diamond N or Di-Forge drill points may be used.

Style C.....each \$4.00

Diamond Di-Forge Twist Drills



Forged from a solid bar of Vanadium tool steel. For use with a hand or electric hammer. Rotates clockwise if used with hand hammer; rotates continuously if used with electric hammer.

May be used with Diamond Styles B, and C and Diamond Hammer Drills.

Diam. In.	Per Dozen	Length Overall Inches	Depth Hole Inches	Wt. Lbs. per Dozen
3/16	\$10.80	2 3/4	1 3/8	1/2
1/4	10.80	3 1/4	1 3/4	3/4
5/16	12.80	4 1/4	2 1/2	1
3/8	14.80	5	3	1 1/2
7/16	18.80	5 1/4	3 1/4	1 3/4
1/2	22.80	5 3/8	3 1/4	2
9/16	26.80	5 1/2	3 3/4	2 3/4
5/8	28.80	5 3/4	4	3
3/4	32.50	5 7/8	4 1/4	3 1/4

Diamond N Drill Points



Drills are carefully tempered to insure sufficient hardness at the point to withstand the wear of cutting and the temper is drawn away toward the shank, so as to produce a softer steel where it enters the handle to prevent its breaking off at that point.

May be used with Diamond Drill Holders Styles N, B and C and Diamond Hammer Drills.

Size Inches	Per Dozen	Length Inches	Wt. Lbs. per Dozen	Size Inches	Per Dozen	Length Inches	Wt. Lbs. per Dozen
1/4	\$8.50	4 1/2	1 1/4	5/8	\$12.00	6 1/4	2 7/8
5/16	8.50	4	1 1/8	3/4	14.00	6	4 1/4
3/8	8.50	4 1/2	1 1/4	7/8	16.00	6 1/2	4 3/4
7/16	9.00	4	1 1/2	1	18.00	6 1/2	6
1/2	10.00	5	2	..	.....	...	...

Peirce Lead Sleeve Expansion Bolts

Galvanized



Consists of a steel bolt with a wedge or cone shaped end, tapering toward shank and provided with a lead sleeve.

No.	Per 100	Bolt Size In.	Overall Length In.	Drill Hole Diam. In.	Shipping Wt. Lb. per 100
1	\$9.20	1/4	1 3/4	1/2	7.7
2	9.50	1/4	2	1/2	8.8
3	9.80	1/4	2 1/2	1/2	8.8
4	11.90	1/4	3 1/4	1/2	11.0
4A	13.40	1/4	4	1/2	12.1
4B	16.80	1/2	5	1/2	13.2
5	16.50	3/8	2 1/2	5/8	16.5
6	17.60	3/8	3	5/8	17.6
7	18.90	3/8	3 1/2	5/8	18.7
8	22.10	3/8	4 1/2	5/8	20.9
9	22.40	3/8	5	5/8	22.0
10	23.90	3/8	5 1/2	5/8	23.1
11	24.70	1/2	2 1/2	7/8	45.1
12	29.10	1/2	3 1/2	7/8	51.7
13	30.70	1/2	4	7/8	55.0
14	31.50	1/2	4 1/2	7/8	58.3
15	33.50	1/2	5	7/8	61.6
16	34.80	1/2	5 1/2	7/8	64.9
17	37.10	1/2	6 1/2	7/8	68.2
18	41.70	1/2	8	7/8	80.3

Extra Lead Sleeves

No.	22	23	24
Per 100	\$3.20	5.00	15.40
For Bolt Diameter	1/4	3/8	1/2
Overall Length	3/8	3/4	1 1/2
Ship. Weight Per 100	3.3	6.6	24.2

Peirce Anchoring Units



Slip the iron cone of the anchoring unit on any standard machine bolt, (hex head recommended), with the largest diameter of the cone against the bolt head; slide the lead sleeve up to the

cone; insert in a hole of suitable size and tamp the same as an ordinary expansion bolt.

No.	1400	1402	1404	1406	1408
Per 100	\$39.40	50.70	61.70	73.40	86.50
Machine Bolt Diam.	1/2	5/8	3/4	7/8	1
Diameter Hole for Hex Head Bolts	1	1 1/4	1 1/2	1 5/8	1 7/8
Ship. Weight Per 100	44	55	82	93	110

Peirce Expansion Nuts

Installed independently, and tapped to receive the bolt.



No.	Per 100	Cone Material	Mach. Screw No. or Size In.	Diam. Drill In.	Min. Depth Hole In.	Shipping Wt. Lb. per 100
6200	\$5.76	Brass	6	1/4	3/8	.6
6202	6.88	Brass	8	5/16	1/2	1.0
6204	7.38	Brass	10	3/8	1/2	1.9
6206	9.78	Brass	12	7/16	3/4	2.6
6208	10.90	Brass	1/4	1/2	3/4	3.8
6210	14.80	Brass	5/16	5/8	7/8	7.7
6212	18.20	Steel	3/8	3/4	1 1/4	14.3
6214	22.80	Steel	1/2	7/8	1 3/8	22.0
6216	38.00	Steel	5/8	1 1/8	2	45.1
6220	83.90	Steel	3/4	1 3/8	2 1/8	75.9

No. 31 Peirce Expansion Shields



Used with wood or lag screws for masonry attachments.

Size screw, Nos. 20 and 22. Shield: diameter, 1/2 inch; length,

2 inches. Shipping weight per 100, 12 pounds.

No. 31.....per 100 \$14.80



Peirce Hammer Drills



Holes may be drilled in masonry with this drill in about one quarter of the time required by ordinary methods. The hazard of injured hands is also completely eliminated. Jammed drill points are quickly removed and most important, holes are neatly and quickly drilled. The outer end of the hammer drill is hollow for tamping lead sleeves. Chuck takes all sizes of drills.

No.	50	53
Per 100	\$2062.10	2196.30
For Tamping Bolt	inches 1/4	3/8
Ship. Weight per 100	pounds 825	880

Peirce Drill Points

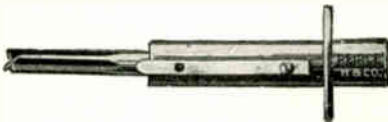


Made of fine tool steel, carefully tempered to the proper hardness and toughness. Two inches of the point is contained in the chuck.

Special sizes up to 1-inch diameter and any length can be furnished to fit Peirce Hammer Drill Chucks.

No.	Per 100	Drill Diam. In.	Overall Drill Length In.	Bolt Diam. In.	Shipping Wt. Lb. per 100
56	\$124.00	3/8	4	3/16	22
56-A	147.60	7/16	4	3/16	22
57	124.00	1/2	4	1/4	25
58	141.20	1/2	6	1/4	36
59	303.60	1/2	12	1/4	72
60	228.60	5/8	6	3/8	42
61	457.10	5/8	12	3/8	90
62	319.50	3/4	6	7/16	52
63	639.70	3/4	14	7/16	148
64	421.10	7/8	6	1/2	63
65	842.80	7/8	12	1/2	150

No. 55 Peirce Hand Chucks



Chuck allows the use of Peirce Drill Points with the old method of hand-and-hammer drilling. Similar to chuck of Peirce Hammer Drill. Will fit any Peirce Drill Points.

No. 55, Ship. Wt. 285 Pounds..... per 100 \$278.00

Peirce Tamping Tools



Used for tamping lead sleeves into masonry.

Nos. 47, 48 and 49 are straight slotted for use on hooks and similarly shaped items.

Nos. 67, 68 and 69 are straight for standard straight bolts or screws.

No.	47	48	49	67	68	69
Per 100	\$40.40	58.20	85.30	87.10	89.80	99.70
Diam. Expansion Bolt						
..... in.	1/4	3/8	1/2	1/4	3/8	1/2
Overall Length..... in.	6	6	8	6	6	8
Ship. Wt. per 100... lb.	30	64	110	37	54	132

No. 325 C & L Multi-Flame Torches
1-Quart Capacity
For Gasoline



The No. 325 Heavy Duty Torch has an extra powerful burner that produces a strong blue blast flame of remarkable volume and great heat intensity. Full flame control for heavy or light work. It will burn in any position.

Although this torch is regularly supplied for burning gasoline, by changing the burner jet, kerosene can be burned successfully.

Shipping weight, 5 3/4 pounds.

No. 325.....each \$11.10

No. 225 C & L Blow Torches
2-Quart Capacity
For Gasoline



Used by service stations and garage repair men, railroad shops, marine use, etc.

Multi-Flame burner; produces a 10-inch flame which may be closely regulated to small size, improved internal vein construction, cleaner tip on control needle.

Supplied with large size pump. Kerosene can be burned by changing the orifice block which will be furnished at no extra cost if specified. Ship. wt. 7 lbs.

No. 225.....each \$14.30

C & L Blow Torches

No. 32A, 1-Quart Capacity
No. 238, 1-Pint Capacity
For Gasoline



Performs perfectly either indoors or outdoors under severe weather conditions. Powerful burner of improved construction is fitted with wind shield and has self-cleaning, non-enlargeable gas orifice.

The quart size burner produces an intensely hot blue blast 7 inches long which may be regulated for lighter work. Pint size burner is smaller.

No.	32A	238
Each.....	\$9.10	7.10
Capacity.....	1 Qt.	1 Pt.
Ship. Wt.....lbs.	5	4 1/4

No. 144A C & L Blow Torches

1-Quart Capacity
For Gasoline



For the mechanic who uses a blow torch occasionally.

The self-cleaning burner is supplied with non-enlargeable orifice and cleaner tip on control needle.

Produces an excellent flame.

The pump is quick-acting having the T-handle and the lock-down feature for the pump plunger.

Shipping weight 4 3/4 pounds.

No. 144A.....each \$7.10

No. 252 C & L Tool Kit Torches

For Gasoline—1-Pint Capacity



Convenient to carry in tool kit and to use in corners and close places.

Burner produces powerful blast which may be regulated. It is equipped with non-enlargeable orifice and self-cleaning tip on control needle.

Tank is drawn from seamless cartridge brass and is so shaped that it will not tip over easily.

Thickness, 2 inches. Length, 5 inches. Height, 9½ inches.

Shipping weight, 4½ pounds.

No. 252.....each \$8.80

No. 158A C & L Single Needle Torches

For Gasoline



For use in the home workshop, garage or farm.

Produces a good sized flame, is economical in fuel consumption and has a long burning life.

Burner is of extra high grade bronze and the sharp point, self-cleaning needle has a large shoulder to prevent orifice enlargement. Burner is protected by a windshield for use outdoors.

Tank is finished chromium-plated brass and the quick acting T handle pump has the lock down feature for the pump plunger.

No. 158A.....each \$6.10

Capacity.....quarts 1

Shipping Weight.....pounds 4¾

No. 160A C & L Torches

1-Pint Capacity
For Gasoline



For the home workshop, garage or farm. Produces a good sized flame; operates outdoors perfectly.

Burner is made of high grade bronze, protected by windshield; self-cleaning needle is provided with large shoulder to prevent orifice enlargement.

Chrome-plated brass tank fitted with quick acting T handle pump. The lock down feature prevents the pump plunger from rising after pumping pressure. C & L patented interlocking fittings are used throughout.

Shipping weight, 4 pounds.

No. 160A.....each \$6.10

C & L Coil Fire Pots

1-Gallon Capacity

No. 22A, Pump Type—No. 12A, Bulb Type
For Gasoline



No. 22A

The drawn steel tank is leak-proof and heavily coated with tin inside and out. This prevents rust that works up into the coil and burner. Improved quick detachable coil unit and hinged door coil cup make it easy to clean and repair. Pump is extra large and powerful, producing air pressure quickly. Uprights and fittings are extra heavy.

No. 12A is exactly like No. 22A but fitted with air valve and bulb.

No.....	22A	12A
Each.....	\$13.30	13.20
Capacity.....	1 Gal.	1 Gal.
Shp. Wt.....lbs.	13¾	13½

No. 3428 Klein's Torches

1-Quart Capacity
Burn Gasoline

This torch is designed to meet the requirements of public utility companies.

Quick starting is insured by double length generating channels. Flame is intensely hot, and is easily regulated from minimum to full blast.

Will not back generate. Clean out plugs at all angles. Needle has positive shoulder stop which prevents damage to burner by enlarging orifice. Built-in pump is well made.

Tank is of heavy gage copper.

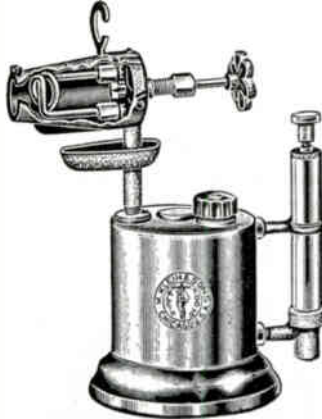
Weight, each, 5½ pounds.

No. 3428.....each \$26.70



U.S. PAT. NO. 1,676,352

Klein's 1-Quart Copper Tank Gasoline Torch



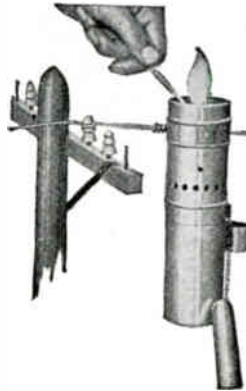
Has a generator coil. Intense heat around this coil completely vaporizes the fuel so that it burns as a dry gas, giving a hot, but easily controlled flame. Generator coil can be replaced in a few minutes at small expense by backing off two nuts. Burner tip is replaceable. Wt. each, 5½ lb.

No. 3428C...each \$28.50

If torch head assembly to attach to present tank is wanted, order No. 808C.

No. 808C...each \$15.30

No. 3420 Klein's Staysalite Linemen's Torches



This torch burns alcohol without odor or noise and stays lit in a wind.

Light and small and is lit or extinguished in a moment, as wanted. Has no adjusting parts.

The Staysalite is carried in the lineman's belt and eliminates the ground man; can be hung directly on the wire under joint to be soldered.

Provided with a cup for holding soldering paste. Can be used as a small heater or for soldering iron.

Weight, 1¼ pounds.

Price, No. 3420.....each \$10.00

Metal Melting Pots



These Metal Pots are of the deep pattern and hold sufficient metal or solder for all practical purposes, and fit any make of fire pot or furnace.

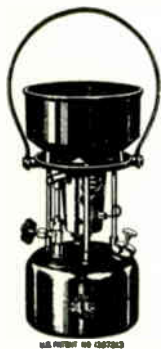
The 6-inch pot is the right size to fit the No. 1, large shield of Nos. 22 and 23 coil fire pots, also fire pots Nos. 1, 60, 70, 91, 26 and 27.

Price, 5-Inch.....	each \$1.65
Price, 6-Inch.....	each 2.00
Price, 7-Inch.....	each 5.00

No. 3529 Klein's Furnaces

1-Gallon Capacity

Burns Gasoline or Kerosene



This sturdy furnace is made to stand up to field requirements of public utility companies.

Quick starting is insured by multi-coil burner which vaporizes the fuel thoroughly.

A simple cleaning device removes carbon deposit without taking burner apart. Tank is formed of heavy gage steel with bottom rolled in—no chance for leaks due to wear. All fittings are brazed.

Furnace operates on either gasoline or kerosene without any change of parts.

Furnished with pump in fount, and with No. 3010 Windshield unless otherwise specified. Weight each, 20½ pounds. No. 3529.....each \$40.00

No. 3010 Klein's Furnace Shields

(Regularly Furnished with No. 3529 Klein's Furnaces unless Otherwise Specified)



Made of heavy gage sheet steel. The top edge is rolled and the bottom is reinforced with a heavy ring. All joints are welded.

Diameter at top, 9 inches. Weight each, 3 pounds. No. 3010.....each \$4.00

Klein's Folding Windshields



Made of heavy galvanized sheet steel in four leaves each 24 inches high and 18 inches wide hinged together. Hinges are securely riveted. Grate made of 3/16x3/4 inch steel, welded and swings on one leaf of the shield.

Grate designed so that it can be used with melting pot or the larger sizes of wax kettles.

Weight each, 42 pounds.

No. 3020, With Welded Grate.....each \$25.00

C & L Wrought Steel Melting Ladles

Double Lip, Extra Deep



Size.....inches 2½ 3 3½ 4 5 6
Each.....\$1.00 1.20 1.40 1.60 2.10 2.40

Kester Plastic Rosin-Filled Solder

For Electrical and Radio Work



Its plastic rosin flux is non-corrosive and electrically non-conductive.

The flux flows, as the solder melts, in just the right amounts for a perfect soldering job.

Requires only heat.

Standard size, 3/32 inch, about 50 feet to the pound.

Size Spool.....pounds 1 5 20
Each.....

Kester Acid-Filled Solder

For General Soldering



Easy to use, saves time, and is dependable for a permanent bond.

Contains a scientifically prepared flux that flows in just the right proportions as the solder melts. Requires only heat.

Standard size, 1/8 inch, about 25 feet to the pound.

1-Pound Carton.....each
1-Pound Spool.....each
5-Pound Spool.....each
20-Pound Spool.....each

Nokorode Core Solder



Ready for instant use; can be used for all kinds of soldering. Will replace acid or resin core solder.

Made of pure virgin tin and lead, with the proper amount of flux to a given amount of solder. Works quickly and leaves a strong, permanent soldered joint.

Nokorode Core Solder is so combined that the flux is in a solid form, care being taken that all parts of the solder contain flux. When heat is applied, the flux does not run out and leave parts of the solder that must be thrown away.

Put up in 1½-ounce and ¼-pound packages, 1, 5, 10 and 20-pound spools.

Prices upon application.

Bar Solder



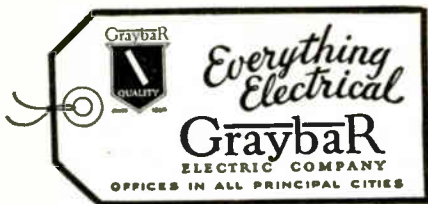
An alloy of tin and lead, made up in the form of bars for convenience in handling, for making soldered joints in metals, such as lead piping systems, for cable splices and other heavy work.

Price, Solder in Regular Bars.....per pound \$1.00

Soldering Coppers



Furnished without handle but having an iron rod fastened to the head, ready to be driven into a wooden handle. Supplied in all sizes. Prices upon application.



Ideal Acid Core Solder



Metal virgin tin and lead—no scrap metals used. A superior liquid soldering acid flux. Size of solder approximately No. 8 standard gage.

Put up in spools only of 1, 5, 10 and 20 pounds each.

Prices upon application.

Gem Rosin Core Solder



Metals virgin tin and lead—no scrap metals used. Rosin flux. Size of solder approximately No. 11 standard gage.

Put up in 1½-ounce packages and in spools of 1, 5, 10 and 20 pounds each.

Prices upon application.

Allen Neutral Rosin Fluid Flux



Flux of absolute safety for electric motors, telephone, radio, commutators, instrument work, fine wires, etc.

Can be spilled on the work and allowed to remain forever with no corrosion hazard to finest wire or metals.

Absolutely neutral and moisture free and non-conductive to electrical current.

Size Can.....	1 Quart	1 Gallon
Each.....	\$.85	3.00
No. in Carton.....	3	1

Allen Aluminum Solder



Complete solder and flux combined. Requires only heat to permanently join aluminum to itself or other metals.

Card contains twelve 3-inch pieces.

Cards packed 2 per carton; bars and wire, 6 pounds to carton.

Per Card.....	each	\$2.28
¼-Pound Bars.....	per pound	2.00
1-Pound Bars.....	per pound	1.50
Wire, ½-Inch, 11-Gage, Square.....	per pound	2.20

Nokorode Soldering Paste



This paste will flux all metals except aluminum. It takes the place of acid in all soldering jobs. Non-corrosive, safe as resin and rapid as acid. Not affected by heat and does not spatter. The solder will not turn dark after using this paste.

In Cartons

Size Can.....	2-Oz.	1-Lb.
Per Can.....	\$.10	\$.70
Per Carton.....	1.20	4.20
No. Cans in Carton.....	12	6

By Pound

Size Can.....	pounds	10	25	50	100
Per Pound.....		\$.50	.45	.43	.40

Allen Ezy-Flo Torch Formula Soldering Paste



Special soldering paste for torch and sweat joint soldering. Works well with the soldering iron.

Job	2	4	1½	1	5
Size Can.....	Size Oz.	Oz.	Lb.	Lb.	Lb.
Each.....	\$.08	.13	.25	.50	.90 4.40
No. in Carton	24	24	24	12	6 1

Allen Soldering Paste

A corrosion free, soft form of flux. Underwriters' Approval.



Size Container	Each	No. in Carton
Job Size	\$.08	24
2-Ounce Can	.13	24
4-Ounce Can	.25	24
½-Pound Can	.50	12
1-Pound Can	.90	6
5-Pound Can	4.40	1

Star and Crescent Soldering Paste

Assures a smooth, even-flowing metal and perfect results. Thoroughly mixed, so that each paste particle contains all the flux elements. Strong and rapid in action and non-corrosive. Packed in tin boxes.



Cat. No.....	2775	2776	2777	2778
Size Tins.....oz.	2	4	8	16
Price.....each	\$.25	.35	.55	1.00

Burnley Soldering Paste

Requires no preparation, always ready for instant use.



Size Can	Each	Size Can	Each
2-Oz.	....	5-Lb.	....
4-Oz.	....	10-Lb.	....
½-Lb.	....	50-Lb.	....
1-Lb.	....	.....	....

Allen Soldering Sticks



An economical rapid flux. Just a touch to the hot metal does the work.

Fuses the solder rapidly without fuss, muss or after corrosion. Size, 1x5¼ inches.

Samson Formula.....	each	\$.15
Standard Formula.....	each	.30

Burnley's Soldering Sticks



Size of stick: 6 inches long, 1 inch diameter. Standard package, 3 dozen in a carton.

Each..... \$.30

No. 2774 McGill Star and Crescent Soldering Sticks



Each stick is tinfoil wrapped and packed in pasteboard tube with cap ends. Weight per 100 sticks, 22 pounds. No. 2774..... each \$.25

Nokorode Soldering Fluid



Eliminates the use of corrosive soldering acid.

It is ready for instant use.

Solution is strong. May be cut with water for light work.

Size Container.....	gallon	1	5	55
Per Gallon.....		\$ 1.50	1.10	.70

Allen Soldering Salts



These salts are dry and in concentrated form. To make up a perfect flux of sufficient strength to use on old metal add three parts water to one part salts; on new metal, use even greater dilution.

Size Bottle	1/2-Lb.	1-Lb.	5-Lb.
Each	\$.40	.59	2.70
No. in Carton	12	6	1

Crescent Soldering Salts



A combination of several of the most efficient soldering agents in a convenient soluble form. Gives off no obnoxious gases. Much superior to old time acids for the designed purpose.

Price, No. 2779, 1-pound	each	\$.90
" " 2780, 1/2 "	"	.68

Burnley's Soldering Salts



Size Can Pounds	Per Pound			
	QUANTITY, POUNDS			
	1 to 25	100	200	300 and Over
1/2	\$.65	\$.58	\$.53	\$.48
1	.62	.55	.50	.46
5	.48	.42	.38	.36

Nokorode Soldering Salts



Size Can	Standard Package	Per Pound	Per Carton
6-Oz.	12 to Carton	*\$.20	\$ 2.40
1-Lb.	6 to Carton	.50	3.00
5-Lb.	Any Quantity	.40	
25-Lb.	Any Quantity	.30	
50-Lb.	Any Quantity	.27	
100-Lb.	In Drum	.24	

*Each

No. 55 National Pyramid Brush Assortment

For Fractional Horsepower Motors



Brushes for vacuum cleaners, fans, vibrators, electric ironers, washing machines, sewing machines, food and drink mixers, heat regulators, pumps, electric tools, cash registers and office appliances.

Designed for effective counter or store display. Resale prices for each brush and spring shown on the label in each compartment. Contains 198 brushes of 17 different sizes (3 sizes complete with shunts, springs and terminals) and 100 springs in 3 sizes.

Sizes range between 3/8 in. square and 3/16 in. square with 10 intermediate sizes of round and rectangular brushes including 3 types of brushes with shunts, springs and terminals. Springs are made of the best grade phosphor bronze wire.

No. 55 Assortment Complete..... \$10.00

Sticka Black Friction Tape

A popular-priced tape for general use.

Used to protect the splicing compound on a wire joint from abrasion.

Roll contains 1/2 pound gross of 3/4-inch tape, length 60 feet to a roll.

Available in 1/4-pound rolls. Special widths furnished packed in foil.

Per Pound..... \$.36



Victor Black Friction Tape

Protects the splicing compound on wire joints from abrasion.

A high grade tape for outside or inside work.

Roll contains 1/2 pound gross of 3/4-inch tape, 67 1/2 feet to a roll.

Also furnished in rolls 2 inches wide, 67 1/2 feet per roll, for repairing lead-covered telephone cables. Approximate weight per 2-inch roll in foil, 19 1/4 ounces.

Available in 1/4-pound rolls. Special widths furnished packed in foil.

Per Pound..... \$.38



Amazon A.S.T.M. Black Friction Tape

Highest quality friction tape to meet the most strict specifications.

Roll contains 1/2 pound gross of 3/4-inch tape, which is 82 1/2 feet to a roll.

Available in 1/4-pound rolls. Special widths furnished packed in foil.

Per Pound..... \$.40



Vim Gray Friction Tape

Vim tape is distinctly a quality tape. It has a very high percentage of rubber in the friction compound, giving unusually high insulating properties and long life.

Packed in tin cans. Roll contains 1/2 pound gross of 3/4-inch tape, length, 82 1/2 feet.

Available in 1/4-pound rolls. Special widths furnished packed in foil.

Per Pound..... \$.70



Manson Friction Tape

Has a closely woven cotton fabric of highest quality into which has been frictioned (on both sides) a rubber compound containing new Hevea rubber with chemically pure admixture.

Rolls, 3/4 in. wide, containing 80 feet, black, per lb..... \$1.10



Ru-ber-oid Insulating Tape

Will not vulcanize with heat or become defective by exposure or use, will not dry and crack or harden; water, acid and alkali-proof.

Furnished in half-pound rolls 3/4 inches wide; other widths to order. Black Tape..... per pound \$.75



Amazon A.S.T.M. Splicing Compound (Rubber Tape)



Designed for the severest kind of service. Meets the A.S.T.M. and A.R.A. specifications as well as U.S. Navy specification 17-T-1d. Because of the high percentage of pure plantation rubber this tape is extremely elastic. Will amalgamate into a solid tube to make a watertight joint. Will withstand dielectric test of at least 350 volts per mil of thickness. Roll contains 1/2-pound gross of 3/4-inch No. 8 tape; length, 30 feet. Also available in 1/4-pound rolls. Special widths packed in foil only.

Per Pound..... \$.49

Victor Splicing Compound (Rubber Tape)



This tape is second in quality only to Amazon. It is designed primarily for ordinary service. Its performance has more than justified the high recommendation which has been given to it. Will withstand a dielectric test of 300 volts per mil of thickness. Roll contains 1/2-pound gross of 3/4-inch No. 8 tape; length, 21 feet. Also available in 1/4-pound rolls. Special widths packed in foil only.

Per Pound..... \$.40

Okonite Rubber Tape

Made from fine Up-River Para rubber. Ingredients are selected, prepared and mixed with care.

Impervious to moisture.

Rolls, 3/4 in. wide, containing 30 feet, black, per lb.....\$1.70

Hydro-Proof Tape

A waterproof tape with an average dielectric strength per layer of 1850 volts.

Width, 3/4 inch.

Packed 24 yards per 8-ounce roll.

Per Pound..... \$1.00

Scotch Electrical Tape For Neon Signs



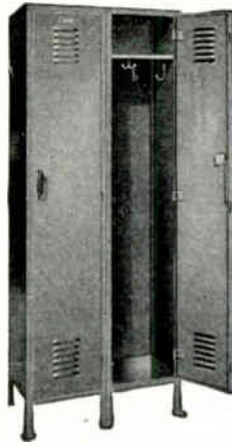
A black tape particularly adapted for blocking out turnbacks and spacing between letters on Neon signs.

Requires no moistening to apply; permits of faster working. Has instant adhesion to glass and the slightest pressure seals it. Will withstand all weather conditions.

The thinness of this tape makes for easier wrapping. Rolls contain 72 yards.

Width.....inches	1/4	3/8	1/2	3/4	1	1 1/2	2
Per Roll.....	\$.66	.78	.90	1.14	1.38	2.10	2.76

Single Tier Clothes Lockers



In heights of 60 and 72 inches, plus 6 inch legs.

Shipped knocked down or set up. When shipped set up sections must not exceed 72 inches in width.

Nominal Width Overall Inches	Nominal Depth Overall Inches	Nominal Width Overall Inches	Nominal Depth Overall Inches
12	12	15	18
12	15	15	21
12	18	18	18
12	21	18	21
15	15	..	..

No. 854 Hat and Coat 7-Compartment Lockers



Large compartment is fitted with coat rod, no hooks. Letter plates A, B, C, D, E, F, and G are on doors of each small compartment with a number plate at the top center of the section.

Locks on all small hat compartments are different. The large coat compartment can be opened only with the key of one of the small compartments in the same section.

Standard locks: flat key group locks, master-keyed.

Overall dimensions: width, 36 in.; depth, 20 in.; height, 78 in. Shipped set up complete as shown.

Office or Janitors' Lockers



Equipped with one adjustable shelf.

Fitted with flat key lock.

Extra shelves furnished if specified.

Finish, green baked enamel.

Shipped set up completely as shown.

No.....	F-414	F-415
Width.inches	36	36
Depth.inches	18	24
Height inches	78	78

No.F-410 Storage Cabinets



For storing stationery, instruments, auto robes, etc.

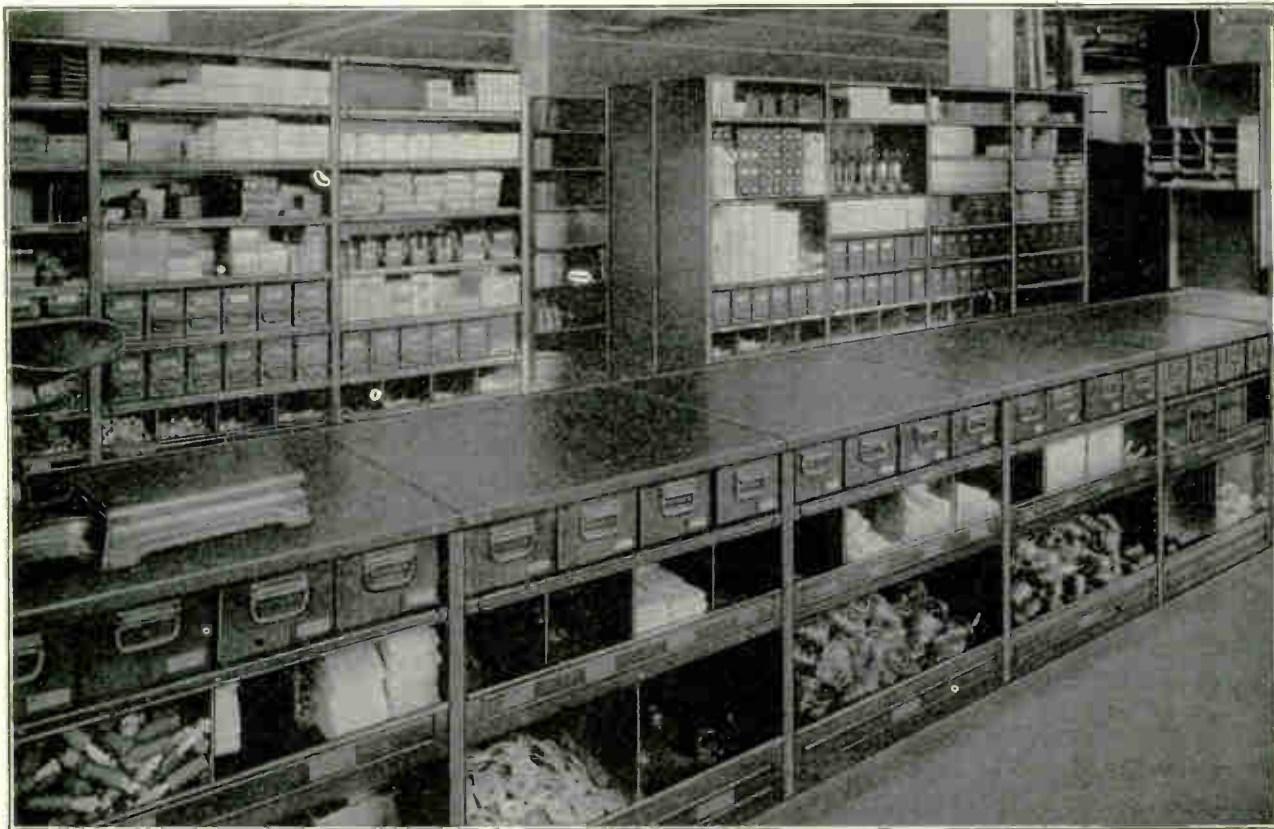
Equipped with four shelves, adjustable on 2-inch centers. Extra shelves furnished if specified.

Doors have 3-point locking device controlled by flat key lock; two keys; master-keyed.

Finish, green baked enamel.

Overall dimensions, 36x18x78 inches. Shipped set up completely as shown.

Lyon Steel Equipment



Typical Industrial Installation Lyon Steelart Shelving



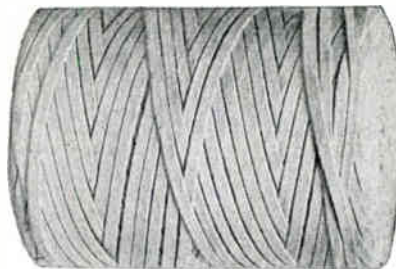
Steelart Shelving With Ledge—Various Size Openings Show Complete Adjustability

Hope Linen Finish Tape

Width Inches	PATTERN NUMBERS				Gross Yds. in Std. Pkg.
	.007 Inch Thick		.005 Inch Thick		
	Standard A	Standard B	Light Weight	Standard Special	
1/4	.....	.....	.....	25001	5
3/8	19154	.....	.....	8769	5
1/2	13869	28864	29257	.....	28799
5/8	19002	28865	29850	25002	5
3/4	13870	28866	29258	25003	29892
7/8	15845	.....	.....	25004	5
1	13871	28867	29259	8844	29893
1 1/4	14769	.....	.....	25005	2 1/2
1 1/2	13872	28869	29260	.....	2
2	17974	.....	.....	.....	2

Width Inches	Linen Finish Thick	PATTERN NUMBERS			Gross Yds. in Std. Pkg.
		Silk	Herringbone	Medium Twill	
1/4	.....	24931	.....	25006	5
3/8	28858	24932	.....	.....	5
7/16	.....	24933	.....	.....	5
1/2	29769	24934	22390	25007	5
5/8	.....	24935	.....	.....	5
3/4	29698	24936	22394	13100	5
1	28236	.....	(5)22398	16628	6291
1 1/4	.....	.....	.....	6290	3
1 1/2	29590	.....	.....	19184	6289
2	.....	.....	.....	.....	4544

Hope Grey Cotton Sleevng

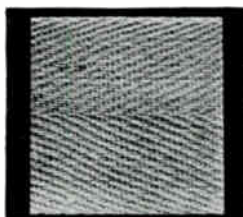


Internal Diameter Inches	Pattern No.	Covers Size Wire Gage	Approx. Yds. per Lb.	Internal Diameter Inches	Pattern No.	Covers Size Wire Gage	Approx. Yds. per Lb.
1/16	0	14-20	525	7/32	6	4-8	120
3/32	346	10-14	250	1/4	61	2-4	85
1/8	1	13-9	215	5/16	8	0-2	80
5/32	2	10-7	180	5/16	9	1-2	110
1/8	3	9-10	160	3/8	10	00-2	60
1/8	345	9-11	270	3/8	79	00-1	75
5/32	1030	6-8	200	13/32	11	000-1	70
3/16	4	5-10	215	1/2	12	00-2 No. 0	60
3/16	5	5-8	120	3/16	13	5-8	170

Also furnished in red, blue and black. Standard package 1 pound tube.

Prices upon application.

Hope Webbing



Anchor Brand Flexible Tubing and Saturated Sleevng

Manufactured in standard sizes and colors.

Furnished in three foot pieces or continuous lengths on spools. A small additional cost for special cut lengths.

Furnished in three grades.

Grade F.R.

Often referred to as Radio Spaghetti or Varnished Tubing by the trade.

The special coating is not affected by water or oil and is highly resistant to acids.

Has high dielectric strength and will retain its flexibility and lustre for years.

Adaptable in colors to a wide range of uses as a decorative and protective covering.

Grade D.S.

Heavily saturated and coated with a slow burning insulating varnish.

Adapted to wide use in radio assembly. Can be cut in small pieces with clean non-fraying ends.

Ideal for covering leads in small motors and as a protection for wires, terminals, etc.

Dielectric strength is ample for all ordinary commercial applications.

Width Inches	PATTERN NUMBERS					Gross Yds. in Std. Pkg.
	Heavy	Extra Heavy	Standard Service	Special Service	Special Non-Elastic	
1/2	.....	.....	7699	18840	24732	5
3/4	18375	19451	5281	19003	25020	5
1	8730	(5) 7251	(5) 5224	15618	29053	3
1 1/4	9982	(2 1/2) 11838	5298	19004	14671	3
1 1/2	1613	1258	8870	18146	(2 1/2) 29262	3
2	9999	.....	9058	18486	.....	2
2 1/4	.....	.....	.....	19750	.....	2
2 1/2	.....	.....	(2) 15859	16139	.....	1 1/2
2 3/4	.....	.....	.....	16130	.....	1 1/2
3	.....	.....	15861	.....	.....	1 1/2

All above items in rolls of 36 yards each. Minimum order 1 standard package. (Parenthetical figures show variations from noted standards in gross yards).

Lead Sleeves

Lead sleeving of any diameter, length or thickness to meet any specific requirements can be furnished.

Sizes Recommended for Use with Western Electric Standard 19 and 22-Gage Cables

Thickness of sheath wanted must be specified.

Size Cable, Pcs.	19 Gage		22 Gage	
	I.D., In.	Lgth., In.	I.D., In.	Lgth., In.
6-11-16	3/4	15	3/4	15
26	1	15	3/4	15
51	1 1/2	15	1 1/4	15
76	1 3/4	17	1 1/2	15
101	2	17	1 1/2	15
152	2 1/2	20	2	17
202	3 1/4	20	2 1/2	17
303	3 1/2	20	2 3/4	20
404	4	20	3	20
455	4	20	3	20
606	.....	.....	3 1/2	20
909	.....	.....	4	20

Size No.	Internal Diam. Inches	Approx. Diam. Inches	Size No.	Internal Diam. Inches	Approx. Diam. Inches
20	.034	1/32	8	.133	1/8
19	.038	..	7	.148	3/64
18	.042	..	6	.166	5/32
17	.047	3/64	5	.186	3/16
16	.053	..	4	.208	15/64
15	.059	1/16	3	.234	15/64
14	.066	..	2	.263	17/64
13	.076	5/64	1	.294	19/64
12	.085	..	0	.330	21/64
11	.095	3/32	00	.375	3/8
10	.106	7/64	000	.437	7/16
9	.118	..	0000	.500	1/2

Fiberglas Electrical Insulations

Fiberglas Electrical Insulating Materials provide an inorganic, temperature-resistant, flexible insulation of exceptional electrical characteristics in a convenient form for application to all types of electrical equipment.

These products are woven of Fiberglas electrical yarns. They are pure glass throughout, except for the fiber coatings which are applied to facilitate manufacture and, in the case of impregnated materials, the impregnants added in later stages of manufacture.

Complete Line of Electrical Insulation

The yarn is used in the insulation of magnet wire. Fiberglas-insulated magnet wire now is available in a wide variety of sizes and cross-sections for use in all types of electrical equipment.

Fiberglas tapes and braids are available for the insulation of all forms of electrical equipment. Fiberglas tying cord also can be supplied.

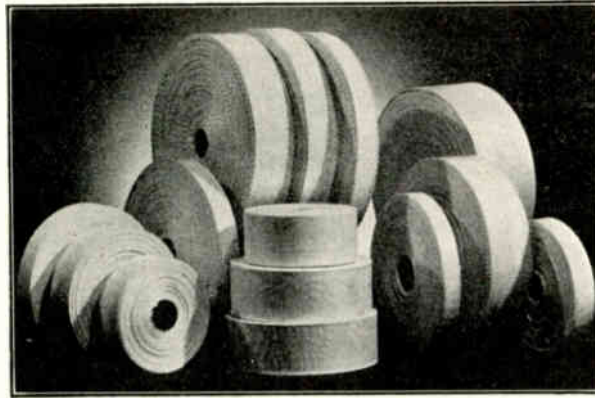
Fiberglas cloth is used as a base in the fabrication of varnished cloth or cambric and as a backing for mica. It can be supplied in full cloth width or cut into narrow tapes. A complete line of Fiberglas-mica cloths and tapes is available.

It also serves as the base of material for laminated products which are supplied in a variety of thicknesses and which can be machined or formed into intricate shapes as required.

All these Fiberglas products are used for electrical insulation in the same manner as any standard textile product.

Applications

Electrical insulating tapes are handled and applied to coils, cables and other electrical elements in exactly the same manner as standard tapes made of



Tapes

other materials. High tension may be applied to produce tighter windings and thinner tapes may be used where desired for space economy with equivalent electrical protection.

In the winding of pancake coils part of the Fiberglas tape may be cut away in order to reduce the thickness of the overlapping layers at the inner circumference of the sharp bends. The remaining fraction of the width of the tape has sufficient tensile

strength to permit this practice. A more compact and neater winding results.

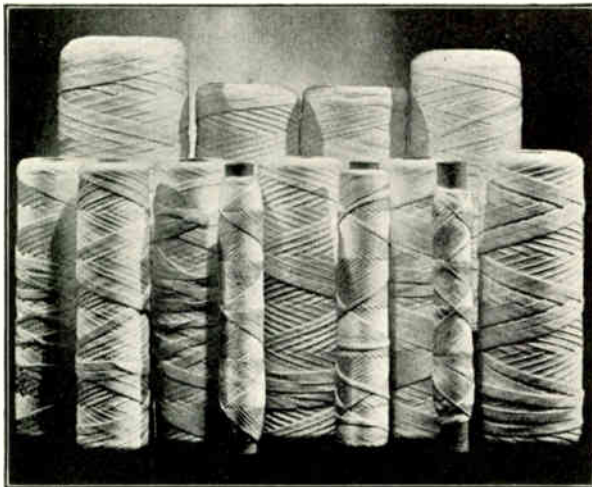
Physical Properties

Fiberglas electrical slivers, rovings, and yarns bring to the electrical industry a unique insulating material combining desirable properties hitherto not found together in any single material. These properties include:

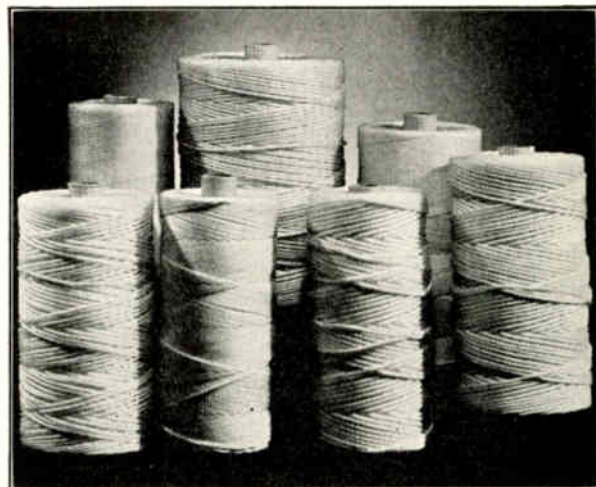
NON-INFLAMMABILITY AND HIGH HEAT RESISTANCE.

Fiberglas electrical textiles will successfully withstand temperatures in excess of 1000°F. without impairment of their electrical properties, and temperatures in the neighborhood of 650°F. before losing their original flexibility and resiliency. The output rating of a piece of electrical equipment is limited first of all by the temperature its insulation will stand without excessive deterioration. The commonly used types of organic insulation, that is, cotton, silk, linen and paper, rarely permit a rated temperature rise greater than 55°C. (99°F.) over an ambient temperature of 40°C. (72°F.). Where higher temperatures are unavoidable, asbestos has been used if the attendant space factor was not prohibitive, and the low tensile and dielectric strengths were not of great importance.

Mica has been used extensively but its lack of



Braids



Tying Cords

Fibreglas Electrical Insulations

Continued

mechanical strength and its high cost have imposed certain limitations. The maximum operating temperature of electrical apparatus is now limited only by the impregnant used, for Fibreglas yarns will withstand higher temperatures than any impregnant now available. Between the temperature limits of organic fibers and of the best electrical impregnants there is a field of use in which Fibreglas electrical textiles stand unique.

MOISTURE RESISTANCE. The individual glass fibers are non-absorbent, a property of obviously major importance in many electrical applications.

RESISTANCE TO ABUSE. Fibreglas electrical insulation is resistant to external abrasion and to attack by moisture, acids, oils, and most corrosive vapors.

SPACE CONSERVATION. Because Fibreglas electrical yarns and tapes combine high temperature resistance, exceptional electrical properties, and great tensile strength, they permit the design of many types of electrical equipment with a substantial decrease in the total volume occupied by insulation materials.

Electrical Properties

The electrical properties of Fibreglas electrical insulating tapes are shown in accompanying diagrams and tables. The dielectric strength, which is the ability of a dielectric material to resist penetration by electrical discharges through the thickness of the material, is shown in the chart for representative Fibreglas tapes and cloths that have been impregnated with various standard materials.

The dielectric strength of unimpregnated tapes differs little between various materials because the openings within the weave of the tape reduces the insulation value of the materials substantially to that of the air within these voids.

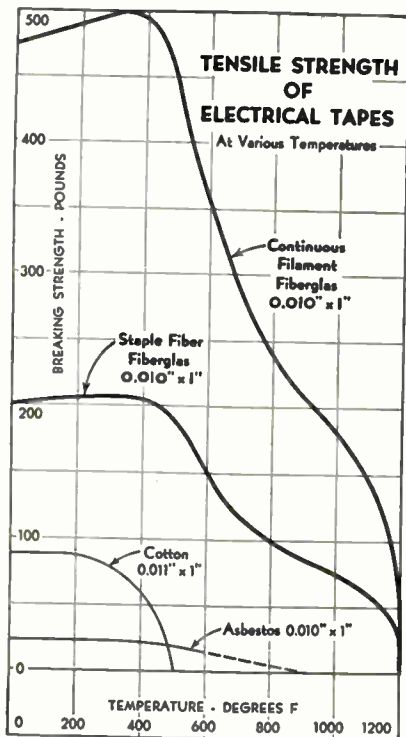
The insulation resistance of Fibreglas tapes, which is the insulating value of the tape, is shown in the chart. Insulation resistance of unimpregnated materials varies with the moisture content and surface contamination. Since water is a good conductor of electricity, insulation resistance tests show the advantage possessed by Fibreglas over other materials listed in the table because of the non-absorbent and non-hygroscopic character of the individual fibers.

Factor of Safety

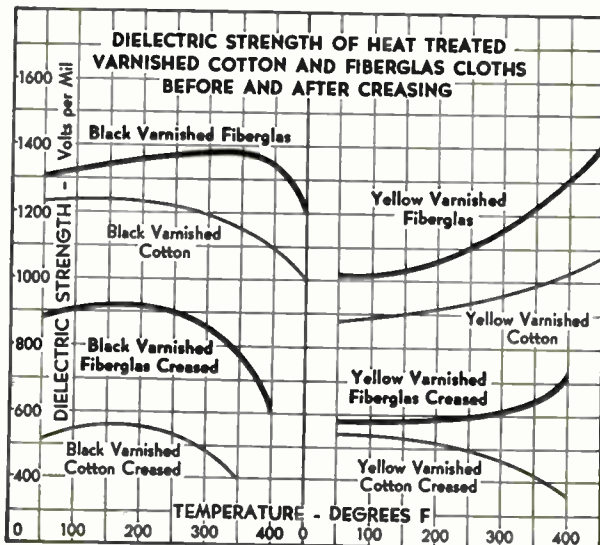
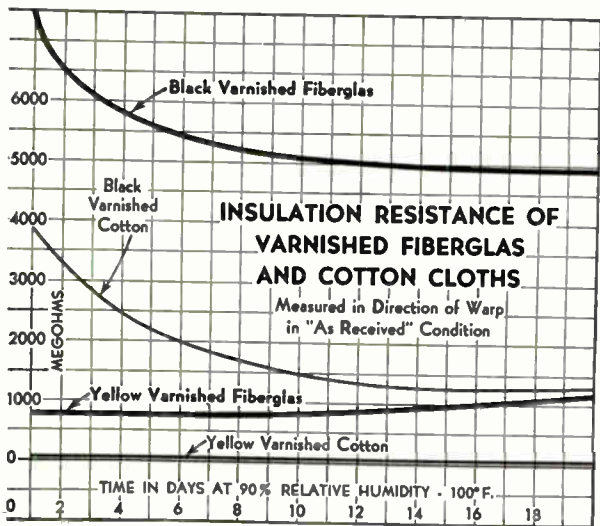
These same characteristics of Fibreglas insulation may be applied to existing equipment without change of design with the result that a substantial increase in the operating factor of safety is introduced and the life of the equipment is generally greatly extended.

For example, standard motors formerly wound with organic insulation materials which have failed in service may be rewound with Fibreglas tapes or other forms of insulation and may thereafter be overloaded beyond the point which caused failure of the organic materials.

In effect this not only increases the factor of safety in the operation and reliability of equipment, but it also increases the potential output under continuous overload.



Note that the tensile strength of Fibreglas tapes is stronger at 800°F. than either cotton or asbestos tapes at ordinary room temperatures. The limiting service temperature of Fibreglas tapes is determined by the impregnant used.



Mica Insulator Company

From the mines in India to the finished product the Mica Insulator Company controls each step. Dependable Mica Insulating Materials are the result of this control. Lamicoid insulation made by Mica Insulator Company must meet the same strict standards set for Mica Materials and this is also true of Empire oiled insulating materials and Mico Materials.

Constant research, careful manufacturing, and tested materials work together in assuring the user that Mica Insulating Products will satisfy his most rigid requirements. Graybar, distributor for Mica Insulator Company, will make available to you their years of experience and research in this field.

Lamicoid Sheets, Rods and Tubes

Lamicoid is a laminated bakelite product made by moulding treated paper or fabric under heat and hydraulic pressure into uniformly dense, strong, non-hygroscopic sheets. Made in various types of sheets, rods, tubes, and special shapes to meet differing specific applications. Lamicoid is used where the qualities of strength, toughness, high dielectric values, low moisture absorption, resistance to chemicals, lightweight, and fine surface are important.

Lamicoid Sheets

Nema Grade	Sheet Stock			N.E.M.A. Grade	Sheet Stock		
	Natural No.	Black No.	Chocolate No.		Natural No.	Black No.	Chocolate No.
X	6000	6001	.....	C	6030	.....	.....
XP	6015	6016	6014	CE	6031	6032	.....
XKP	6093	6095	6094	C	6036	.....	.....
P	.....	.....	6070	L	6040	6041	.....
XX	6020	6021	.....	LE	6045	6046	.....
XXX	6022	6023	.....		6043	Spider	Stock
XXP	6029	.....	.....		6044	Spider	Stock
XXXXP	6028	.....	.....	A	6060	6061	.....
Odorless	.....	6024	.....	AA	6063	.....	.....

Thickness Inches	Per Pound	
	N.E.M.A. Standard Limits	Close Limits or Sanded Surfaces
.010 and Under	\$5.00	\$5.00
Over .010 to .015 Inclusive	3.50	4.40
Over .015 to .025 Inclusive	3.00	3.65
Over .025 to .035 Inclusive	2.35	2.75
Over .035 to .050 Inclusive	2.20	2.55
Over .050	2.00	2.20

When thickness limits are specified, the nominal size for pricing purposes shall be the mean of such specified upper and lower limits.

Opaque Lamicoid Engraving Stock

No. 7025 Black Surface White Core
No. 7031 White Surface Black Core
Sheet Size, 36x42 Inches

Thickness Inches	Per Lb.	Approx. Wt. Lb. per Sq. Ft.
*.020	\$3.00	.144
*1/32	2.35	.225
3/64	2.20	.338
1/16	2.00	.45
3/32	2.00	.675
1/8	2.00	.9
5/32	2.00	1.125
3/16	2.00	1.35
1/4	2.00	1.8
3/8	2.00	2.7
1/2	2.00	3.6

*No. 7031 is not made in these sizes.
Intermediate thicknesses at price of next thickness.

Lamicoid Rods

Length, 40 Inches

Diameter Inches	Per Foot	Diameter Inches	Per Foot
1/4	\$3.39	1 1/4	\$3.08
5/16	.44	1 3/8	3.69
3/8	.52	1 1/2	4.33
7/16	.64	1 5/8	4.96
1/2	.77	1 3/4	6.19
9/16	.91	1 7/8	7.32
5/8	1.08	2	8.63
11/16	1.22	2 1/4	10.94
3/4	1.41	2 1/2	13.50
7/8	1.77	2 3/4	16.34
1	2.16	3	19.44
1 1/8	2.62	.....	.....

For intermediate sizes use list price of next larger size.

Translucent Lamicoid

Approximate Sheet Size, 36x42 Inches (10 1/2 Sq. Ft.)

Modern material used for modern displays, lighting fixtures, advertising novelties, and countless other applications where illuminated effects are desired.

Standard finish: glossy one side, satin reverse side.

It is sometimes necessary to trim sheets smaller than the standard size sheet. The right is reserved to ship the smaller size sheet and invoice on the basis of the area of the size shipped.

No.	Color	No.	Color	No.	Color
7407	Pastel Blue	7412	Green	7430	White
7408	World's Fair Blue	7415	Orange	7433	Ivory
7409	Light Blue	7419	Red	7437	Amber
7410	Dark Blue	7420	Scarlet	.....	.....

Approx. Thickness Inches	Per Sq. Ft.	Approx. Wt. Lb. per Sheet
.010/.015	\$.30	.94
.016/.020	.35	1.48
.025	.41	1.85
.030 (1/32)	.48	2.22
.040	.61	2.95
.050	.75	3.69
.060 (1/16)	.88	4.6
3/32	1.40	6.8
1/8	2.00	9.2
3/16	2.90	14.5
1/4	3.80	18.4

Translucent Lamicoid Engraving Stock

Glossy or satin finish.

No.	Surface	COLOR	
		Translucent Core	Translucent Back
7425	Black	.....	White
7507	Black	White	Pastel Blue
7508	Black	White	World's Fair Blue
7509	Black	White	Light Blue
7510	Black	White	Dark Blue
7512	Black	White	Green
7515	Black	White	Orange
7519	Black	White	Red
7520	Black	White	Scarlet
7533	Black	White	Ivory
7537	Black	White	Amber

Thickness Inches	Per Lb.	Approx. Wt. Lb. per Sq. Ft.
.020	\$3.00	.14
1/32	2.35	.22
3/64	2.20	.33
1/16	2.00	.45
3/32	2.00	.67
1/8 and Over	2.00	.9

Intermediate thicknesses at price of next thickness.

Lamicoid Tubing

Continued

Standard Lengths

Rolled Tubes

Molded Tubes

Base Material	Inside Diameter Inches	Wall Thickness Inches	Length Inches	Base Material	Inside Diameter Inches	Wall Thickness Inches	Length Inches
Paper	.090 to .124	$\frac{1}{32}$ and Above	12	Paper	.090 to .124	$\frac{3}{64}$ and Above	12
	.125 to .499	$\frac{1}{16}$ and Above	24		.125 to .249	$\frac{3}{64}$ and Above	24
	.500 and Above	$\frac{1}{8}$ and Above	36		.250 and Above	$\frac{3}{64}$ and Above	40
Linen	.090 to .124	$\frac{1}{32}$ and Above	12	Linen	.093 to .124	$\frac{3}{64}$ and Above	12
	.125 to .499	$\frac{1}{16}$ and Above	24		.125 to .249	$\frac{3}{64}$ and Above	24
	.500 and Above	$\frac{1}{8}$ and Above	36		.250 and Above	$\frac{3}{64}$ and Above	40
Canvas	.562 and Above	$\frac{1}{16}$ and Above	36	Canvas	.375 and Above	$\frac{1}{16}$ and Above	40

Per Foot

I.D. Inches	WALL THICKNESS, INCHES																			
	$\frac{1}{32}$	$\frac{1}{16}$	$\frac{3}{32}$	$\frac{1}{8}$	$\frac{5}{32}$	$\frac{3}{16}$	$\frac{7}{32}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{7}{8}$	1	1 $\frac{1}{8}$	1 $\frac{1}{4}$	1 $\frac{3}{8}$				
$\frac{3}{16}$	\$.34	\$.35	\$.40	\$.46	\$.53	\$.62	\$.71	\$.80	\$ 1.05	\$ 1.32	\$ 1.65	\$ 2.02	\$ 2.39	\$ 2.83	\$ 3.30	\$ 3.80	\$ 4.92	\$ 6.21	\$ 9.44	\$ 12.90
$\frac{1}{4}$	.35	.37	.43	.50	.58	.68	.78	.89	1.15	1.44	1.78	2.17	2.57	3.02	3.51	4.03	5.19	6.52	9.82	13.37
$\frac{5}{16}$	.36	.39	.46	.54	.63	.74	.85	.97	1.25	1.55	1.92	2.32	2.75	3.22	3.72	4.26	5.46	6.83	10.21	13.84
$\frac{3}{8}$	.38	.41	.49	.58	.68	.80	.92	1.06	1.35	1.67	2.06	2.47	2.92	3.41	3.93	4.49	5.74	7.14	10.60	14.31
$\frac{7}{16}$	.39	.43	.52	.63	.74	.86	.99	1.14	1.44	1.79	2.19	2.63	3.09	3.60	4.14	4.72	6.01	7.45	10.98	14.78
$\frac{1}{2}$	.40	.45	.55	.67	.79	.92	1.06	1.21	1.54	1.90	2.33	2.78	3.27	3.80	4.36	4.95	6.28	7.76	11.37	15.25
$\frac{9}{16}$	.41	.47	.58	.71	.84	.98	1.13	1.29	1.63	2.02	2.47	2.94	3.45	3.99	4.57	5.18	6.55	8.07	11.75	15.72
$\frac{5}{8}$	.42	.49	.61	.75	.89	1.04	1.20	1.37	1.73	2.14	2.60	3.10	3.62	4.19	4.79	5.42	6.83	8.38	12.14	16.19
$\frac{11}{16}$	.43	.52	.64	.79	.94	1.10	1.27	1.46	1.83	2.26	2.74	3.25	3.80	4.38	5.01	5.66	7.10	8.69	12.53	16.66
$\frac{3}{4}$	.45	.54	.67	.83	.99	1.16	1.34	1.54	1.93	2.37	2.87	3.41	3.97	4.58	5.22	5.89	7.37	9.00	12.91	17.13
$\frac{13}{16}$	.47	.56	.71	.87	1.04	1.22	1.41	1.61	2.02	2.48	3.00	3.56	4.14	4.77	5.43	6.12	7.64	9.31	13.30	17.59
$\frac{7}{8}$	.48	.58	.74	.91	1.09	1.28	1.48	1.70	2.12	2.60	3.14	3.72	4.32	4.97	5.64	6.36	7.91	9.62	13.69	18.06
$\frac{15}{16}$	.49	.61	.77	.95	1.14	1.34	1.55	1.77	2.22	2.72	3.28	3.87	4.49	5.16	5.85	6.59	8.18	9.93	14.08	18.53
1	.50	.63	.80	.99	1.19	1.40	1.62	1.85	2.32	2.84	3.42	4.03	4.67	5.35	6.07	6.83	8.46	10.24	14.46	18.99
$1\frac{1}{16}$	.51	.65	.84	1.03	1.24	1.47	1.69	1.93	2.41	2.96	3.55	4.18	4.84	5.54	6.28	7.06	8.73	10.55	14.85	19.46
$1\frac{1}{8}$	.53	.67	.87	1.08	1.30	1.53	1.76	2.02	2.51	3.07	3.69	4.33	5.02	5.74	6.49	7.29	9.00	10.86	15.24	19.93
$1\frac{1}{4}$	.55	.69	.90	1.13	1.35	1.59	1.83	2.10	2.61	3.19	3.83	4.49	5.20	5.93	6.71	7.52	9.27	11.17	15.63	20.40
$1\frac{1}{2}$	.56	.71	.94	1.17	1.40	1.66	1.90	2.18	2.70	3.31	3.96	4.65	5.37	6.12	6.92	7.75	9.54	11.48	16.02	20.87
$1\frac{3}{8}$	.57	.73	.97	1.22	1.45	1.72	1.97	2.26	2.80	3.43	4.10	4.80	5.54	6.31	7.14	7.98	9.81	11.80	16.40	21.34
$1\frac{3}{4}$	.59	.75	1.00	1.26	1.50	1.78	2.04	2.34	2.90	3.55	4.23	4.96	5.72	6.51	7.35	8.21	10.08	12.11	16.79	21.81
$1\frac{7}{8}$	.60	.77	1.03	1.29	1.55	1.84	2.12	2.42	3.00	3.66	4.36	5.11	5.90	6.71	7.56	8.44	10.35	12.41	17.18	22.28
$1\frac{9}{8}$	.62	.79	1.06	1.33	1.60	1.90	2.19	2.50	3.10	3.77	4.50	5.27	6.07	6.91	7.77	8.67	10.62	12.72	17.57	22.75
$1\frac{5}{8}$	.63	.81	1.09	1.37	1.65	1.96	2.26	2.58	3.19	3.89	4.64	5.53	6.24	7.11	7.98	8.91	10.89	13.03	17.96	23.22
$1\frac{11}{8}$	.64	.84	1.12	1.41	1.70	2.02	2.33	2.66	3.29	4.01	4.78	5.59	6.42	7.30	8.19	9.14	11.16	13.34	18.35	23.69
$1\frac{13}{8}$	.65	.86	1.15	1.46	1.75	2.08	2.40	2.74	3.39	4.13	4.92	5.74	6.59	7.49	8.40	9.37	11.43	13.65	18.74	24.15
$1\frac{3}{4}$	.67	.88	1.18	1.50	1.81	2.14	2.47	2.82	3.49	4.24	5.05	5.90	6.76	7.68	8.62	9.60	11.70	13.96	19.14	24.61
$1\frac{7}{4}$	.69	.90	1.21	1.54	1.86	2.20	2.54	2.90	3.58	4.36	5.19	6.05	6.93	7.87	8.84	9.84	11.97	14.27	19.54	25.08
$1\frac{9}{4}$	.70	.92	1.24	1.58	1.91	2.26	2.61	2.98	3.67	4.48	5.32	6.21	7.11	8.07	9.06	10.07	12.25	14.60	19.92	25.55
$1\frac{11}{4}$	.71	.94	1.28	1.62	1.96	2.32	2.68	3.06	3.77	4.60	5.46	6.38	7.29	8.27	9.27	10.31	12.53	14.91	20.30	26.03
2	.73	.97	1.31	1.66	2.02	2.38	2.75	3.14	3.87	4.72	5.60	6.55	7.47	8.47	9.48	10.55	12.81	15.22	20.68	26.51
$2\frac{1}{8}$	1.01	1.37	1.74	2.12	2.50	2.88	3.30	3.74	4.06	4.95	5.86	6.88	7.81	8.85	9.91	11.02	13.35	15.84	21.44	27.44
$2\frac{1}{4}$	1.05	1.44	1.82	2.22	2.62	3.02	3.47	3.92	4.26	5.18	6.13	7.18	8.16	9.24	10.34	11.48	13.90	16.46	22.20	28.37
$2\frac{3}{8}$	1.09	1.50	1.91	2.32	2.74	3.16	3.63	4.05	4.45	5.41	6.40	7.48	8.50	9.63	10.77	11.95	14.44	17.09	22.97	29.31
$2\frac{1}{2}$	1.14	1.56	1.98	2.42	2.86	3.31	3.79	4.25	4.65	5.64	6.67	7.78	8.85	10.01	11.20	12.41	14.99	17.72	23.73	30.25
$2\frac{5}{8}$	1.18	1.62	2.07	2.52	2.99	3.45	3.95	4.44	4.84	5.87	6.94	8.08	9.20	10.40	11.63	12.88	15.53	18.34	24.50	31.18
$2\frac{3}{4}$	1.23	1.68	2.15	2.62	3.11	3.59	4.11	4.61	5.04	6.10	7.21	8.38	9.55	10.79	12.06	13.34	16.08	18.96	25.26	32.12
$2\frac{7}{8}$	1.27	1.75	2.23	2.72	3.23	3.73	4.27	4.73	5.23	6.33	7.48	8.69	9.90	11.18	12.49	13.81	16.62	19.59	26.02	33.06
3	1.31	1.81	2.31	2.83	3.35	3.87	4.43	4.92	5.42	6.56	7.75	9.00	10.25	11.57	12.92	14.27	17.17	20.22	26.79	33.99
$3\frac{1}{8}$	1.35	1.87	2.40	2.93	3.47	4.01	4.59	5.12	5.62	6.79	8.02	9.31	10.60	11.96	13.25	14.74	17.71	20.84	27.56	34.92
$3\frac{1}{4}$	1.40	1.93	2.48	3.03	3.59	4.15	4.75	5.31	5.81	7.02	8.29	9.62	10.95	12.35	13.69	15.20	18.26	21.47	28.32	35.85
$3\frac{3}{8}$	1.44	1.99	2.57	3.13	3.71	4.29	4.91	5.51	6.01	7.25	8.56	9.93	11.30	12.74	14.13	15.67	18.80	22.10	29.08	36.78
$3\frac{1}{2}$	1.49	2.05	2.65	3.23	3.83	4.43	5.07	5.70	6.20	7.48	8.83	10.24	11.65	13.13	14.57	16.13	19.35	22.72	29.85	37.71
$3\frac{5}{8}$	1.53	2.12	2.73	3.33	3.95	4.57	5.23	5.84	6.40	7.72	9.12	10.55	12.00	13.52	15.01	16.60	19.89	23.34	30.61	38.64
$3\frac{3}{4}$	1.57	2.18	2.81	3.43	4.08	4.71	5.39	6.05	6.59	7.96	9.39	10.86	12.36	13.90	15.45	17.06	20.44	23.97	31.38	39.57
$3\frac{7}{8}$	1.61	2.24	2.89	3.55	4.20	4.85	5.55	6.23	6.79	8.20	9.67	11.17	12.71	14.28	15.89	17.53	20.98	24.60	32.15	40.50
4	1.66	2.31	2.98	3.67	4.32	4.99	5.72	6.43	7.09	8.44	9.94	11.49	13.06	14.66	16.33	18.00	21.52	25.22	32.91	41.43
$4\frac{1}{4}$	1.75	2.44	3.15	3.84	4.56	5.27	6.03	6.78	7.38	8.91	10.48	12.12	13.80	15.45	17.19	18.94	22.62	26.47	34.44	43.28
$4\frac{1}{2}$	1.83	2.56	3.32	4.04	4.80	5.56	6.34	7.11	7.77	9.38	11.02	12.74	14.49	16.24	18.05	19.88	23.71	27.73	35.97	45.14
$4\frac{3}{4}$	1.92	2.68	3.48	4.24	5.04	5.84	6.62	7.41	8.16	9.85	11.56	13.36	15.19	17.03	18.91	20.82	24.81	29.98	37.50	

Micanite and Super-Micanite

Used widely for insulation between commutator bars because it will not slip or ooze when subjected to heat and pressure in the commutator.

Both are manufactured from super-imposed layers of thin, split mica films. The one essential difference is that Super-Micanite is made with a synthetic cement, glyptal, as a binding material rather than shellac of which Micanite is made. Both are cemented together to form a hard, rigid plate under heat and pressure.

Super-Micanite has the following advantages—Electrical: dielectric strength, 10% to 60% greater; volume resistivity, 100% greater; surface resistivity, 300% greater; dielectric power loss, 34% less. Physical: slippage shows practically none under pressure; transverse strength, 50 to 100% greater; density, 7% greater; carbonization, its binder shows only slight tendency to carbonize under high temperatures and when exposed to arcing; corrosion, non-corrosive to copper, its binder decomposes at higher temperature and decomposition products, formed below the carbonization point, are neither corrosive or conductive; effect of heat is slight.

Molding Plate

Sheet Size, 18x36 Inches

No. 1 India Micanite

Type of bonding material, shellac.
Milled to thickness.

Thickness Inches	Approx. Wt. Lb. per Sheet	Thickness Inches	Approx. Wt. Lb. per Sheet
.020	1.05	.045	2.35
.025	1.30	3/64	2.50
.030	1.60	.050	2.65
1/32	1.70	1/16	3.30
.035	1.85	3/32	5.00
.040	2.10	1/8	6.50

No. 11 India Micanite

Type of bonding material, shellac.
Thickness varies more than No. 1.

.010	.503	3/64	2.42
.015	.748	1/16	3.32
.020	.946	1/8	6.22
1/32	1.64	....	....

No. 111 India Super-Micanite

Type of bonding material, glyptal.
Milled to thickness.

.020	1.11	.045	2.50
.025	1.39	3/64	2.60
.030	1.66	.050	2.77
1/32	1.73	1/16	3.47
.035	1.94	3/32	5.20
.040	2.22	1/8	6.93

Commutator Segment Plate

Sheet Size, 18x36 Inches

Micanite and Super-Micanite plate for Commutator Segment Insulation are made in two qualities from different kinds of mica, Nos. 2, 22, and 222 from muscovite or white mica; Nos. 3 and 333 from phlogopite or amber mica.

These plates contain approximately 3 to 5% cement, evenly distributed and are designed especially for insulation between commutator bars. Cured under heat and pressure, Micanite and Super-Micanite will not slip or ooze when subjected to heat and pressure in the commutator.

Nos. 2, 22, and 222 are recommended for commutators that are undercut; Nos. 3 and 333 which are made with the softer amber mica, for commutators when the mica is flush with the surface.

The following characteristics are present: uniform thickness and density; high specific weight; extremely low compressibility; and very small cement content.

No. 2 India Micanite

Type of bonding material, shellac.
Milled to thickness.

Thickness Inches	Approx. Wt. Lb. per Sheet	Thickness Inches	Approx. Wt. Lb. per Sheet
.020	1.20	.040	2.40
.025	1.50	.045	2.70
.030	1.80	3/64	2.85
1/32	1.90	.050	3.00
.035	2.10	1/16	3.80

Commutator Segment Plate

Continued

No. 22 India Micanite

Type of bonding material, shellac.
Thickness varies more than No. 2.

Thickness Inches	Approx. Wt. Lb. per Sheet	Thickness Inches	Approx. Wt. Lb. per Sheet
.010	.567	.030	1.80
.015	.850	1/32	1.90
.020	1.20	3/64	2.85
.025	1.50	1/16	3.80

No. 3 Amber Micanite

Type of bonding material, shellac.
Milled to thickness.

.020	1.20	.040	2.40
.025	1.50	.045	2.70
.030	1.80	3/64	2.85
1/32	1.90	.050	3.00
.035	2.10	1/16	3.80

No. 222 India Super-Micanite

Type of bonding material, glyptal.
Milled to thickness.

.020	1.22	.040	2.43
.025	1.52	.045	2.73
.030	1.82	3/64	2.95
1/32	1.90	.050	3.04
.035	2.13	1/16	3.80

No. 333 Amber Super-Micanite

Type of bonding material, glyptal.
Milled to thickness.

.020	1.25	.040	2.49
.025	1.56	.045	2.81
.030	1.87	3/64	2.92
1/32	1.95	.050	3.11
.035	2.18	1/16	3.90

No. 5 Flexible Micanite Plate—For Cold Forming

Sheet Size, 36x36 Inches

It is often used where a sheet mica insulation is preferable to tape or fabric.

This plate is made of thin films of white India mica cemented together with a specially developed binder. The resulting plate possesses a high dielectric strength and lends itself readily to any process where cold forming is desired. The plate can readily be bent over sharp corners because of the ability of the individual flakes to slip over one another.

A slight variation in thickness is inherent as the finished product cannot be milled or surfaced.

Furnished in .005, .010, .015, .020, .025, 1/32, 1/16, and 1/8-inch thicknesses.

No. 555 Flexible Super-Micanite—For Cold Forming

Sheet Size, 36x36 Inches

An ideal conductor and slot insulation which will withstand severe tests.

Manufactured similarly to the No. 5 plate, the main difference being the use of a synthetic binder instead of shellac.

Furnished in .005, .010, .015, .020, .025, 1/32, 1/16, and 1/8-inch thicknesses.

Micanite and Super-Micanite

Continued

Stocking of Cold Molding Flexible Micanite Materials

Sheet Size, 36x36 Inches

When exposed to air for any considerable period of time, cold molding materials are liable to lose some of their flexibility. This is accounted for by the gradual oxidation and hardening of plasticizers.

The original flexibility can frequently be restored by warming the material for a minute or two on a suitable hot-plate. Good results can also be secured by subjecting the material to rising fumes of benzol.

No. 5 Flexible Micanite

Type of bonding material, synthetic.

Thickness Inches	Approx. Wt. Lb. per Sheet	Thickness Inches	Approx. Wt. Lb. per Sheet
.005	.55	.025	2 30
.010	1.00	1/32	3.00
.015	1.45	1/16	6.00
.020	1.90	1/8	12.00

No. 555 Flexible Super Micanite

Type of bonding material, glyptal.

Thickness Inches	Approx. Wt. Lb. per Sheet	Thickness Inches	Approx. Wt. Lb. per Sheet
.005	.56	.025	2 40
.010	1.12	1/32	3 12
.015	1.62	1/16	6 25
.020	2.25	1/8	12 50

Micanite Electrical Heater Plates For Electrical Heating Units

Sheet Size, 18x36 Inches

Made in four varieties, muscovite, white mica, phlogopite, or amber mica, and with the use of both organic and inorganic cements.

White mica is safe to use for temperatures up to approximately 1000°F., and under ordinary conditions micanite heater plate made of white mica will answer admirably for domestic heating appliances.

Amber mica will stand a considerably higher degree of heat than white mica and is usually unaffected by temperatures up to 1800°F. For any device in which the element will reach a higher temperature than 1000°F. it is advisable to use micanite heater plate made of amber mica.

No. 6 white and No. 7 amber are firm, hard plates that can be trimmed, cut into patterns, drilled and used to wind resistances. They are made with an inorganic cement. The cement used is slightly hygroscopic and these varieties must be kept dry and not held in stock too long before using, on account of possible deteriorations in mechanical properties.

No. 666 white and No. 777 amber, while not strictly heatproof, are made with a very small amount of organic cement which is consumed and disappears at the first heating of the element, when a slight smoking is observed, and nothing is left but the natural films of mica. These varieties of plate therefore cannot be used unless mechanically supported on both sides. These plates are practically unaffected by hygroscopic action; can be kept in stock indefinitely, and being less brittle than Nos. 6 and 7, will stand punch press operations better. They are not as well adapted to wind resistances on as Nos. 6 and 7, as their firmness disappears when heated. They are, however, used extensively in devices where the heating element is clamped firmly against the surface of the metal to be heated.

No. 6 White Micanite Heater Plate

Type of bonding material, synthetic.

Thickness	Approximate Weight per Sheet	Thickness	Approximate Weight per Sheet
..... inches	.010 .015 .020	..... inches	.65 .90

No. 666 White Micanite Heater Plate

Type of bonding material, glyptal.

Thickness	Approximate Weight per Sheet	Thickness	Approximate Weight per Sheet
..... inches	.010 .015 .020	..... inches	.60 .85

No. 7 Amber Micanite Heater Plate

Type of bonding material, synthetic.

Thickness	Approximate Weight per Sheet	Thickness	Approximate Weight per Sheet
..... inches	.010 .015 .020	..... inches	.65 .90

No. 777 Amber Micanite Heater Plate

Type of bonding material, glyptal.

Thickness	Approximate Weight per Sheet	Thickness	Approximate Weight per Sheet
..... inches	.010 .015 .020	..... inches	.60 .85

Uncut Mica

Qualities: condenser, good stained and clear domestic; vegetable stained; black stained; and Madagascar amber.

Grade	WILL CUT SIZE		Grade	WILL CUT SIZE	
	Width Inches	Length Inches		Width Inches	Length Inches
Ex Special	6 -8	10-12	3	1 1/2-3	3 -4 1/2
Special	5 -7	9-10	4	1 1/2-2 1/2	2 1/2-3
A-1	4 -6	7-9	5	1 -2	2 -2 1/2
1	3 -6	5-7	6	3/4-1	1 -1 1/2
2	1 1/2-3 1/2	4 1/2-6			

Mica Washers

Furnished standard in stained electrical mica.

Made of uncut or rock mica and usually supplied in random thicknesses, however, they can be built to uniform thickness on order.

In sizes from 1/16x1/16 to 3x1 1/16 inches in thickness from 1/32 to 1/4 inch. Built up washers sold by the 1000, random thicknesses sold by the pound.

Other qualities and sizes upon application.

No. 20 Micanite Cloth

Roll Size, 16 Feetx36 Inches—Sheet Size, 36x36 Inches

Consists of an appropriate number of layers of India mica films carefully faced with cotton cloth on one side and thin tissue paper on the other. The cotton base imparts excellent mechanical strength to this material. This, in conjunction with great flexibility, makes an excellent and efficient insulation for various conductors. It is often used in conjunction with Empire cloth and other insulations.

Thickness	Approximate Weight Roll	.008	.011	.014
..... inches	..... pounds	3.0	4.5	6.0

No. 24 Micanite Paper

Roll Size, 16 Feetx36 Inches—Sheet Size, 36x36 Inches

Manufactured by placing a suitable thickness of white India mica between two sheets of .001-inch Japanese paper.

The bond produced for this material possesses a high degree of flexibility. In comparison with No. 20 Micanite Cloth, mechanical strength has been slightly reduced in order to offer a thinner and less expensive product.

Thickness	Approximate Weight Roll	.005	.008	.011
..... inches	..... pounds	2.5	4.0	5.5

No. 26 Rope Paper and Mica

Sheet Size, 36x36 Inches

Composite insulation consisting of rope paper faced on one side, with two layers of India mica films and tissue paper. This material has a wide range of utility in the field of moderate voltages and temperatures.

Thickness	Approximate Weight Sheet	.007	.010	.015
..... inches	..... pounds	.5	.75	.94

No. 27 Pressboard and Mica

Sheet Size, 36x36 Inches

Composed of No. 1 pressboard faced on one side with two overlapping layers of India mica and tissue paper. Mechanically it possesses greater rigidity than No. 26 rope paper and mica, otherwise this insulation is of the same order.

Thickness	Approximate Weight Sheet	.012	.017	.020
..... inches	..... pounds	.90	1.28	1.5

No. 28 Coil Insulation—For Hot Molding

Sheet Size, 36x36 Inches

Especially recommended for coils of high voltage machines where it is important to remove all possibilities of air films in the insulation. Disrupted air films create ozone and nitrogen oxides which oxidize and impair the insulating properties of nearly all the insulating materials except mica. Composite material made by applying mica to paper or silk with a shellac bond and pressed under heat to secure the desired homogeneity. The thinnest product consists of a silk base with a single layer of hand-laid mica films, average thickness being .004 inch.

For thicknesses above .004 inch, a shellac treated .001-inch condenser or .0015-inch kraft paper, is used in conjunction with the necessary layers of mica films.

This material, not flexible at room temperature, is usually applied to coils under pressure and heat by special wrapping machines. The insulation thus formed is firm and solid; practically all air pockets being eliminated.

As an alternative, hand wrapping may be employed. In this instance it should be cut into the required size, heated by suitable means and wrapped around the coil before it has time to stiffen and cool.

Micanite and Super-Micanite

Continued

No. 29 Fish Paper and Mica
Sheet Sizes, 36x36 and 36x72 Inches

This material is composed of fish paper faced on one side with layers of India mica films and Japanese paper.

Strongly recommended for moderate temperature and voltages where mechanical strength is of prime importance. Thickness.....inches .010 .012 .015 .020 Approximate Weight Sheet,pounds .75 .90 1.13 1.50

No. 32 Micanite Tape
Roll Length, 100 Feet

Made by placing large selected India mica films between two layers of thin .001-inch Japanese paper. The use of these large films results in a product with superior dielectric properties.

Gum and varnish type of bonding material, of such nature that the resulting tape is flexible, thus permitting the mica laminae slipping over each other when the tape is applied. High grade mica is the chief ingredient.

Packed in sealed cartons. Width.....inches 3/4 1 Thickness.....inches .005 to .007 Approximate Weight Roll.....pounds .25 .375

No. 35 Micanite Tape
Roll Length, 100 Feet

Excellent composite material possessing desirable mechanical and electrical characteristics. Choice white India mica films are carefully laid on a very thin, .002-inch, cotton base and backed with tissue paper. The average thickness of the resulting product is approximately .005 inch.

It is very desirable for end coil insulation when used in conjunction with No. 28 micanite coil insulation.

Gum and varnish type of bonding material. Width.....inches 3/4 1 Thickness.....inches .005 to .007 Approximate Weight Roll.....pounds .31 .42

Silk and Micanite Tape
Roll Length, 100 Feet

Similar to No. 32 tape with the exception of the mica films being placed between a layer of silk and Japanese paper or two layers of silk, that is, this tape can be furnished with a backing of silk on one side or both sides.

In using mica in tape form it is desirable for the operator to place the roll in both hands, giving the layers of the tape a flexing action. In this manner laminations between individual layers can readily be dislodged.

Gum and varnish type of bonding material. Width.....inches 1/2 3/4 1 Thickness.....inches .005 to .007 Approximate Weight Roll.....pounds .17 .25 .33

Entire Micanite Round Tubing

Made entirely of micanite, for high potential work, induction coils, sleeves for small commutators, brushholder studs, grid rheostat rods, etc., and for apparatus subjected to sufficient heat to render paper objectionable. A protective covering of paper, less than 2% of the material, is applied when specified to tubes up to four inches in diameter.

Furnished with 1/32, 1/16, 3/32, 1/8, 3/16, and 1/4-inch wall thicknesses.

Micanite and Rice Paper Round Tubing

Composed of 85% micanite and 15% paper. Used universally where high grade insulation is required for use under ordinary temperatures. The small amount of paper does not materially affect its insulating qualities. It effects a saving in the cost of manufacture, enabling this grade to be offered at a lower price than the above tubing.

Furnished with 1/32, 1/16, 3/32, 1/8, 3/16, and 1/4-inch wall thicknesses.

Micanite and Asbestos Round Tubing

Composed of 40% micanite and 60% asbestos. Intended for apparatus subjected to moderate heating where a lower priced tube than the Entire Micanite Tubing will provide. It is used in grid rheostats, resistance boxes, etc.

Furnished with 1/32, 1/16, 3/32, 1/8, 3/16, and 1/4-inch wall thicknesses.

Micanite and Rope Paper Round Tubing

Composed of 50% micanite and 50% paper. Recommended for apparatus which is not subjected to enough heat to affect the paper and where the insulating requirements are fully met by a composite material of this kind.

Furnished with 1/32, 1/16, 3/32, 1/8, 3/16, and 1/4-inch wall thicknesses.

Standard Lengths in Inches for Round Tubing

On micanite tubes which are to fit over a rod, the outside diameter of the rod should be specified, as an allowance must be made on the inside diameter of the tube.

Round, square, oval, hexagonal, and other special shaped tubes of any size for special insulating requirements can be furnished. Large round tubing for induction coils, specially treated tubes or bushings for apparatus immersed in oil, special heat-proof bushings rolled without cement for spark plugs, etc. can also be supplied.

Micanite and Asbestos and Micanite and Rope Paper Round Tubes can be furnished only in 1/32-inch thickness and up.

I. D.	in.	Length, Inches										
		1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3	3 1/2	
WALL THICKNESS	.015.....in.	12	12	12	12	24	24	24	24	24	24	36
	1/32.....in.	18	18	18	18	24	24	24	24	24	36	
	3/64 to 1/4.....in.	24	24	24	24	24	24	36	36	36	36	

Super Micanite and Micanite Commutator Segments

Made from super micanite and micanite plate. Provide all the advantages and desirable features of raw mica in a convenient and effective form. In addition, micanite segments can be secured in specified thickness to exact sizes and shapes. There is no oozing, shrinking or slipping. Micanite plate is supplied for punching your own segments or furnished to exact specifications.

Micanite Washers

Suitable for insulation where excessive heat is not encountered. For grid rheostats and other apparatus where high temperature is to be expected, built-up mica washers or mica washers without any binder are recommended.

Round washers of any size and also oval, square or rectangular washers with either round or square holes, etc. can be supplied.

Spools, Flanged Bushings, Etc.

Made in a variety of sizes and shapes, either round, oval or rectangular. Quotations will be submitted on any special forms of micanite not included in any of the above classifications.

High Tension X-Ray Terminal Insulation

Manufacturers of High Tension X-Ray apparatus have found micanite an ideal insulator for the most difficult insulation problems. Micanite can be molded successfully, with special tools, around straight or bent terminal rods, or cables.

Micanite Commutator V Rings

Super-micanite and micanite commutator rings are made from the size required for the smallest fractional hp. motor to the largest generator.

Most manufacturers of commutators prefer a micanite ring in one piece, usually designated as a solid V ring.

All types of solid V rings require special molds. When the design of a commutator does not permit sufficient distance between the apex of the follower and the bottom of the V, solid V rings are advocated. Solid V rings up to 45 inches in diameter can be made, but the molds for the larger diameter are expensive. For the larger diameters, sectional V rings, made up in one-half thicknesses, with the joints staggered, can be used. These are less expensive, particularly the mold equipment.

Micanite Plates for Artistic Lamp Shades

For this purpose a plate is made with a special light-colored cement so as to obtain a uniform color effect. In pressing the plate, special precautions to keep the shading uniform are taken.

Furnished in No. 14 amber, No. 15 white, No. 16 pearl; .010, .015, or .020-inch thick.

Empire Insulating Materials

Empire oiled insulating materials include both impregnated fabric and paper. Special fabrics have been developed for this use to give the proper strength and impregnation. The varnishes used are also specially manufactured and the manufacturing process assures great mechanical strength, tenacity, flexibility, long life, and high resistance to heat and electricity. Widely used by electrical manufacturers and repairmen.

Empire Oiled or Varnished Insulating Cloth

Very extensive use is made throughout the electrical industry of Empire Oiled Cloth, where its great flexibility, mechanical strength, high resistance to oil, heat and electricity, and long useful life, make it of the utmost value. The base consists of a high tensile strength, long fiber yarn, processed to remove all nap. This is impregnated and coated with specially treated oils and baked.

Yellow and Black Varnished Cambric—Regular Style

Standard rolls are 25 and 50 yards long.

Yellow No.	Black No.	Thickness Inches	PER YARD	
			Less Than 100 Sq. Yd.	100 Sq. Yd. and Over
5	550	.005	\$.39 1/2	\$.33
6	660	.006	.40 1/2	.34
7	770	.007	.41 1/2	.35
8	880	.008	.43	.36 1/2
9	990	.009	.44	.37 1/2
10	1010	.010	.45 1/2	.39
12	1220	.012	.49	.42 1/2
15	1550	.015	.54 1/2	.48

Cannot be aggregated with canvas, duck, silk or tapes.

Empire seamless bias cloth, approximately 36 inches wide, 3 cents per yard extra.

Cutting charge of 10% for slitting into tape 3/4 inch and wider.

Cutting charge of 15% for slitting into tape less than 3/4 inch wide.

For rolls shorter than standard 25 yards, following charges are to be added per square yard: 18 to 24-yard rolls, 1 cent; 8 to 17-yard rolls, 5 cents; and less than 8-yard rolls, 10 cents.

Any of the above thicknesses can be cut into tape provided order amounts to multiples of 72 square yards. Special cloths made to order if quantities warrant.

Yellow and Black Varnished Canvas and Ducks

Approximately 36 inches wide.

Standard rolls are 25 yards long.

Yellow No.	Black No.	Thickness Inches	LESS THAN 100 Sq. Yd.		100 Sq. Yd. AND OVER	
			Yellow Yd.	Black Yd.	Yellow Yd.	Black Yd.
16	1600	.016	\$.53	\$.53	\$.49	\$.49
20	200	.020-.022	.58	.58	.54	.54
22	220	.022-.024	.58	.58	.54	.54
24	240	.024-.026	.615	.615	.575	.575
32	320	.030-.032	.77	.68	.73	.64
35	350	.034-.035	.88	.78	.84	.74
		.037	.91	.81	.87	.77
		.040	.99	.84	.95	.80

Cannot be aggregated with cloth, silk or tapes.

Smooth finish on .016 to .020-inch thicknesses.

Rough finish unless otherwise specified on .022-inch thickness and thicker.

From 1 to 20 yards, add 15% for small quantity.

Cutting charge of 10% for 3/4-inch tape and wider.

Cutting charge of 15% for tape less than 3/4 inch wide.

Empire Papers

Approximate width, 36 inches. Standard rolls are 25 and 50 yards long.

Yellow Varnished Paper—Price per Linear Yard

No.	Thickness Inches	Base Paper	Less Than 100 Sq. Yd.		100 Sq. Yd. and Over	
			Sq. Yd.	Sq. Yd.	Sq. Yd.	Sq. Yd.
75	.00075	Condenser	\$.20 3/4	\$.15 3/4	\$.15 3/4	\$.15 3/4
100	.001	Condenser	.20 3/4	.15 3/4	.15 3/4	.15 3/4
101	.0015	Condenser	.20 3/4	.15 3/4	.15 3/4	.15 3/4
102	.002	Condenser	.20 3/4	.15 3/4	.15 3/4	.15 3/4
103	.003	Condenser	.21 3/4	.16 3/4	.16 3/4	.16 3/4
444	.004	Bond	.22 3/4	.17 3/4	.17 3/4	.17 3/4
555	.005	Bond	.24 1/2	.21 1/2	.21 1/2	.21 1/2
106	.006	Bond	.25 1/2	.22 1/2	.22 1/2	.22 1/2

Varnished Red Rope Paper

Price per Linear Yard

Thickness inches	.007	.010	.012	.015
Less Than 100 Sq. Yd.	\$.21 3/4	\$.25 3/4	\$.29 1/2	\$.37 3/4
100 Sq. Yd. and Over . . . . .	.18 3/4	.21 3/4	.26 1/2	.33 3/4

Empire Varnished Tape

Seamless Bias

Provided in convenient form for uses on coils, cables, and bus bar insulations, having all the valuable qualities of the cloth and giving absolute dependability.

Insures a smooth, uniformly protective insulating tape. Can be hand or machine applied, and special length coils are supplied for coil winding machines. Saves both time and money in application, as every inch is usable, and in service gives a better job, doing away with plain woven tapes, thus eliminating the need of impregnation.

Yellow and Black Varnished Tape

Standard rolls are 36 and 72 yards long.

Gross yard of tape 1 inch wide is equal to 4 square yards.

Price per 144 Yards

.005-Inch Thickness			.009-Inch Thickness		
Thickness Inches	Less Than 100 Sq. Yd.	100 Sq. Yd. and Over	Thickness Inches	Less Than 100 Sq. Yd.	100 Sq. Yd. and Over
1/2	\$1.98	\$1.83	1/2	\$1.08	\$1.93
3/4	1.40	1.19	3/4	1.55	1.34
1	1.87	1.58	1	2.07	1.78
1 1/4	2.40	2.04	1 1/4	2.66	2.29
1 1/2	2.81	2.38	1 1/2	3.10	2.67

.006-Inch Thickness			.010-Inch Thickness		
Thickness Inches	Less Than 100 Sq. Yd.	100 Sq. Yd. and Over	Thickness Inches	Less Than 100 Sq. Yd.	100 Sq. Yd. and Over
1/2	\$1.00	\$1.85	1/2	\$1.12	\$1.97
3/4	1.44	1.22	3/4	1.60	1.39
1	1.91	1.63	1	2.13	1.85
1 1/4	2.46	2.09	1 1/4	2.74	2.38
1 1/2	2.87	2.44	1 1/2	3.20	2.77

.007-Inch Thickness			.012-Inch Thickness		
Thickness Inches	Less Than 100 Sq. Yd.	100 Sq. Yd. and Over	Thickness Inches	Less Than 100 Sq. Yd.	100 Sq. Yd. and Over
1/2	\$1.02	\$1.87	1/2	\$1.20	\$1.05
3/4	1.47	1.25	3/4	1.72	1.50
1	1.96	1.67	1	2.29	2.00
1 1/4	2.52	2.15	1 1/4	2.94	2.57
1 1/2	2.94	2.51	1 1/2	3.43	3.00

.008-Inch Thickness			.015-Inch Thickness		
Thickness Inches	Less Than 100 Sq. Yd.	100 Sq. Yd. and Over	Thickness Inches	Less Than 100 Sq. Yd.	100 Sq. Yd. and Over
1/2	\$1.06	\$1.91	1/2	\$1.32	\$1.17
3/4	1.52	1.30	3/4	1.90	1.68
1	2.02	1.74	1	2.53	2.24
1 1/4	2.60	2.23	1 1/4	3.25	2.89
1 1/2	3.04	2.61	1 1/2	3.80	3.37

Cannot be aggregated with cloth, canvas, duck or silk.

Can be supplied packed in oil, prices upon application.

Following additional charges add to gross yard price for rolls other than standard rolls:

Width inches	1/2	3/4	1	1 1/4	1 1/2
18 to 24-Yard Roll per 144 yd.	\$.02	\$.03	\$.04	\$.05	\$.06
8 to 17-Yard Roll per 144 yd.	.10	.15	.20	.25	.30
Less than 8-Yard Roll per 144 yd.	.20	.30	.40	.50	.60

Approximate width, 36 inches. Standard rolls are 25 and 50 yards long.

Yellow and Black Varnished Paper—Price per Linear Yard

Yellow No.	Black No.	Thickness Inches	Base Paper	Less Than 100 Sq. Yd.		100 Sq. Yd. and Over	
				Sq. Yd.	Sq. Yd.	Sq. Yd.	Sq. Yd.
104	1104	.004	Kraft	\$.16 3/4	\$.13 3/4	\$.13 3/4	\$.13 3/4
105	1105	.005	Kraft	.17 3/4	.14 3/4	.14 3/4	.14 3/4
		.007	Kraft	.18 3/4	.15 3/4	.15 3/4	.15 3/4
108	1108	.008	Kraft	.19 3/4	.16 3/4	.16 3/4	.16 3/4
110	1110	.010	Kraft	.22 3/4	.19 3/4	.19 3/4	.19 3/4
112	1112	.012	Kraft	.23 3/4	.20 3/4	.20 3/4	.20 3/4
115	1115	.015	Kraft	.28 3/4	.25 3/4	.25 3/4	.25 3/4
118	1118	.018	Kraft	.36 1/2	.33 3/4	.33 3/4	.33 3/4
120	1120	.020	Kraft	.36 1/2	.33 3/4	.33 3/4	.33 3/4
107	1107	.007	Gray Rope	.21 1/2	.18 3/4	.18 3/4	.18 3/4
109	1109	.009	Gray Rope	.24 1/2	.21 1/4	.21 1/4	.21 1/4

Cutting for 200-yard roll minimum: Up to and including 6 cuts, add 1/2 cent per square yard; above 6 cuts, add 3/4 cent per square yard.

Cutting for less than 200-yard roll minimum: Up to and including 6 cuts, add 1 cent per square yard; above 6 cuts, add 1 1/4 cents per square yard.

Mico Varnished Cambric Tubing

Length, 36 Inches

For motor leads, phase connections, transformer leads or wherever a dependable age resisting insulation is required.

Sizes follow the B&S system of gaging bare wire. If tubing is to be used on covered wire, the proper allowance must be made for the thickness of the insulation. On an order for several sizes and colors, the aggregate footage will take the prices based on the total quantity ordered.

Order by number whenever possible.

Standard Grade. Sometimes called Magneto Grade.

Dielectric strength approximately 7000 volts.

Standard colors are black and yellow for all sizes. Nos. 24 to 12 supplied in 5 colors, black, yellow, red, green, and brown. All sizes are packed in bundles of 420 feet.

Standard length, 42 inches.

X Grade. Sometimes called Radio Grade. Of the same construction as the Standard Grade, coated inside and outside, but some lengths in any given bundle may be not as smoothly finished as the Standard Grade.

Dielectric strength approximately 5000 volts.

Nos. 20 to 12 are stocked in black, red, green, brown, and yellow. All other sizes stocked in black and yellow only. Standard length, 42 inches.

Size No. and In.	Approx. I.D. In.	Size I.D. Nearest Mm.	Standard Grade			X Grade		
			Less than 1000 Feet	1000 Ft. to 4999 Ft.	5000 Ft. and Over	Less than 1000 Feet	1000 Ft. to 4999 Ft.	5000 Ft. and Over
24	.020	1/2	\$2.50	\$1.90	\$1.60	.....	.....	.....
20	.034	.....	2.50	1.90	1.60	1.65	1.30	1.00
19	.038	.....	2.50	1.90	1.60	1.65	1.30	1.00
18	.042	1	2.50	1.90	1.60	1.65	1.30	1.00
17	.047	.....	2.50	1.90	1.60	1.65	1.30	1.00
16	.053	.....	2.60	2.00	1.70	1.70	1.40	1.05
15	.059	1 1/2	2.70	2.10	1.80	1.70	1.40	1.05
14	.066	.....	2.80	2.20	1.90	1.85	1.50	1.10
13	.076	.....	2.85	2.25	1.95	1.90	1.55	1.15
12	.085	2	2.90	2.30	2.00	1.95	1.60	1.20
11	.095	2 1/2	3.20	2.50	2.30	2.05	1.70	1.30
10	.106	.....	3.40	2.75	2.50	2.10	1.75	1.50
9	.118	3	3.60	3.00	2.70	.....	.....	.....
8	.133	3 1/2	3.60	3.00	2.70	2.25	1.95	1.70
7	.148	.....	3.75	3.15	2.85	2.50	2.25	2.00
6	.166	.....	3.75	3.15	2.85	2.50	2.25	2.00
5	.186	.....	4.00	3.40	3.15	2.75	2.45	2.20
4	.208	.....	4.30	3.70	3.45	3.05	2.70	2.40
3	.234	6	4.30	3.70	3.45	3.05	2.70	2.40
2	.263	.....	4.60	4.00	3.75	3.30	3.00	2.70
1	.294	7 1/2	4.60	4.00	3.75	3.30	3.00	2.70
5/16	.315	8	4.60	4.00	3.75	3.30	3.00	2.70
0	.330	8 1/2	4.90	4.30	4.05	3.60	3.25	2.95
.....	.354	9	4.90	4.30	4.05	3.60	3.25	2.95
3/8	.375	9 1/2	5.20	4.60	4.35	3.90	3.55	3.20
.....	.393	10	5.80	5.10	4.70	4.15	3.80	3.50
7/16	.433	11	5.80	5.10	4.70	4.15	3.80	3.50
1/2	.500	13	6.50	5.60	5.00	4.30	4.00	3.70
5/8	.....	.....	6.50	5.60	5.00	4.30	4.00	3.70
3/4	.....	.....	7.50	6.50	5.50	4.90	4.60	4.30
1	.....	.....	7.50	6.50	5.50	4.90	4.60	4.30
.....	.....	.....	8.50	7.25	6.00	5.90	5.60	5.30
.....	.....	.....	8.50	7.25	6.00	5.90	5.60	5.30
.....	.....	.....	9.50	8.25	7.00	6.90	6.60	6.30
.....	.....	.....	9.50	8.25	7.00	6.90	6.60	6.30
.....	.....	.....	10.50	9.25	8.00	7.90	7.60	7.30
.....	.....	.....	12.50	11.25	10.00	9.90	9.60	9.30
.....	.....	.....	14.50	13.25	12.00	.....	.....	.....
.....	.....	.....	16.50	15.25	14.00	.....	.....	.....

*For Optical Grade, add 20 cents to prices.

Cutting charge per 1000 pieces for short lengths:

Sizes up to and including No. 9, 25 cents.

Size Nos. 8 to 4 inclusive, 40 cents.

Size No. 3 and larger, 50 cents.

Empire Yellow Oiled Silk

Approximate width, 36 inches. Standard rolls are 25 yards long.

Price per Linear Yard

No.	22	33	44	55	66	77	885
Thickness	in. .002	.003	.004	.005	.006	.007	.008
Less than 100 Sq. Yd.	\$.53	\$.55	\$.56	\$.59	\$.61	\$.63	\$.65
100 Sq. Yd. and Over	.48	.50	.51	.54	.56	.58	.60

Cannot be aggregated with cloth, canvas, duck or tape. For cutting bias silk, the following charges apply: Less than 3/4 inch wide, add 25%; 3/4 to 1 inch wide, add 20%; and 1 inch wide and over, add 15%.

For cutting straight tape: 3/4 inch wide and over, add 10%; and less than 3/4 inch wide, add 15%.

Mico Varnished Saturated Tubing

Length, 40 1/2 Inches

Sizes follow the B&S system of gaging bare wire. If tubing is to be used on covered wire, the proper allowance must be made for the thickness of the insulation. On an order for several sizes and colors, the aggregate footage will take the prices based on the total quantity ordered.

Colors are black and yellow.

In 42-inch lengths in standard bundles of 420 feet each.

Nos. 20 to 12 supplied in 5 colors, black, yellow, red, green, and brown.

Order by number whenever possible.

Size No. and In.	Approx. I.D. In.	Size I.D. Nearest Mm.	Price per 100 Feet		
			Less than 1000 Ft.	1000 Ft. to 4999 Ft.	5000 Ft. and Over
20	.034	.....	\$1.10	\$1.00	\$.80
19	.038	.....	1.10	1.00	.80
18	.042	1	1.10	1.00	.80
17	.047	.....	1.10	1.00	.80
16	.053	.....	1.15	1.05	.85
15	.059	1 1/2	1.15	1.05	.85
14	.066	.....	1.30	1.20	.90
13	.076	.....	1.35	1.25	.95
12	.085	2	1.40	1.30	1.00
11	.095	2 1/2	1.45	1.35	1.05
10	.106	.....	1.50	1.40	1.20
9	.118	3	1.70	1.55	1.35
8	.133	3 1/2	1.80	1.65	1.45
7	.148	.....	1.90	1.75	1.55
6	.166	.....	2.05	1.85	1.65
5	.186	.....	2.25	2.05	1.85
4	.208	.....	2.45	2.25	1.95
3	.234	6	2.45	2.25	1.95
2	.263	.....	2.65	2.35	2.05
1	.294	7 1/2	2.65	2.35	2.05
5/16	.315	8	2.85	2.35	2.05
0	.330	8 1/2	2.85	2.50	2.15
.....	.354	9	3.05	2.70	2.30
3/8	.375	9 1/2	3.05	2.70	2.30
.....	.393	10	3.30	2.90	2.45
7/16	.433	11	3.30	2.90	2.45
1/2	.500	13	3.55	3.10	2.60
.....	.375	9 1/2	3.55	3.10	2.60
.....	.393	10	3.80	3.30	2.75
.....	.433	11	3.80	3.30	2.75
.....	.500	13	4.05	3.50	3.00

Cutting charge per 1000 pieces for short lengths:

Sizes up to and including No. 9, 25 cents.

Size Nos. 8 to 4 inclusive, 40 cents.

Size No. 3 and larger, 50 cents.

Armatite

Sheet Size, 35x36 Inches

Saves half the time now required to line and insulate armature slots and other electrical machinery parts requiring mechanical and insulating protection for the windings. Saves material as well and gives a better all-around job. Combines the mechanical protection of fish paper with the insulating properties of varnished cambric. These two are forced together with insulating cement under pressure to provide a flexible, easily handled material that does not dry out and become brittle in stock.

No.	Approx. Wt. Lb. per Sheet	Price per Pound							
		Less than 25	25 to 99	100 to 249	250 to 499	500 to 999	1000 to 4999	Over 5000	
111	.55	\$1.11	\$1.01	\$.98	\$.97	\$.96	\$.95	\$.94	
120	.68	1.025	.925	.895	.885	.875	.865	.855	
150	.85	.98	.88	.85	.84	.83	.82	.81	
170	1.00	.92	.82	.79	.78	.77	.76	.75	
200	1.10	.89	.79	.76	.75	.74	.73	.72	
220	1.30	.85	.75	.72	.71	.70	.69	.68	
250	1.40	.825	.725	.695	.685	.675	.665	.655	
270	1.60	.805	.705	.675	.665	.655	.645	.635	
300	1.75	.805	.705	.675	.665	.655	.645	.635	

May not be aggregated with other Empire items.

Can be furnished in full width roll or in tape rolls cut to specified width.

Cutting charge: Less than 3/4 inch wide, add 15%; 3/4 inch wide and over, add 10%.

The Armatite to be made up in the combination shown in the following table:

No.	Empire Cloth Thickness Inches		Fish Paper Thickness Inches		Approx. Thickness Inches
	Thickness	Inches	Thickness	Inches	
111	.005	.005	.004	.010	.010
120	.006	.006	.005	.012	.012
150	.006	.006	.007	.015	.015
170	.006	.006	.010	.017	.017
200	.006	.006	.012	.020	.020
220	.006	.006	.015	.022	.022
250	.006	.006	.018	.025	.025
270	.007	.007	.020	.027	.027
300	.012	.012	.015	.030	.030

Rag Paper Armatite

A combination of 100 per cent rag stock, not chemically treated, paper and Empire brand varnished cloth, yellow bias cut. The bias cut of the cloth threads increases its resistance to tear and when combined with rag stock paper makes a strong and tough combination of high dielectric strength.

The yellow Empire cloth is heat and oil resisting. The film of yellow varnished cloth has higher resistance to abrasion than black varnished cloth.

The 100 per cent rag stock paper is a tough, high density, electrically and chemically clean paper, has good heat aging characteristics and will readily absorb insulating varnish.

Special combinations made to specification stating thickness of paper and cloth, with yellow or black bias cut varnished cloth provided quantity is sufficient to warrant making a run.

Sheets, 35x36 inches; or rolls, if specified, 35 inches wide, and 25 yards long.

No.	Approximate Thickness, In.		Approx. Wt. Lb. per Sheet		Less Than 25 Sheets		25 to 99 Sheets																																																																																								
	Paper	Cloth	Per Sheet	Per Sheet	Per Sheet	Per Sheet	Per Sheet	Per Sheet																																																																																							
5007	.005	.007	.012-.013	.85	1.09	\$.927	\$.99	\$.842																																																																																							
7007	.007	.007	.014-.015	1.00	.96	.96	.86	.86																																																																																							
10007	.010	.007	.017-.018	1.20	.94	1.128	.84	1.008																																																																																							
12007	.012	.007	.019-.020	1.34	.91	1.219	.81	1.085																																																																																							
15007	.015	.007	.022-.023	1.54	.87	1.34	.77	1.186																																																																																							
15010	.015	.010	.025-.026	1.70	.83	1.411	.73	1.241																																																																																							
<table border="1"> <thead> <tr> <th rowspan="2">No.</th> <th colspan="2">100 to 249 Sheets</th> <th colspan="2">250 to 499 Sheets</th> <th colspan="2">500 to 999 Sheets</th> <th colspan="2">1000 to 4999 Sheets</th> <th colspan="2">5000 Sheets and Over</th> </tr> <tr> <th>Per Pound</th> <th>Per Sheet</th> <th>Per Pound</th> <th>Per Sheet</th> <th>Per Pound</th> <th>Per Sheet</th> <th>Per Pound</th> <th>Per Sheet</th> <th>Per Pound</th> <th>Per Sheet</th> </tr> </thead> <tbody> <tr> <td>5007</td> <td>\$.96</td> <td>\$.816</td> <td>\$.95</td> <td>\$.808</td> <td>\$.94</td> <td>\$.799</td> <td>\$.93</td> <td>\$.79</td> <td>\$.92</td> <td>\$.782</td> </tr> <tr> <td>7007</td> <td>.83</td> <td>.83</td> <td>.82</td> <td>.82</td> <td>.81</td> <td>.81</td> <td>.80</td> <td>.80</td> <td>.79</td> <td>.79</td> </tr> <tr> <td>10007</td> <td>.81</td> <td>.972</td> <td>.80</td> <td>.96</td> <td>.79</td> <td>.948</td> <td>.78</td> <td>.936</td> <td>.77</td> <td>.924</td> </tr> <tr> <td>12007</td> <td>.78</td> <td>1.045</td> <td>.77</td> <td>1.032</td> <td>.76</td> <td>1.018</td> <td>.75</td> <td>1.005</td> <td>.74</td> <td>.99</td> </tr> <tr> <td>15007</td> <td>.74</td> <td>1.14</td> <td>.73</td> <td>1.124</td> <td>.72</td> <td>1.109</td> <td>.71</td> <td>1.093</td> <td>.70</td> <td>1.078</td> </tr> <tr> <td>15010</td> <td>.70</td> <td>1.19</td> <td>.69</td> <td>1.173</td> <td>.68</td> <td>1.156</td> <td>.67</td> <td>1.139</td> <td>.66</td> <td>1.122</td> </tr> </tbody> </table>									No.	100 to 249 Sheets		250 to 499 Sheets		500 to 999 Sheets		1000 to 4999 Sheets		5000 Sheets and Over		Per Pound	Per Sheet	Per Pound	Per Sheet	Per Pound	Per Sheet	Per Pound	Per Sheet	Per Pound	Per Sheet	5007	\$.96	\$.816	\$.95	\$.808	\$.94	\$.799	\$.93	\$.79	\$.92	\$.782	7007	.83	.83	.82	.82	.81	.81	.80	.80	.79	.79	10007	.81	.972	.80	.96	.79	.948	.78	.936	.77	.924	12007	.78	1.045	.77	1.032	.76	1.018	.75	1.005	.74	.99	15007	.74	1.14	.73	1.124	.72	1.109	.71	1.093	.70	1.078	15010	.70	1.19	.69	1.173	.68	1.156	.67	1.139	.66	1.122
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May not be aggregated with any other Empire material for quantity price.

Tape Cutting Charges

Less than 3/4 inch wide, plus 15%; 3/4 inch wide and wider, plus 10%.

Varnished Fibreglas Cloth

Straight Cut

Made with a straight, plain weave Fibreglas cloth base, impregnated with yellow or black varnish.

Approximately 36 inches wide.

All orders should contain the following information: Quantity desired in lineal yards; cloth designation number; thickness desired; varnish desired, yellow or black; and price per lineal yard.

Owens-Corning No.	Price per Lineal Yard			
	EC3C-112	EC3C-112	EC7B-127	EC7B-127
Finished Thick.in.	.005	.007	.010	.012
100 Yd. and Up..	\$1.35	\$1.48	\$2.23	\$2.28
Less than 100 Yd.	1.45	1.58	2.33	2.38

For thicknesses or base cloths other than those listed, prices on request.

Varnished Fibreglas Cloth slit in widths 6 inches wide or less, shall be sold as tape at tape prices. Figure 36 cutting inches in full width when other than standard full width rolls are ordered.

Cutting charges: Less than 3/4 inch, add 7 cents per square yard; 3/4 inch and up, add 5 cents per square yard.

May not be aggregated with other material.

Varnished Fibreglas Tape

Straight Cut

Roll Size, 36x72 Yards

Made with a straight, plain weave Fibreglas cloth base, impregnated with black or yellow varnish.

All orders should contain the following information: Quantity desired in gross yards; cloth designation number; tape dimensions, width and thickness; varnish desired, yellow or black; and price per gross yard.

One square yard equals 1/4 inch by 1 gross yard.

Width Tape In.	THICKNESS TAPE, INCHES							
	.005		.007		.010		.012	
	No. EC3C-112	Less Than 100 Sq. Yd.	No. EC3C-112	Less Than 100 Sq. Yd.	No. EC7B-127	Less Than 100 Sq. Yd.	No. EC7B-127	Less Than 100 Sq. Yd.
1/2	\$2.84	\$3.04	\$3.10	\$3.30	\$4.60	\$4.80	\$4.70	\$4.90
3/4	4.20	4.50	4.59	4.89	6.84	7.14	6.99	7.29
1	5.60	6.00	6.12	6.52	9.12	9.52	9.32	9.72
1 1/4	7.20	7.71	7.87	8.38	11.73	12.24	11.98	12.50
1 1/2	8.40	9.00	9.18	9.78	13.68	14.28	13.98	14.58

Above material cannot be aggregated with material on any other price list.

For thicknesses or base cloths other than those listed, prices on request.

Widths not listed, prices on request.

Duro Armature Slot Papers

Sheet Size, 36x48 Inches

Duro paper comes in .007, .010, .015, and .020-inch thicknesses and over.

Thicknesses of .062 and .093, also other thicknesses can be supplied on order.

Duro paper will be cut into strips, at slight additional charge. The different thicknesses of paper may be lumped together to secure the benefit of quantity price applying to the total order.

Strips cannot be aggregated with sheets.

Rayco and Kaygrey Untreated Insulating Papers

Glazed Finish

Sheet Size, 36x48 Inches

Rayco and Kaygrey papers come in thicknesses of .007, .010, .015, .020, and .025 inch. Other thicknesses can be supplied on order.

All of the above thicknesses have a glazed finish.

For thicknesses of 1/32, 1/16, 3/32, and 1/8 inch this paper can be supplied with a dull or calendar finish, in sheets 48x96, 48x48, 60x120, and 60x60 inches.

Armo Armature Slot Papers

Sheet Size, 36x48 Inches

Armo paper is furnished in .007, .010, .015, .020, .025, .030, and .035-inch thicknesses; .062, .093 inch or other thicknesses can be supplied on order.

Armo paper will be cut into strips, at slight additional charge. The different thicknesses of paper may be lumped together to secure the benefit of quantity price applying to the total order.

Strips cannot be aggregated with sheets.

Mico Vulcanized Fiber Sheets
Hard and Flexible

Standard colors are red, gray, and black.
Standard sheets in thicknesses up to and including 3/8 inch are furnished approximately 45x60 inches or 60x90 inches; in thicknesses over 3/8 inch, 36x48 inches.
Sheets may be cut in halves, thirds, or quarters, or in two, three, or four pieces at no extra charge, providing there is no waste left.
Approximate weight of 20 cubic inches, 1 pound.

Thickness Inches	Per Lb.	Thickness Inches	Per Lb.
.005-1/8 Incl.	\$.50	1 1/8	\$.86
3/16-5/16 Incl.	.51	1 1/4	1.00
3/8-7/16 Incl.	.53	1 3/8	1.15
1/2	.56	1 1/2	1.30
5/8	.60	1 5/8	1.50
3/4	.66	1 3/4	1.80
7/8	.70	1 7/8	2.20
1	.76	2	2.60

Mico Fish Paper

Approximate Width Rolls, 30 or 60 Inches
Approximate weight of 20 cubic inches, 1 pound.
Thickness inch .004 .005-1/8 Incl.
Per Pound \$.55 .50
Paraffined fish paper can be furnished at the same price.

Mico Fiber Tubing

Approximate Length, 30 Inches
Per Foot

I.D. In.	WALL THICKNESS, INCHES					
	1/16	3/32	1/4	5/32	3/16	7/32
1/8	\$.25	\$.30	\$.40	.....	.....	.....
3/16	.20	.25	.35	.....	.....	.....
7/32	.16	.20	.30	.....	.....	.....
1/4	.12	.14	.18	\$.22	\$.26	.....
5/16	.13	.15	.19	.24	.28	.....
3/8	.14	.16	.21	.26	.31	.....
7/16	.15	.17	.22	.28	.33	.....
1/2	.16	.18	.24	.30	.36	\$.42
9/16	.17	.20	.26	.32	.39	.46
5/8	.18	.21	.28	.35	.42	.49

Other sizes and prices upon application.

Mico Round Fiber Rod

Approximate Lengths, 5 to 6 Feet
Per Foot

Diam. In.	PER FOOT				
	9 or Less	10-24	25-49	50-99	100-499
3/32	\$.17	\$.14	\$.11	\$.09	\$.08
1/8	.17	.14	.11	.09	.08
3/16	.17	.14	.11	.09	.08
1/4	.18	.15	.12	.10	.09
5/16	.20	.16	.13	.11	.10
3/8	.22	.18	.15	.13	.12
7/16	.27	.23	.20	.18	.16
1/2	.33	.28	.22	.20	.18
9/16	.40	.33	.27	.22	.20
5/8	.47	.40	.33	.28	.24

Other sizes and prices upon application.

Mico Miscellaneous Materials

Mico paper, compound, tape, cement, wood wedges, and twines fulfill the needed requirements for insulation work.

Yellow Pressboard or Fullerboard
Sheet Size, 30x36 Inches

Smooth, tough, dense, highly glazed, and specially prepared insulating board made from cotton fiber. More pliable and not as hard as fiber and a better insulator.
Furnished in .008, .010, .015, .020, .025, 1/32, 1/16, and 1/8-inch thicknesses.

Red Rope

Specially prepared for electrical use.
In rolls 36 inches wide. Thickness, .005, .010, and .015 inch.

Mico Miscellaneous Materials

Adhesive Tape

Non-corrosive adhesive tape meeting the A.S.T.M. tests on polished copper. Holding power is much superior to ordinary tapes allowing narrower widths to be used. In coil winding it is used for anchoring the leads at the start and finish of the coil, protection of tapes, binding or outer cover and binding or core to replace metal clamps. Used in loud speaker construction for binding paper edges and padding under nameplates, or various other loose metal parts to prevent rattling, and as a protective covering for armature and field windings. Also employed in the masking of cabinets and panels when being sprayed with lacquer and paint.

Supplied in 1/4, 3/8, 1/2, 3/4, 7/8, 1, 1 1/4, 1 1/2, 2, 3, and 4-inch widths.

Individually or packed in the bulk in 60-yard rolls.

Insulating Glue

Neutral, extremely sensitive liquid glue made for fastening tape end and other insulating materials. Will not attract moisture and does not require heat for setting.

No. 3089 3090 3091
Quantity in Can. 1 Qt. 1 Gal. *5 Gal.
*Kegs.

Commutator Cement

For repairing pitted commutators. Composed of a liquid and a powder in separate containers to be mixed as used. It resists oil, acid, and water. Does not shrink when setting, nor does it absorb moisture and is not affected by contraction and expansion. Does not crumble or lose its insulating value when heated after installation.

In 5 1/2-ounce bottle powder and 5 1/2-ounce bottle liquid. Standard package, each containing one bottle powder and one of liquid.

Cramolin Paste and Liquid

Cleans, lubricates, and protects. Conducting efficiency from rubbing electrical contacts is increased.

Liquid is recommended for commutators, slip rings, and collectors. Easily applied with a coarse cloth free from lint. Perfectly harmless to brushes, insulation and metal surfaces. Will not develop acid or cause a commutator to short.

Paste is compounded for switch blades, and controller fingers, any sliding electrical contact except commutators. Applications are readily made with a brush under normal operating conditions, once every four weeks is sufficient to maintain clean, lubricated contacts.

Liquid is furnished in 1-pint bottles, 16 fluid ounces and 1/2-pint bottles, 8 fluid ounces.

Paste is supplied in 1/4, 1/2, and 1-pound cans.

Hard Maple Armature Wood Wedges

Standard length, 30 inches.

In package of 100 and 200 feet. Prices one size, not assorted, but various sizes may be aggregated when ordered 500 feet of a size.

No.	Width In.	Thick In.	No.	Width In.	Thick In.
0	5/32	5/64	11	11/32	1/8
1	3/16	3/64	12	13/32	5/32
2	3/16	3/64	13	5/32	5/64
3	3/16	7/64	14	7/32	7/64
4	7/32	5/64	15	7/32	1/8
5	7/32	1/8	16	5/16	7/64
6	1/4	5/64	17	11/32	1/6
7	1/4	1/8	18	3/16	3/32
8	3/32	1/8	19	3/16	1/8
9	3/32	3/32	20	3/16	3/32
10	3/32	7/64	21	7/32	3/32

Armature Twines

No.	Description	Approx. Yards Per Lb.
2800	6 Cord Linen	750
2802	12 Fine Finished Flax	590
2803	12 Cable Laid Flax	525
2806	18 Cable Laid Italian	350
2807	24 Cable Laid Italian	260
2808	18 Cable Laid Cotton	375
2809	24 Cable Laid Cotton	280
2810	36 Cable Laid Cotton	190
2811	18 Cable Laid Waterproof	325
2812	24 Cable Laid Waterproof	250
2813	36 Cable Laid Waterproof	170

Asbestos Listing Tapes, Tubing, and Cloth

Cable Protection (Fireproofing)

Practically all operating companies apply some form of fireproofing to underground cables. Without such protection, lead sheaths would be exposed to arcs, or manhole fires caused by failure of other cables. Public utilities and electrical companies are large users of listing tapes for this purpose and where cables are trained to the back of switchboards.

Fine Listing Tapes



Asbestos Braided Tubing or Sleeving



Fine Listing Tapes are used in winding armatures of electrical motors. Because of the nature of their application, tapes must be uniform in construction and of high quality. Uniformity of construction means a constant width, thickness, tensile strength and asbestos content. Quality means the use of soft pliable asbestos fibers properly opened, cleaned of all grit and foreign matter, spun into a fine yarn and woven into tape.

A high tensile strength is important when winding an armature to get smooth covered wires. There must be no soft places in the wrap and sufficient stress must be applied so that the over-lapping may be binding and yet not too thick. A low tensile tape would fracture and necessitate rewinding the armature.

Asbestos Listing Tapes

Heavy Asbestos Listing Tapes are mostly used for this type of insulation. They are also used for switchboard work. Tapes are woven from $\frac{1}{32}$ to $\frac{1}{8}$ -inch thick and in widths up to 6 inches inclusive.

Ferrous and Non-Ferrous Listing Tapes

Fiber from different countries and mines varies in amounts of ferrous and ferric oxides found present. The Cryostile Asbestos mined in Canada contains from three to five per cent of iron salts, while that mined in South Africa and Arizona has a half of one per cent or less. Fiber with a low iron content is termed non-ferrous—that with a high content, ferrous.

Ferrous Asbestos Listing Tapes are generally used, but there are special applications for the non-ferrous. Such is the case in the manufacture of generators where the non-ferrous material is wrapped around the wires to retard an action termed "corona" which is a result of electrical radiation terminating in deterioration of the wire. This application tends to prevent leakage of electrical energy. A ferrous tape would not be advisable for this purpose.

Standard rolls contain 100 feet of tape.

Approximate Lineal Feet per Pound

Width Inches	THICKNESS, INCHES						
	.015 Plain	.020 Plain	.025 Plain	$\frac{1}{32}$ Plain	$\frac{1}{32}$ Metallic	$\frac{1}{16}$ Plain	$\frac{1}{16}$ Metallic
$\frac{1}{2}$	310	215	140	135	115	74	62
$\frac{3}{4}$	212	163	105	85	75	58	47
$\frac{7}{8}$	182	141	91	76	67	48	40
1	163	122	80	68	56	40	35
$1\frac{1}{4}$	138	97	62	55	45	32	29
$1\frac{3}{8}$	120	92	56	49	39	30	27
$1\frac{1}{2}$	102	88	50	43	36	28	25
$1\frac{3}{4}$	95	75	44	39	32	23	21
2	85	65	40	35	29	19	17
$2\frac{1}{2}$	67	56	33	28	23	15	14
3	55	45	29	23	19	12	11

Probably the greatest uses for Asbestos Tubing are in the electrical equipment and electrical insulation field where there may be dangers from short circuit or flame. Tubing is used over soldered ends of coils in motors. Before the ends are joined, a length of sleeving is cut and placed over the wire, to later be slipped back into proper position after the ends have been soldered. Many joints and splices may be protected in the same manner.

Asbestos Tubing or sleeving is braided with fine yarns to inside diameters from $\frac{1}{32}$ to 3 inches. There are three classes of wall thicknesses: the light wall constructed with a thickness of approximately $\frac{1}{32}$ inch, the standard construction with a thickness of $\frac{1}{16}$ inch, and the heavy wall tubing with a thickness of $\frac{1}{8}$ inch. Tubing should be ordered by inside diameter and wall thickness.

Approximate Footage Based on Wall Thicknesses

I.D. Inches	WALL THICKNESS, INCHES		
	$\frac{1}{32}$	$\frac{1}{16}$	$\frac{1}{8}$
$\frac{1}{16}$	170	250	500
$\frac{1}{8}$	79	148	300
$\frac{1}{4}$	55	80	220
$\frac{3}{8}$	22	70	138
$\frac{1}{2}$	16	54	...
$\frac{3}{4}$	14	...	...
$\frac{7}{8}$	10	...	...
1	9	...	...
$1\frac{1}{2}$	$6\frac{1}{2}$	...	...

Woven Asbestos Cloth

Asbestos Cloth is woven in many thicknesses and widths. It is possible to secure a fine cloth woven as thin as .030 inch and as thick as $\frac{1}{8}$ inch. The widths run from 6 to 122 inches, but standard rolls are 36 and 40 inches wide and 50, 60 or 100 yards long. The most common weave is the square or basket weave, but herringbone or twill weaves are available.

Plain Weave Asbestos Cloth

Style No.	Thickness Inches	Grades Available	WEIGHT, POUNDS	
			1 Square Yard	36x40 Inches
2175	$\frac{1}{32}$	All	1.75	1.94
2200	$\frac{1}{16}$	All	2.00	2.22
2225	$\frac{1}{16}$	All	2.25	2.50
2250	$\frac{5}{64}$	All	2.50	2.78
2300	$\frac{3}{32}$	All	3.00	3.33
2350	$\frac{3}{32}$	All	3.50	3.88
2495 (2-Ply)	$\frac{1}{8}$	Commercial	4.95	...

Insulating Varnishes and Enamels

No. 1 Clear Baking Varnish

This varnish has maximum life under continued heating at elevated temperatures. It is insoluble in oil, either the lubricating or transformer types. It is water and acid proof. It is designed for use on large transformer and motor coils where flexibility of the finished oil and freedom from brittleness under continued heat is essential. It has very high dielectric strength, both under the wet and dry tests. It will not sludge transformer oil.

Supplied at .875 specific gravity and should be reduced from 20% to 30% for 2-coat work with benzine for best results.

The baking time on large coils on 2-coat work is 12 to 14 hours at 250°F. For one-coat work, a longer time should be used.

No. 2 Clear Baking Varnish

This is a hard drying, through and through baking varnish. It has medium life under continued heating at elevated temperatures. It is oil, moisture, and acid proof. The dielectric strength is of the best. It has found particular application in the small relay and radio coils. It fits in well in general repair shop practice. For use on small high speed rotating apparatus, it gives an armature which will not throw varnish at high speeds and which will not relax and allow coils to shift their position. It is used extensively on drill and vacuum cleaner armatures which operate at speeds over 10,000 rpm.

This varnish is supplied at .875 specific gravity and should be reduced 20% to 30% with benzine for 2-coat work. The baking time, depending on the size of the coil, is from 4 to 12 hours at 250°F.

No. 3 Clear Synthetic Varnish

This varnish is designed for the more severe applications where very high speeds and operating temperatures are met. This varnish has extremely high dielectric strength, both wet and dry. It is oil, acid, and alkali proof. It has great resistance to salt spray and all kinds of chemicals and vapors met with in dye house and mine work. It is harder baking than the No. 2 clear baking varnish and has no tendency to relax at high temperatures and speeds.

This varnish is supplied at .960 specific gravity and should be reduced 10% to 20% with No. 109 base thinner for one or 2-coat work. It should be baked 8 to 10 hours at 250°F. Where it is used as a first coat under the No. 2 clear baking varnish, it can be baked for 4 hours at 250°F.

No. 4 Clear Air Drying Insulating Varnish

This is a clear varnish for all types of coils and armatures where it is not practical to use a baking varnish. It has good dielectric strength, both wet and dry. It is quite flexible and is oil and acid proof. It has good binding and cementing properties.

This varnish is supplied at .902 specific gravity and should be reduced 20% to 30% with benzine for 2-coat work. It can be applied by spraying, brushing, or dipping. When applied as a finishing varnish, it will air dry at ordinary room temperatures in 4 or 5 hours. This varnish can also be baked.

No. 5 Black Baking Varnish

This is the highest type of insulating varnish on the market at the present time. This is an extremely flexible varnish which has very long life under continued heat stress. It has very high dry dielectric strength and a wet dielectric greater than any varnish now available. It is absolutely oilproof and is, of course, acid proof. The film is firm, dries with a gloss free from grease, and does not wrinkle or frost when applied in thick coats. It can be used on all types of coils and armatures, but has found most wide application in the larger types of equipment.

Supplied at .870 specific gravity and should be reduced 30% to 40% with benzine for 2-coat work. It should be baked 12 to 14 hours at 250°F. or 8 hours at 275°F.

No. 6 Black Baking Varnish

This varnish is very similar to the No. 5 black baking varnish in that it has exceptionally good wet and dry dielectric strength together with the best of life under high heat. It is

oil resistant and is not affected by acids. It dries with a greasy finish which prevents the moisture from entering the film. This varnish has found particular application in the larger equipment field.

This varnish is supplied at .860 specific gravity and should be reduced 20% to 30% with benzine for 2-coat work. It should be baked 12 to 14 hours at 250°F.

No. 7 Quick Black Baking Varnish

This is a hard, tough varnish which is moisture, oil and acid proof. It has a medium life under continued heat, together with excellent binding and cementing properties. It dries with a hard, flexible film which has a high gloss. This varnish is designed for use on small coils and armatures which, due to production schedules or lack of oven space, must be baked quickly. Can also be used as a combination insulating and primary or finishing varnish. It has been particularly designed to have a minimum amount of softening under maximum operating temperatures.

Supplied at .875 specific gravity and should be reduced 20% to 30% with benzine for 2-coat work. It will bake in 5 hours at 300°F. or 7 to 8 hours at 250°F.

No. 8 Black Air Drying Varnish

This is a black air drying varnish of the asphaltic type which is supplied to the general repair shop and coil trade. It dries to a hard, glossy film which is acid and moisture proof, and which is quite oilproof. It will air dry on a flat surface in 4 to 6 hours, and in the inside of a coil in 3 to 4 hours at 250°F. It is difficult to air dry impregnating varnishes as it is almost impossible to get rid of the entrapped solvents at room temperatures.

Supplied at .850 specific gravity and should be reduced 10% to 20% with benzine for spraying or brushing purposes.

No. 9 Black Air Drying Varnish

This is the same type of varnish as No. 8 black air drying except that it will dry on a flat surface in about thirty minutes. The dried film has a rich, full gloss which is flexible, moisture and oilproof. It is highly oil resistant.

Supplied at .840 specific gravity and should be reduced 10% to 20% with benzine for spraying or brushing.

No. 10 Black Spirit Varnish

This is a black spirit varnish which dries to a rich full gloss. The film is absolutely oilproof and has found particular application as a finishing varnish on coils already impregnated with a baking or air drying varnish. It is quite flexible and moisture resistant. Because of its glossy finish, it serves to prevent the accumulation of dirt and oil on the surface of coils and armatures, and can be wiped off with a gasoline saturated rag without injury to the film.

It will air dry in fifteen minutes at room temperatures and should be thinned to brushing or spraying body with denatured alcohol. It is supplied at 1.010 specific gravity.

No. 11 Red Insulating Enamel

This is a red insulating enamel which is absolutely oilproof as well as highly moisture and acid proof. It is quite flexible and will not become brittle with age. It will dry to handle in less than an hour at room temperature, which makes it of great interest where speed is of importance. Because of its bright glossy surface, it will not collect oil or dirt which might contribute to shorting or arcing over of current. The electrical man is finding more and more uses for this type of insulating enamel in such applications as: Commutator ends, the inside of motor frames and brackets, the inside of controller boxes, and the outside of coils and armatures which are subjected to severe chemical and atmospheric conditions. This enamel is not designed as an impregnating material.

Should be thinned 10% to 20% for spraying or brushing with No. 300 synthetic thinner.

No. 12 Gray Machine Enamel

This enamel is used for finishing the outside of motor frames and brackets. It has standard gray motor color. It will air dry to an eggshell gloss in one hour. It is tough, durable, adherent to metal, and resistant to oil and water.

Can be thinned 20% to 30% with benzine for spraying or brushing.

Varnish

Due to the physical characteristics of the raw materials now available for use in insulating varnishes, it is not possible to make a universal varnish or one which can be used on all types of equipment. For example, varnish to be used on small high speed armature, such as the starting and lighting type, must dry hard through and through, giving a well baked out, tightly bound armature which will not throw varnish and whose coils will not be loosened under speeds of 10 or 12,000 rpm. On the other hand, varnish to be used in the large oil filled transformers must be very flexible, have long life under continued heat stress, and be entirely oil-proof. Obviously, two distinct varnishes must be used to fulfill these opposite conditions.

Black varnishes usually have greater dielectric strength, longer life, and greater water resistance than the clears. Clear varnishes have better binding properties and greater oil resistance.

A careful study of each particular insulating problem should be made before any one type of varnish is selected. There is a varnish for every purpose and if a standard type will not do the job, a special one can be made which will meet the requirements.

Nos. 4, 8, and 9 Air Drying Varnishes can be used on any surface application when a full coat, insulating and waterproofing finish is required.

No. 10 Black Spirit Varnish can be used as a finishing varnish where an oilproof film is required.

No. 11 Red Insulating Enamel is used chiefly on commutator ends, controller boxes, the inside of motor frames, and any place where a high gloss, tough, oilproof finish is needed.

No. 12 Gray Machine Enamel is used as a finish coat on touch-up material on the outside of motor frames.

Guide for Baking Varnish Application

Type of Apparatus	Armatures No.	Field Coils No.	Stators No.	Form Wound Coils No.
R. R. & Turbine Generators..	1	1	1	1
	5	5	5	5
	6	6	6	6
Large Industrial Motors.....	1	1	1	1
	5	5	5	5
	6	10	6	...
Medium Industrial Motors...	1	1	1	...
	2	5	5	2
	5	...	6	5
	6	...	...	...
Industrial Motors.....	2	2	2	2
Fractional Hp.....	5	5	...	...
	7	7	7	7
Vacuum Cleaner.....	2	2	...	...
Mixer.....	3	...	...	...
Automotive.....	2	2	...	...
Starter and Generator.....	3	...	...	7
Transformers—Power.....	...	...	...	1
	...	...	...	5
General Repair Shop.....	2	2	2	2
	5	5	5	5
	7	7	7	7
Miscellaneous:				
Radio Transformer.....	...	...	...	2
Solenoid Coils.....	...	...	...	7

Characteristics of Baking Varnishes

No.	Color	Type of Film	Baking Time Hours	RELATIVE DIELECTRIC STRENGTH	Relative Life under Heat	Relative Oil Resistance
				Dry	Wet	
5	Black	Elastic, Tough	12-14	1	2	2
6	Black	Plastic, Greasy	12-14	1	1	1
7	Black	Hard, Tough	7-8	1	3	3
1	Clear	Flexible	12-14	1	3	1
2	Clear	Hard, Tough	4-12	1	3	3
3	Clear	Very Hard, Tough	8-10	1	3	3

Characteristics of Air Drying Varnishes

No.	Color	Type of Film	Air Drying Time Hours	RELATIVE DIELECTRIC STRENGTH	Relative Life	Relative Oil Resistance
				Dry	Wet	
8	Black	Hard	3-4	1	3	3
9	Black	Hard	1/2-1	1	3	2
4	Clear	Hard	4-5	1	3	1
10	Black	Hard	1/4-1/2	2	3	4

Figures in above table indicate relative value for characteristic described. Figure 1 represents the highest value.

Ideal Commutator and Slip Ring Resurfacers

Commutator Resurfacers

Extra Coarse. Exceptionally fast cutting. For "hogging" off excessive copper or other metals.

Coarse. Fast cutting. For use where a fair amount of copper or other material is to be removed.

Medium. For general utility, high mica, small ridges and burns.

Finish. For use after three grades above, bringing the surface to a velvet which quickly becomes a gloss after the brushes have been lowered. Used particularly for periodic application, and for the removal of small burns and ridges, immediately after their appearance.

Polish. An excellent grade, which gives a burnished finish. Made of an exceedingly fine, 220-grain aggregate.

Per Cubic Inch.....\$.40

No. 81 Slip Ring Resurfacers

Designed especially for grinding steel and cast iron slip rings. This resurfacer is a slight conductor and should be used with the current off and no load on machine.

Coarse No. 81. For rapid grinding and for removing large quantities of material.

Medium No. 81. For general utility and removing small pits and burns.

Finish No. 81. For final application after Coarse No. 81 or Medium No. 81 has been used.

Per Cubic Inch.....\$.40

Pencil Type (No Handle)

For fans or signal motors, auto generators, locomotive headlight motors and other fractional horse power motors.

Straight Handle Type

Used primarily on inaccessible types of commutators on small or enclosed motors.

There are four standard sizes, but other larger sizes can be made to order.



Vertical Adjustable, Tramway and Railway Handle Types

These three types of resurfacers are for use on medium size motors and small generators.

Vertical Adjustable Handle. The knob handle is fastened permanently. The extra rod handle makes this type universal to meet practically all conditions. The knob is drilled on two sides, also on the top, so that the rod handle can be adjusted to any one of three positions.

Tramway Handle. This is a stout handle with a good grip, permanently mounted at a 45° angle.

Railway Handle. This is a stout handle with a good grip, permanently mounted in a vertical position.

Wood Block Handle or Tool Type

For use in Ideal Precision Grinders or any type of lathe truing device. Equipped with wood block handle for clamping rigidly into the grinder.

U Handle and Saw Handle Types

These types are for use on large motors, small rotary converters, motor-generator sets, telephone generators, etc.

U Handle. Preferred when the stone is to be used with the handle parallel to the brush arm.

Saw Handle. Desirable when the stone is to be used with the handle at right angles to the brush arm.

Double U Handle and Double Saw Handle Types are also available.

Slip Ring Types

To secure the most efficient grinding results, specify material from which rings are made, such as iron, steel, bronze, or brass. When space permits, use a resurfacer, about 1 inch wider than the ring, bridging over the entire width. Resurfacer should be three times as long as the flat spots as bridging over them assures a perfect job.



"2-in-1" Pocket Type

For all-around shop practice. Made up in any combination of the five grades, two grades being cemented together.

Prices and Complete Information Sent on Request

Condensed Listing of Ideal Commutator Motor Winding and Repair Shop Tools

Brush Seaters

For seating carbon, graphite or metal-composition brushes. Standard size: length, 4¾ inches; face, 1½x5/8 inch. Per Dozen..... \$7.50

Portable Precision Grinders

No. 6 Perfect Model. A high grade precision tool for use with Ideal Tool-Type Resurfacers. Adaptable to all open type commutators and rings. Furnished in any one of fifteen different lengths, ranging from 6 to 36 inches inclusive by 2-inch variations.

Shipping weight, 12-inch size, 45 pounds.
No. 6, with 12-Inch Bed Plate, Including Brush Arm. Supports..... each \$122.50
For Each Additional 2 Inches..... 3.75

No. 8 Ideal Model. Designed especially for use in close quarters or on machines with outboard fans, large bearing pedestals, or close end frames. Furnished in the same lengths as the No. 6 Perfect Model.

Shipping weight, 12-inch size, 45 pounds.
No. 8, with 12-Inch Bed Plate, Including Brush Arm. Supports..... each \$156.25
For Each Additional 2 Inches..... 3.75

No. 4 Midget Model. Designed especially for use on small commutators having a face width of 8 inches or less, as well as for use on medium-sized slip rings. For use with Ideal Tool-Type Resurfacers. Compact design allows working in small spaces.

Shipping weight, 20 pounds.
No. 6, with Brush Arm Supports..... each \$81.25

No. 22 Commutator Turning Tool Heads

An excellent tool for removing the bead or ridge of copper left on the inside of the commutator next to the riser. Net weight, 7 pounds.

For Perfect and Ideal Model Precision Grinders..... each \$31.25
For Midget Model Precision Grinders..... each 24.40

No. 7 Universal Power Mica Undercutters

Cuts smoothly without vibrations. May be used in space only 2¾ inches wide.

Weight, including motor, 52 pounds.
Complete with Standard 110 Volt A.C. 60 Cycle Motor..... each \$156.25
Complete, but without Motor; with Motor Shaft Connection..... each 135.30

If desired, other voltages and cycles can be furnished at extra charge; also undercutters for d.c.

No. 11 Shop Type Undercutters

This undercutter is light enough for easy handling, and sturdy enough for continual heavy duty undercutting. Net weight of head only, 2¾ pounds.

No. 11, without Motor..... each \$135.30

No. 9 Direct Drive Undercutters

Intended primarily for field use, but the rugged, sturdy design makes this undercutter suitable also for shop use. Weight, with 8-foot cord, 5¾ pounds.

With 110-Volt Universal Motor..... each \$98.10
With 220-Volt (Also 250-Volt) Universal Motor..... each 107.95
If roller guide is omitted, deduct \$4.35.

Commutator Saws and Milling Cutters

Made of Special No. 1 High Speed Steel. Available in all types and sizes, not only for the Ideal Undercutter, but any type of undercutter. Available in outside diameters from ¼ to 1½ inches inclusive. Prices on application.

Slotting Files

Specially designed and constructed for commutator use. Weight per dozen, 1 pound.

No. 3 Large 8-Inch Type..... each \$1.12
No. 5 9½-Inch Single End Type (Specify Draw-Cut or Double-Cut)..... each .94

No. 6 Hand Type Commutator Mica Slotters and Scrapers

Designed for use on small commutators, and for plants which do not have sufficient work for a power driven unit.
No. 6..... each \$3.12

No. 12 Revolution Counters

The dial has scale divisions reading from zero to 100, and also from zero to 10,000. Overall height, 7 inches. Net weight, 2½ pounds.

No. 12..... each \$21.87

Balancing Ways

Indispensable for the static balancing of motor armatures, crank shafts, pulleys, fly wheels, etc.

No.....	10	20	42
Each.....	\$36.87	48.12	55.00
Capacity..... pounds	400	1000	1000

Approximate Shipping Weight.
..... pounds 13 43 105
Longer shafts can be furnished at slight extra charge.

Growlers

Used to quickly locate grounds and shorts.
Type U-2. Used as an external growler for armatures and as an internal growler for stators.

Type S. Contained in oblong cases; made in two sizes, with and without meters.

Type F. Made with a built-in feeler, and shaped to test armatures and stators.
Specifications and prices will be furnished on request.

Insulation Testers

Indicates in a second whether or not there is a short, ground or broken wire. Suitable for testing insulation of low voltage equipment. Capacity, 500 to 2500 volts.

For 110 volts, 50-60 cycles. Weight, 15 pounds.
Each..... \$47.50

No. 2 Armature Winding Heads

Winds small universal, shaded pole, two pole d.c. or re-ulsion induction motor armatures.
Net weight of head, 2 pounds.

No. 2..... each \$56.25

Coil Winder Heads

No. 5 Midget Model. For making coils 4x1¾ inches minimum up to 8½x6½ inches maximum.
Weight, 10 pounds.

No. 5..... each \$43.10

No. 10 Universal Model. Winds coils up to 13x16½ inches.
Weight, 35 pounds.

No. 10..... each \$71.87

No. 210 Coil Winder Drives

Gives an infinite number of driving speeds between 120 and 650 rpm. by moving control lever.
Weight, approximately 180 pounds.

No. 210 Complete..... each \$368.75

No. 4 Armature Winding Yokes

Winds any type armature with a shaft 9 to 19 inches long.
Weight, 28 pounds.

No. 4..... each \$75.00

No. 12 Armature and Stator Holders

Ideally suited for holding work while soldering commutator leads, inserting insulation, inserting wedges, banding armatures, rewinding, removing and inserting coils on stators or armatures, etc.

Approximate shipping weight, 40 pounds.
No. 12..... each \$31.25

No. 20 Concentric Field Coil Winding Heads

Designed for the winding of popular size, single phase motor coils. Adjustable for length and width.
Weight, 20 pounds.

No. 20..... each \$92.50

No. 9-C Brush Type Wire Strippers

Cleans enamel wire rapidly. Cleanly strips cotton and enamel, silk and enamel, string asbestos and similar types of light insulation from round wire, flat or rectangular wire, or solid or stranded wire.

Net weight, approximately 50 pounds.
No. 9-C Complete..... each \$181.25

No. 13 Vertical Brush Type Wire Strippers

For cleaning the coverings from armature leads before soldering them to the commutator riser.
Net weight, approximately 185 pounds.

No. 13 Complete..... each \$312.50

No. 8 Rotary Type Wire Strippers

This powerful, motor-driven wire stripper is needed wherever volume stripping is done. Strips wire up to ½-inch outside diameter. Net weight, 45 pounds.

No. 8 Complete..... each \$125.00
Extra Blades, Carboloy Tipped..... per set 12.50

Select-O-Speed Transmissions

Operates machine at exact speed needed for maximum quality production. Available with lever control, handwheel control, or electric motorized control. Prices on request.

Orangeburg Fibre Conduit

Orangeburg *Standard* Conduit, for Installation with Concrete Encasement Orangeburg *NOCRETE* Conduit, for Installation without Concrete Encasement

Since 1893, Orangeburg Fibre Conduit has been a standard of quality in underground construction. First to pioneer a material of unique merit for the difficult conditions encountered in underground construction, The Fibre Conduit Company has maintained leadership by constant research for product and service improvement.

While installations of Orangeburg Fibre Conduit made over thirty years ago are common, at many points installations made forty and more years ago are still providing clear, usable raceway.

The test supreme—the test of time in actual experience—has proved that Orangeburg gives permanent cable protection without any deformation that in any manner obstructs the raceway or reduces its (cross-sectional area) capacity.

Cable protection is, obviously, a primary requirement of underground transmission and distribution conduit. The characteristics of Orangeburg Conduits are unique in their balanced properties for maximum cable protection through decades of service.

Characteristics

Orangeburg Conduits are essentially tubes of everlasting, chemically inert pitch, felted fibre reinforced, which under all the difficult physical and chemical conditions encountered underground in all parts of the world remain neutral and afford 100% cable facilities and protection.

Orangeburg Conduits are smooth of bore, of frictional and abrasive minima and positively chemically inert.

Although mechanically strong conduit, the bore of Orangeburg does not abrade, tear or otherwise damage even the soft cover of lead-sheath cable . . . so often resulting in heavy maintenance costs, interruptions to service and expensive rebuilding of ducts.

Electrolytic action is impossible as between any metal (or other substance) and this material. Time has proved that high maintenance or replacement expense because of cable corrosion (whether alkaline contact, which develops through the years, or other corrosive agency) does not exist when Orangeburg is used. Laboratory tests are thus confirmed in fact.

Dielectric strength of Orangeburg, of importance in some applications, is very high.

Every Orangeburg item is inspected 100% and a special inspection staff is maintained constantly checking all materials and processes.

Installed and handled on the hottest deserts; in the bitter cold within the Arctic Circle; buried in the corrosive back-fill of seaside, tidewater locations; in cinder fill; in rain or shine; Orangeburg Conduits have economically and completely met the most difficult conditions conceivable.

Both Orangeburg *Standard* Fibre Conduit and Orangeburg *NOCRETE* Conduit are made of the same materials with identical cable sheath protection values.

The Ultimate Economy

When it is considered that the cost of an underground distribution system (of which conduit is a small part) is a capital investment made, not just for years, but for decades of service, the importance of the actual test of time under the varied and persistently difficult chemical and physical conditions encountered underground cannot be over-emphasized.

No-cost-saving compromise is tolerated in the production of the finest conduits for true economy in permanent service and enduring cable protection. Constant research has developed many product improvements consistently advancing Orangeburg in terms of the ultimate economy of underground installation.

Immediate Economy

Orangeburg Fibre Conduit is easy to handle. Light in weight, yet amply strong to resist breakage, it can be transported to the job in large truck loads, quickly unloaded and placed, one man carrying several lengths at a time.

The light weight, uniform long sections and careful machining of Orangeburg conduits are of great advantage in the aligning and assembling of the ducts resulting in labor savings and lower installation costs.

Precision machining of joints and couplings insures quick, perfect tight fit and "true" alignment. Tight-fitting joints are important in any underground cable system. All Orangeburg joints must pass three or more separate inspections before final approval. Seepage is thus prevented and the protective features of Orangeburg extended throughout the ductway.

The latest manufacturing improvements of Orangeburg, resulting in increased mechanical strengths per unit of wall thickness, permit savings of substantial amounts. For concrete encasement, the cost-saving is not only reflected in the lower prices of Orangeburg *Standard* Conduit but in the reduced amounts of concrete thickness required for any possible load.

The new Orangeburg *NOCRETE* Conduit, for use without concrete envelope, reflects savings of outstanding importance where installations of this character are contemplated.

Material costs for underground construction with Orangeburg compare favorably with any other material of any type, and are consistently held to the lowest possible figure in an effort to foster development of underground construction.

Research and Control Laboratory

A complete up-to-date laboratory is maintained by The Fibre Conduit Company.

All raw materials and the finished product are regularly tested to assure uniform quality and the maintenance of Orangeburg standards.

A continuing program of research and development work has resulted in substantial improvements in the product.

Of recent, outstanding importance is Orangeburg improved high-vacuum impregnation. A denser, more homogeneous wall structure has resulted in greatly increased mechanical strengths and practically unlimited life-expectancy.

For installation underground with concrete encasement, Orangeburg *Standard* Fibre Conduit is recommended for duct banks (4 ducts and over), main distribution, high tension and downtown locations.

For installation without concrete encasement, the Orangeburg dual-economy *NOCRETE* Conduit is recommended for house connections, laterals and extensions; street and parkway lighting; fire alarm and signal systems; sub-station yards; and industrial and institution grounds.

Features of Orangeburg *NOCRETE* Conduit

Conduit for installation underground without concrete encasement must have two prime characteristics: mechanical strength, and ability to endure permanently.

Because of its mechanical strength, steel conduit (or iron pipe) has been the most widely used for such type of installation. While there is no disputing the adequacy of its initial strength, corrosive agencies soon minimize or nullify the original strength. Corrosion develops from two sources: (1) Most soils contain to some degree (and cinder filled ground to a great degree) elements corrosive to ferrous metals. (2) Electrolysis caused by stray electric currents creates highly destructive action on metallic conduit.

STRENGTH. Made stronger and tougher than any fibre conduit ever before produced. High beam and crush strengths enable Orangeburg *NOCRETE* Conduit to withstand soil stresses.

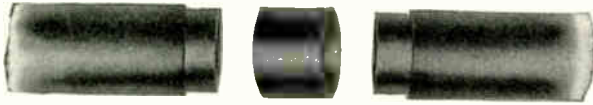
PERMANENCE. Orangeburg *NOCRETE* Conduit is immune to all the corrosive elements encountered in the soil.

CABLE PROTECTION. *NOCRETE* is chemically inert and has all the values of permanent cable protection which have characterized Orangeburg for forty-five years. Being smooth of bore, cable pulling is easy and without danger of abrasion. With water-tight joints, high resistance to electric currents, *NOCRETE* provides protection against electrolysis and other damage to cable sheath.

DUAL ECONOMY. *NOCRETE* offers substantial savings in both initial material and installation costs. About half the cost of metal pipe, it will be found lower in ultimate cost than even cable buried directly in the ground. The easy handling, cutting and tooling of *NOCRETE* will reflect installation costs lower than any other type of conduit.

Orangeburg Standard Fibre Conduit

Harrington (Tapered Sleeve) Joint



Standard Conduit, for installation underground with concrete encasement, is recommended for duct banks (4 ducts and over), main distribution, high tension and downtown locations.

A Harrington Joint Coupling is furnished for every length of conduit, without extra charge, unless otherwise specified when ordering.

All Harrington Joint dimensions are standard and interchangeable, precision machined for tight connections. The design permits slight offset at couplings where field conditions require.

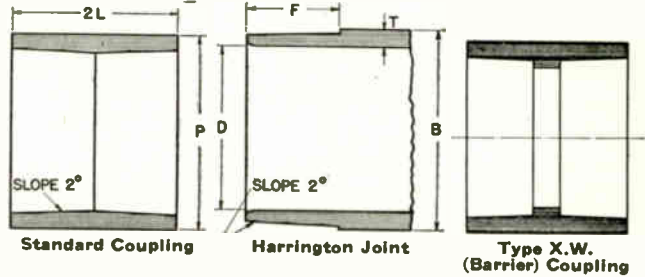
The X.W. (barrier wall) Harrington Joint Coupling is available at no extra charge when so specified. The length of barrier is a full half inch in the 2 and 2½-inch coupling sizes and a full inch in the 3, 3½, 4, 4½ and 5-inch sizes. The Standard Orangeburg Coupling is recommended, however, as it provides a clear even raceway and does not assemble with the pockets which may be objectionable in the barrier wall (or fillet) type coupling.

*The right is reserved to include 10% to 15% of lengths shorter than standard.

"Rough fit" couplings (loose sleeve to conduit O.D.) for joining butted ends of untooled conduit can be supplied for every size.

Dimensions

D Size Inches	Standard Conduit, Harrington Joint			Harrington Joint Coupling	
	T Wall Inches	F Joint Inches	Standard Length Feet	2L Inches	P Minimum Inches
1	.20	.94	5	2.0	1.7
1½	.25	1.31	5	2.75	2.45
2	.25	1.43	5	3.0	2.97
2½	.25	1.43	8	3.0	3.48
3	.25	1.69	8	3.5	3.99
3½	.25	1.69	8	3.5	4.56
4	.26	1.94	8	4.0	5.12
4½	.28	1.94	8	4.0	5.73
5	.30	1.94	5	4.0	6.38
6	.40	1.94	5	4.0	7.47
8	.56	1.94	5	4.0	9.72



Bends and Elbows

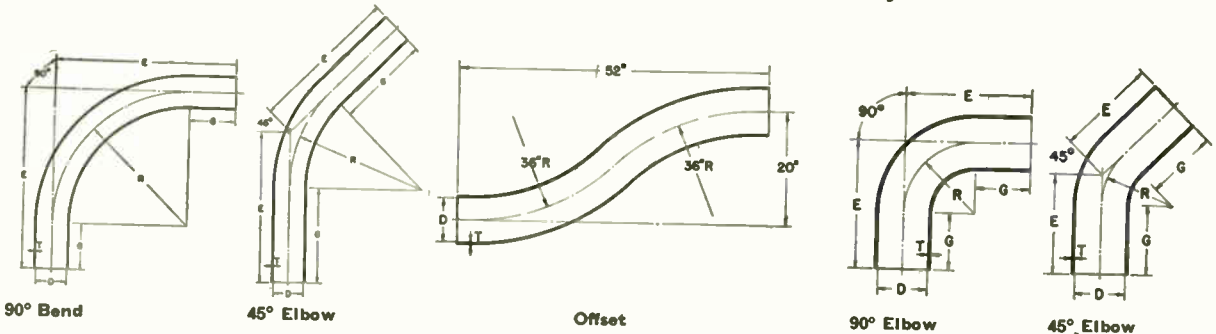
Orangeburg Fibre Conduit Bends and Elbows are accurately made, with special forms, to the required radius and degree. Furnished with standard interchangeable Harrington Joint (coupling included) or, if specified, socket joint.

All bends of radius and degree carried in stock at factory are 5 feet long. All elbows have short tangent beyond necessary length for angle required.

Special angle, special radius, split bends or elbows can be furnished to order.



Dimensions—Bends and Elbows Stocked at Factory



D Nom. Diam. In.	T Nom. Thick. In.	Bends												Elbows					
		18-INCH RADIUS				24-INCH RADIUS				36-INCH RADIUS				90°		45°			
		E In.	G In.	E In.	G In.	E In.	G In.	E In.	G In.	E In.	G In.	E In.	G In.	E In.	G In.				
1	3/16	34	16	31	23	35	11	31	20½	38	2	31	16	5½	11½	5½	8	5½	
1½	1/4	34	16	31	23	35	11	31	20½	38	2	31	16	8½	14½	6	10	6	
2	1/4	34	16	31	23	35	11	31	20½	38	2	31	16	9½	15½	6	10	6	
2½	1/4	..	..	..	..	35	11	31	20½	38	2	31	16	10½	16½	6	10½	6
3	1/4	..	..	..	..	35	11	31	20½	38	2	31	16	13	19½	6½	11½	6½
3½	3/8	..	..	..	..	..	..	..	..	38	2	31	16	15	21½	6½	12½	6½
4	1/2	..	..	..	..	..	..	..	..	38	2	31	16	16	22½	6½	13½	6½
4½	5/16	..	..	..	..	..	..	..	..	38	2	31	16	18	24½	6½	14	6½
5	3/8	..	..	..	..	..	..	..	..	36	..	30	15	24	30½	6½	16½	6½
6	3/8	..	..	..	..	..	..	..	..	36	..	30	15	..	..	..	..	..
8	3/16	..	..	..	..	30½	6½	..	..	..	..	27	12½	..	..	..	..	..

Dimensions include finished joint.
 "S" bends with 20-inch offset and 36-inch radius are stocked at factory in sizes from 1 to 4½ inches.
 Other sizes and dimensions on special order.

Orangeburg NOCRETE Fibre Conduit Harrington (Tapered Sleeve) Joint



NOCRETE Conduit, for installation without concrete encasement, is recommended for house connections, laterals and extensions; street and parkway lighting; fire alarm and signal systems; sub-station yards; and industrial and institution grounds.

To those not accustomed to Orangeburg Fibre Conduit, assembly with the Harrington Joint Coupling will be found surprisingly simple. Accurate machining of the joint enables a tight connection by easy drive using a block and mallet.

The standard lengths (8-foot—5-foot in some sizes) enable rapid progress and good alignment. Orangeburg NOCRETE Conduit is readily cut by ordinary wood saw. It can be tooled to exact fit with inexpensive, portable tooling machine, hand operated.

The trench bottom should be graded reasonably true and free from stones. A 3-inch bed of selected backfill should be laid where there is rock foundation. Backfill should be soft dirt, sand or other fine fill which should be placed around the ducts and firmly tamped into place with hand tampers. After a "cover" of three inches of this selected backfill has been placed and tamped down over the top of the ducts, the remaining depth of the trench may be filled with regular run of excavated material. Care should be taken, however, to remove all unusually large stones or other hard objects. Power tampers may be used on this final fill. When more than one tier of ducts is used, a separation layer of three inches of backfill should be tamped into place around and over the bottom tier or ducts. Horizontally, a minimum separation of two inches between ducts is recommended to enable proper tamping of backfill.

Unless otherwise specified, Orangeburg NOCRETE Conduit is supplied with the Harrington (tapered sleeve) Joint and coupling. One coupling is furnished for every length of conduit, without extra charge, unless otherwise specified, when ordering.

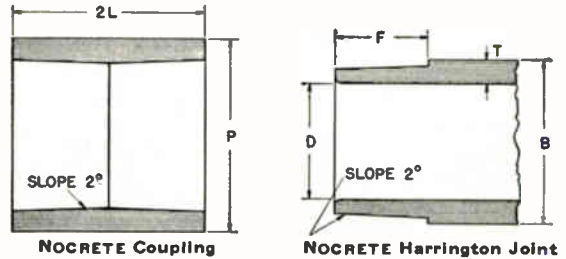
All Harrington joint dimensions of Orangeburg NOCRETE are interchangeable for that line but require adapters to connect with Standard Orangeburg Conduit.

Orangeburg NOCRETE Conduit Bends and Elbows are accurately made, with special forms, to the required radius and degree. Furnished with NOCRETE Harrington Joint (coupling included) or, if specified, socket joint.

All joints and couplings are precision machined for tight connection. The design permits slight offset at couplings where field conditions require.

Orangeburg NOCRETE Conduit can be furnished with socket joint, when so specified, without extra charge. The socket joint is sometimes of advantage where the O.D. of the Harrington Joint Coupling is objectionable due to narrow clearance or for pole risers.

Dimensions



NOCRETE Conduit, Harrington Joint						Harrington Joint Couplings	
D Size Inches	T Wall Inches	F Joint Inches	Standard Length Feet	*Shorts Feet	2L Inches	P Inches	
1½	.38	1.43	5	4, 4.5	3	2.90	
2	.40	1.68	5	4, 4.5	3.5	3.48	
2½	.43	1.68	8	5, 6, 7	3.5	4.03	
3	.45	1.93	8	5, 6, 7	4	4.57	
3½	.48	1.93	8	5, 6, 7	4	5.12	
4	.50	2.18	8	5, 6, 7	4.5	5.69	
4½	.53	2.18	5	4, 4.5	4.5	6.23	

All dimensions are subject to manufacturing tolerances and may be modified without notice.

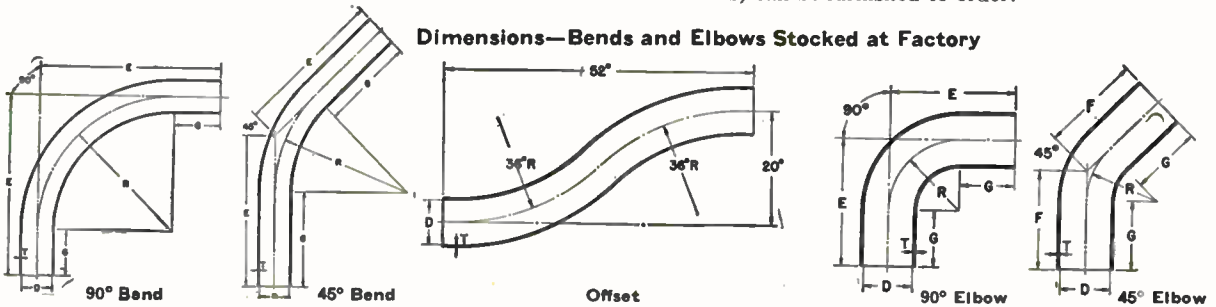
*The right is reserved to include 10% to 15% of lengths shorter than standard. All shorts included are packed separately in any shipment to facilitate identification and easy count.

Orangeburg NOCRETE Conduit Shorts are cut to even lengths less than standard as indicated. Each piece is fully tooled and coupling is furnished without extra charge. Shorts are generally of considerable assistance in avoiding obstacles by coupling offset.

Bends and Elbows

All bends of radius and degree carried in stock at factory are 5 feet long. All elbows have short tangent beyond necessary length for angle required.

Special angle or special radius (above minima indicated for elbows) can be furnished to order.



D Nom. Diam. In.	T Nom. Thick. In.	Bends						Elbows									
		18-INCH RADIUS			24-INCH RADIUS			36-INCH RADIUS		Elbows							
		90°		45°		90°		45°		90°		45°					
		E	G	E	G	E	G	E	G	Radius	E	F	G				
		In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	(Approx.) In.				
1½	.38	34	16	31	23	35	11	31	20.5	38	2	31	16	8.25	14.25	9.5	6
2	.40	34	16	31	23	35	11	31	20.5	38	2	31	16	9.5	15.5	10	6
2½	.43	..	..	..	..	35	11	31	20.5	38	2	31	16	10.5	16.5	10.5	6
3	.45	..	..	..	..	35	11	31	20.5	38	2	31	16	13	19.25	11.5	6.25
3½	.48	..	..	..	..	..	..	..	..	38	2	31	16	15	21.25	12.5	6.25
4	.50	..	..	..	..	..	..	..	..	38	2	31	16	16	22.5	13.25	6.5
4½	.53	..	..	..	..	..	..	..	..	38	2	31	16	18	24.5	14	6.5

S Bends with 20-inch offset and 36-inch radius are stocked at factory in sizes from 1½ to 4½ inches. Other sizes and dimensions on special order.

Miscellaneous Fittings. Orangeburg NOCRETE Fittings include every type of adapter, reducer, bell end, cap, plug, connector, etc. similar in purpose to those described on following page for Orangeburg Standard Conduit.

Orangeburg Standard Fibre Conduit Fittings

(Similar Fittings Also Available for Orangeburg NOCRETE Conduit)

End Bells

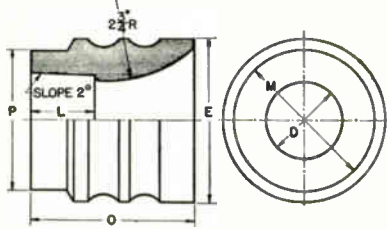


For use at conduit terminals in manholes, at substations, etc., these end bells provide a wide radius flare which facilitates cable bending and protects the cable sheath from abrasion.

The greatly increased strength of the improved end bells insures against breakage under all conditions. End bells are available for conduit sizes 1 to 6 inches, inclusive.

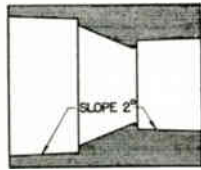
The standard tooling is Harrington Joint for duct connection. If specified, socket joint or rough fit sleeve can be supplied.

End bells with extended neck can be made up on special order for special applications. Porcelain end bells can be furnished when so specified.



Size Inches	DIMENSIONS, INCHES					
	D	E	L	M	O	P
1	1 1/16	2 15/16	1	2 1/2	3 1/2	2 1/2
1 1/2	1 9/8	3 7/16	1 3/8	2 15/16	3 1/2	2 15/16
2	2 1/16	3 15/16	1 1/2	3 7/16	3 1/2	3 7/16
2 1/2	2 9/16	4 1/2	1 1/2	3 15/16	4	3 15/16
3	3 1/8	5 1/16	1 3/4	4 1/2	4	4 1/2
3 1/2	3 9/16	5 3/4	1 3/4	5 1/16	4	5 1/16
4	4 1/8	6 3/8	2	5 3/4	4	5 3/4
4 1/2	4 9/16	6 7/8	2	6 3/8	4 1/2	6 3/8
5	5 1/16	7 1/2	2	6 7/8	4 1/2	6 7/8

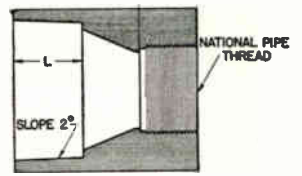
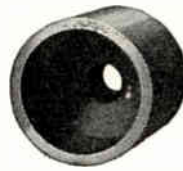
Reducers



Reducers from one size conduit to another are available in all combinations from 1 to 6 inches inclusive. The standard reducer is Harrington Joint at

both ends. Sizes and types of conduit, joints, etc. to be connected must be specified in detail.

Adapters



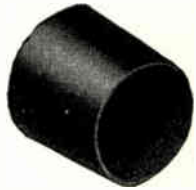
Adapters from metal pipe to fibre conduit are available in all combinations from 1 to 6 inches inclusive.

The standard adapter is Harrington joint at the fibre end and threaded for metal pipe size specified, at the other end. Can be supplied straight bore for unthreaded metal pipe or undersize for self-threading. Sizes and types of connections desired must be specified.

Fibre Plugs

For temporarily closing ends of ducts during concreting, etc.

Available for 2 to 6-inch size conduits inclusive.



Fibre Bushings



Solid



Split

Available for all conduit sizes 1 1/2 to 5 inches inclusive.

Fibre Caps

For sealing spare ducts or exposed conduit ends, etc. Harrington joint is standard; socket joint or sleeve fit if specified.

Made for conduit sizes 1 to 6 inches inclusive.



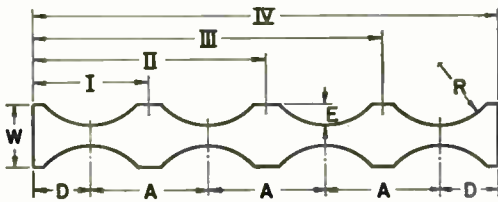
Orangeburg Fibre Conduit Accessories

Spacers (Bridges or Separators)

For built-up fibre conduit installations, grooved spacers of fireproof composition are available for one, two, three or four conduit wide assemblies. These spacers are cast accurately and can be furnished for conduit sizes from 2 to 4 1/2 inches inclusive.

As the general practice is to allow a separation of 1 inch between conduits, this is the standard separation provided. However, for special applications, spacers can be supplied for 1 1/2, 2 or 3-inch separation between ducts.

Orangeburg Conduit Spacers are handled as a service item. Although built for minimum weight with adequate strength, transportation cost may make it more economical for the large user at distant points to make his own spacers. Complete information as to mix employed will be cheerfully furnished upon request.



Dimensions, Inches, of Conduit Spacers

Conduit Inches	R	E	1-INCH SEPARATION			1 1/2-INCH SEPARATION			2-INCH SEPARATION			3-INCH SEPARATION		
			A	D	W	A	D	W	A	D	W	A	D	W
2	1 5/16	5 5/8	3 5/8	1 3/4	2 1/4	4 1/8	2	2 3/4	4 5/8	2 1/4	3 1/4	5 3/4	2 13/16	4 1/4
2 1/2	1 9/16	3 3/4	4 7/8	2	2 1/2	4 5/8	2 1/4	3	5 1/4	2 9/16	3 1/2	6 1/4	3 1/16	4 1/2
3	1 13/16	7 8	4 5/8	2 1/4	2 3/4	5 1/4	2 9/16	3 1/4	5 3/4	2 13/16	3 3/4	6 3/8	3 1/4	4 3/4
3 1/2	2 1/8	1	5 1/4	2 9/16	3	5 3/4	2 13/16	3 1/2	6 1/4	3 1/16	4	7 1/4	3 9/16	5
4	2 3/8	1 1/8	5 3/4	2 13/16	3 1/4	6 1/4	3 1/16	3 3/4	6 7/8	3 3/8	4 1/4	7 3/4	3 13/16	5 1/4
4 1/2	2 11/16	1 1/4	6 5/8	3 1/4	3 1/2	6 7/8	3 3/8	4	7 1/4	3 9/16	4 1/2	8 3/8	4 1/8	5 1/2

Overall Length, Inches

Conduit Inches	1-INCH SEPARATION				1 1/2-INCH SEPARATION				2-INCH SEPARATION				3-INCH SEPARATION			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
2	3 1/2	7 1/8	10 3/4	14 3/8	4	8 1/8	12 1/4	16 3/8	4 1/2	9 1/8	13 3/4	18 3/8	5 5/8	11 3/8	17 1/8	22 7/8
2 1/2	4	8 1/8	12 1/4	16 3/8	4 1/2	9 1/8	13 3/4	18 3/8	5 1/8	10 3/8	15 5/8	20 7/8	6 1/8	12 3/8	18 5/8	24 3/8
3	4 1/2	9 1/8	13 3/4	18 3/8	5 1/8	10 5/8	15 5/8	20 7/8	5 5/8	11 3/8	17 1/8	22 7/8	6 1/2	13 1/8	19 3/4	26 3/8
3 1/2	5 1/8	10 3/8	15 5/8	20 7/8	5 5/8	11 3/8	17 1/8	22 7/8	6 1/8	12 3/8	18 5/8	24 7/8	7 1/8	14 3/8	21 5/8	28 3/8
4	5 5/8	11 3/8	17 1/8	22 7/8	6 3/8	12 3/8	18 5/8	24 7/8	6 3/4	13 5/8	20 1/2	27 5/8	7 5/8	15 3/8	23 3/8	30 7/8
4 1/2	6 1/2	13 1/8	19 3/4	26 3/8	6 3/4	13 5/8	20 1/2	27 5/8	7 1/8	14 3/8	21 5/8	28 3/8	8 1/4	16 5/8	25	33 3/8

Dimensions I, II, III and IV indicate overall length of spacer for 1, 2, 3 or 4 conduits laterally spaced.

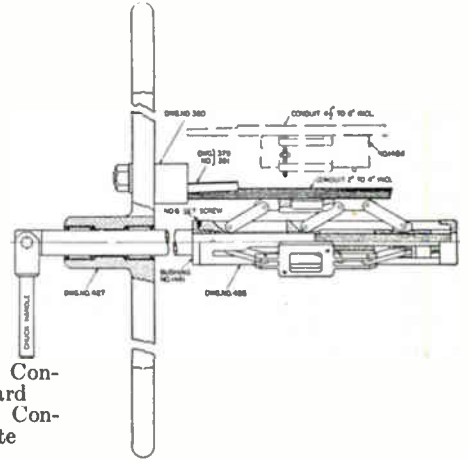
Orangeburg Fibre Conduit Tooling Lathes

Packed in a sturdy wood case for convenient transportation and use in the field, this lathe is designed to produce close tolerance joints easily and rapidly. The economy of quick accurate tooling over crude hand cutting, salvaging short lengths and accurate fitting to manhole, etc. quickly repays the user for the moderate cost of this device.



Part No.	Description	No. Req.
379	Long Cutting Tool (Harrington Joint)...	1
380	Tool Holder (Harrington Joint).....	1
381	Short Cutting Tool (Harrington Joint)...	1
421	Screwdriver.....	1
422	Combination Wrench...	1
426	Chuck Assembly.....	1
427	Cutting Handle.....	1
1484	Extension Pads.....	3
1728	Hand Lathe Box.....	1
*420	Tool Holder (Socket Joint).....	1
*428	Socket Joint Cutter and Controller, 2 to 6-Inch Standard	
*429	Socket Joint Cutter and Controller, 2 to 5-Inch Nocrete	

*Furnished only when specified.



Orangeburg Fibre Conduit Jointing Compound

Orangeburg Fibre Conduit Jointing Compound, which hardens within a few hours and acts as a strong cement, is occasionally specified by engineers. Its use is not a necessity. A majority of the Orangeburg Fibre Conduit installed is put in without jointing compound as Orangeburg Joints are machined accurately, and the ends are beveled slightly, making a water tight fit when properly assembled.

To figure quantity required, use basis of one pint per thousand feet of conduit per inch of inside diameter of conduit. If ends are to be dipped instead of painted, double this quantity. Painting is preferable to dipping—it results in a better job and is, perhaps, no more expensive.

Jointing compound is available in barrels (60 gallons), half barrels (30 gallons), and 5 and 1-gallon cans.

Economical Handling. At both freight car doors, there will be found a car chart detailing every item.

All Orangeburg lengths are even footage, saving checking time in figuring inches. Shorts are conveniently segregated.

Economical Transportation. Orangeburg Conduit is transported by rail or truck most economically because it combines light weight with ample strength to resist breakage. The largest truck bodies can be loaded to maximum cubic carrying capacity, reducing trips and hourly costs to an almost negligible cost per foot.

Orangeburg price schedules are based on total weight of material involved, including all bends, elbows and items classified as fittings (*Standard* and *NOCRETE*); excluding items classified as accessories (such as spacers, jointing compound, tools, etc.).

Orangeburg Standard Conduit and Fittings

Conduit Inches	Conduit		Conduit Fittings WEIGHT, POUNDS EACH				
	Weight Pounds per Foot	*Min. Feet per 30,000 Lb.	*Min. Feet per 10,000 Lb.	Extra Couplings	Reducers, Adapters, Caps	Plugs, Bushings	Bends, Elbows
1	.60	50,000	16,667	.10	....	....	3.00
1½	.85	35,295	11,765	.19	....	....	4.25
2	1.05	28,572	9,523	.22	1.36	.40	5.25
2½	1.30	23,077	7,692	.30	1.62	.60	6.50
3	1.40	21,429	7,143	.45	1.81	.70	8.00
3½	1.60	18,750	6,250	.50	1.87	.70	9.50
4	1.90	15,790	5,264	.55	2.00	1.10	11.50
4½	2.20	13,637	4,546	.65	2.33	1.20	13.25
5	2.80	10,715	3,572	1.00	2.70	1.70	16.25
6	4.25	7,059	2,352	1.37	3.61	1.90	21.25
8	6.75	4,445	1,482	....	....	....	....
10	8.30	3,615	1,205	....	....	....	....
12	12.40	2,420	807	....	....	....	....
18	16.00	1,875	625	....	....	....	....

Split Conduits (Half-Round or Sectional) Slotted, Pierced or Sectional

Orangeburg Conduits can be furnished split in half-round (cross section) or, slotted with single cut, in any size or type at nominal upcharge per foot.

It can be furnished with sectional cuts at specified degrees and, also, in specified lengths (standard length or less) pierced with holes as desired.

This type material is frequently used for pole risers, under crossarms, transformer lead covering, etc.

Socket Joints (Mortise and Tenon)

Orangeburg Fibre Conduit is available with socket joint in all sizes. It is generally preferred for pole risers as it enables the riser to closely follow the contour of the pole, either in the full round conduit or split in the half-round, etc.

Shipping Weights and Data

Shorts. The right is reserved to include 10% to 15% of lengths shorter than standard.

All shorts included are packed separately in any shipment, to facilitate identification and easy count. Shorts are cut to even lengths six or twelve inches less than standard.

Class A Orders. 30,000 pounds (minimum car) or over.

Class B Orders. 10,000 to 29,999 pounds.

Class C Orders. 9,999 pounds or less.

Crating. There is an extra charge for crating Class A and B orders, if so specified. Class C orders are usually packaged for less carload handling.

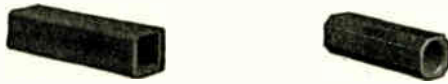
The weights listed below are used for pricing computations only (approximate shipping weights).

Orangeburg NOCRETE Conduit and Fittings

Conduit Inches	Conduit		Conduit Fittings WEIGHT, POUNDS EACH				
	Weight Pounds per Foot	*Min. Feet per 30,000 Lb.	*Min. Feet per 10,000 Lb.	Extra Couplings	Reducers, Adapters, Caps	Plugs, Bushings	Bends, Elbows
1½	1.4	21,429	7,143	.40	1.4	.3	7.0
2	2.1	14,286	4,762	.65	1.6	.4	9.5
2½	2.6	11,539	3,847	.85	1.8	.6	12.0
3	3.3	9,090	3,030	1.00	1.9	.7	15.0
3½	3.7	8,109	2,703	1.30	2.0	.7	18.5
4	4.1	7,318	2,439	1.45	2.3	1.1	22.0
4½	5.1	5,883	1,961	1.60	2.7	2.3	25.5

*Do not overlook that weights of bends and other fibre items are included in figuring minimum weights; consequently such items on an order will decrease footage indicated in the conduit weight tables. This includes combination orders covering both Orangeburg NOCRETE Conduit and Orangeburg Standard Conduit.

Natco Standard Single Duct Conduit



Adapted for high tension power lines, single cable terminals or for low tension laterals, as in telephone or signal lines.

In building up duct banks, this conduit provides two heavy insulating walls between adjacent cables, and permits breaking or staggering of all joints throughout the duct bank.

Permits the splaying or separation of individual duct lines in approaches to manholes.

Conduit is scarified lengthwise on the four outer sides, to provide anchorage for bedding mortar.

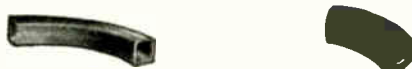
The inner edges of the duct entrances are properly bevelled and smoothed to eliminate projections and to make safe the pulling of cables.

Certain square single duct shapes are provided with through dowel holes in the corners, permitting the use of steel dowel pins for assembling, centering and aligning such duct lines.

Standard length, 18 inches, except in the 5 1/4-inch round bore shape which is 24 inches long. Short lengths as shown in table, are available for staggering joints.

Nom-inal Bore In.	No. Duct Holes	Std. Lgth. In.	Duct Ft. per Pe.	Actual Size Duct Hole In.	Approx. Out-side Dimen. In.	Made in Short Lgths. In.	Min. Car-load Duct Ft.
3 1/4 Rd.	1	18	1 1/2	3 3/8	4 1/2 x 4 1/2	3, 4, 6, 9, 12	7800
3 1/2 Rd.	1	18	1 1/2	3 5/8	4 7/8 x 4 7/8	3, 4, 6, 9, 12	6900
4 1/4 Rd.	1	18	1 1/2	4 3/8	5 5/8 x 5 5/8	3, 4, 6, 9, 12	5700
5 1/4 Rd.	1	24	2	5 3/8	6 7/8 x 6 7/8	3, 4, 6, 8, 12	4000
3 1/4 Sq.	1	18	1 1/2	3 3/8	4 3/4 x 4 3/4	3, 4, 6, 9, 12	6100
3 1/2 Sq.	1	18	1 1/2	3 5/8	5 x 5	3, 4, 6, 9, 12	5700
4 1/4 Sq.	1	18	1 1/2	4 3/8	5 1/8 x 5 1/8	3, 4, 6, 9, 12	4800

Natco Single Duct Bends



Standard Shapes

Bore.....	3 1/4, 3 1/2 or 4 1/4	Round or Square
Angle.....	45°	90°
Radius.....inches	12, 18, 24 or 36	12, 18, 24

Arc or Length

Bore.....inches	3 1/4, 3 1/2 or 4 1/4 Rd.	3 1/4, 3 1/2 or 4 1/4 Sq.
Length.....inches	18	18
Radius.....inches	36, 60, 72 or 96	36, 60, 72 or 96

Bends also supplied that are scored for splitting apart.

Natco Single Duct Conduit for Underground Distribution

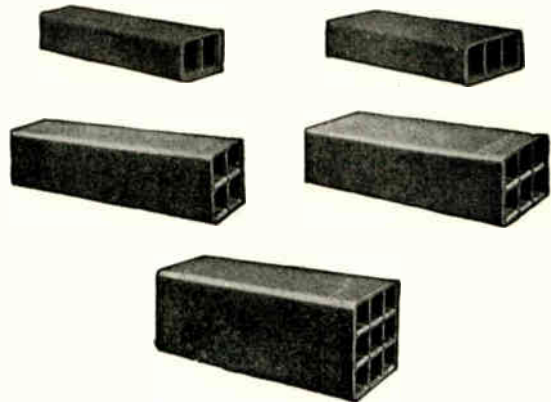
Fitted with 5/32-Inch Steel Dowel Pins

Fitted with 5/32-inch steel dowel pins for effecting easy and accurate alignment also with rubber bands for enclosing joint prior to application of mortar or concrete encasement.

Advantages: Light weight; longer lengths; round bore in common sizes; controlled alignment with dowel pins; rubber band or adhesive tape joints; new exterior shape with flat sides and rounded corners; new type scarification; new end bevel, rounded and smooth; a deaired product; smoother, stronger and uniform in shape and dimensions; improved uniform glaze; non-corrosive to cable; low absorption; high thermal conductivity; displaces and saves concrete.

Diameter.....inches	2 1/2	3	3 1/2	4	4 1/2
Length.....inches	18	18	24	24	30

Natco Standard Multiple Duct Conduit



Particularly adapted for telephone, telegraph, railway signal, fire alarm and low tension light and power service. The large units are economical and quick to install, due to their longer lengths and multiplicity of duct holes.

At the extreme ends of each piece of conduit, a smooth surface is left to permit wrapping each joint with tape or fabric to exclude joint mortar from the ducts.

Supplied in either 3 1/4, 3 1/2 or 4 1/4-inch square bore shapes and in 2, 3, 4, 6 and 9-way multiple shapes.

The 3 1/4 inch is the standard bore, while 4 1/4 inch is the over-size bore, for most telephone service and for certain low tension power and lighting systems, while the 3 1/2 inch bore is frequently specified for certain municipal installation.

Nom-inal Bore In.	No. Duct Holes	Std. Lgth. In.	Duct Ft. per Pe.	Actual Size Duct Hole In.	Approx. Out-side Dimen. In.	Made in Short Lgths. In.	Min. Car-load Duct Ft.
3 1/4 Sq.	2	24	4	3 3/8	4 3/4 x 8 3/4	6, 8, 12	7600
3 1/4 Sq.	3	24	6	3 3/8	4 3/4 x 12 3/4	6, 8, 12	7500
3 1/4 Sq.	4	36	12	3 3/8	8 3/4 x 8 3/4	6, 9, 12	8400
3 1/4 Sq.	6	36	18	3 3/8	8 3/4 x 12 3/4	6, 9, 12	9000
3 1/4 Sq.	9	36	27	3 3/8	12 3/4 x 12 3/4	6, 9, 12	9000
3 1/2 Sq.	2	24	4	3 5/8	5 1/8 x 9 5/8	6, 8, 12	6400
3 1/2 Sq.	3	24	6	3 5/8	5 1/8 x 13 5/8	6, 8, 12	6900
3 1/2 Sq.	4	36	12	3 5/8	9 5/8 x 9 5/8	6, 9, 12	7500
3 1/2 Sq.	6	36	18	3 5/8	9 5/8 x 13 5/8	6, 9, 12	8100
4 1/4 Sq.	2	24	4	4 3/8	5 1/8 x 11	6, 8, 12	5200
4 1/4 Sq.	3	24	6	4 3/8	5 1/8 x 16 1/8	6, 8, 12	5400
4 1/4 Sq.	4	36	12	4 3/8	11 x 11	6, 9, 12	6000
4 1/4 Sq.	6	36	18	4 3/8	11 x 16 1/8	6, 9, 12	6300
4 1/4 Sq.	9	24	18	4 3/8	16 1/8 x 16 1/8	6, 8, 12	6800

Natco Split Conduit



Natco Conduit in both single and multiple duct shapes and in all standard bores is supplied, scored or knifed, for splitting apart on the job, for repairing or replacing duct lines, without the necessity of removing cables.

These split sections may be also used to enclose cable joints or splices in place of building manholes.

Bore Inches	No. of Duct Holes	Standard Length Inches	Short Lengths Inches
3 1/4, 3 1/2 or 4 1/4 Rd.	Sgl. Duct	18	6, 9, 12
3 1/4, 3 1/2 or 4 1/4 Sq.	Sgl. Duct	18	6, 9, 12
3 1/4 Sq.	2 or 3-Way	18 and 24	6, 9, 12
3 1/4 Sq.	4 or 6-Way	18 and 36	6, 9, 12
3 1/4 Sq.	9-Way	18	6, 9, 12
3 1/2 Sq.	2 or 3-Way	18 and 24	6, 9, 12
3 1/2 Sq.	4 or 6-Way	18 and 36	6, 9, 12
4 1/4 Sq.	2 or 3-Way	18	6
4 1/4 Sq.	4 or 6-Way	18	6
4 1/4 Sq.	9-Way	18	6

Natco Mitred Conduit

For Curve Construction



Natco Conduit, both single and multiple duct, in all standard bores, is supplied in mitred shapes, for building either simple or intricate curves in lines of clay conduit, for transposing narrow duct banks into wide ones or vice versa, or for splaying duct lines to enter manholes or service points.

Natco Mitred Conduit is made in one standard cut—3 degree and 10-foot radius. The radius of curves built of these sections, is varied simply by interposing straight short pieces between the mitred sections, and the arc of such curves is governed simply by the total number of pieces used.

True and easy curves from 10 to 30 foot radius, and ranging from 3 to 90 degrees, can thus be built.

In the 2, 3 and 6-way multiple conduit, the mitred sections are supplied in either a flat or edge position.

Mitred conduit also supplied scored for splitting apart.

Approximate length, 6x6 $\frac{5}{8}$ inches. Number of pieces in 90° curve, 30.

Bore Inches	No. of Duct Holes	Position
3 $\frac{1}{4}$, 3 $\frac{1}{2}$, or 4 $\frac{1}{4}$	Round	.....
3 $\frac{1}{4}$, 3 $\frac{1}{2}$, or 4 $\frac{1}{4}$	Square	.....
3 $\frac{1}{4}$, 3 $\frac{1}{2}$, or 4 $\frac{1}{4}$	Square	Flat or Edge
3 $\frac{1}{4}$, 3 $\frac{1}{2}$, or 4 $\frac{1}{4}$	4-Way	.....
3 $\frac{1}{4}$ or 4 $\frac{1}{4}$	9-Way	.....

Natco Branch Conduit

For Dividing Multiple Duct Main Lines



Natco Multiple Duct Conduit is supplied in branch shapes in all standard bores.

Natco Branch Conduit is a new shape, one end of which is the same shape and size as standard conduit, while at the opposite end, certain ducts are more widely separated by means of double webs, so as to permit alignment with abutting branch lines.

Branch conduit permits the division of multiple duct main lines into two or more branch lines, each having a smaller number of ducts than the main line. Such a division is highly advantageous in splaying main duct lines into central office buildings, manholes or cable vaults, or for turning laterals or service connections. It frequently saves the necessity of manholes.

Also supplied scored for splitting apart.

Length, 24 inches.

Bore Inches	No. of Duct Holes	Type	For Branching Into
3 $\frac{1}{4}$, 3 $\frac{1}{2}$ or 4 $\frac{1}{4}$	2-Way	1-1	2 Single Duct
3 $\frac{1}{4}$, 3 $\frac{1}{2}$ or 4 $\frac{1}{4}$	3-Way	1-2	1 Single and 1 Two-Way
3 $\frac{1}{4}$, 3 $\frac{1}{2}$ or 4 $\frac{1}{4}$	3-Way	1-1-1	3 Single Duct
3 $\frac{1}{4}$, 3 $\frac{1}{2}$ or 4 $\frac{1}{4}$	4-Way	2-2	2 Two-Way
3 $\frac{1}{4}$, 3 $\frac{1}{2}$ or 4 $\frac{1}{4}$	6-Way	2-4	1 Two-Way and 1 Four-Way
3 $\frac{1}{4}$, 3 $\frac{1}{2}$ or 4 $\frac{1}{4}$	6-Way	2-2-2	3 Two-Way
3 $\frac{1}{4}$, 3 $\frac{1}{2}$ or 4 $\frac{1}{4}$	6-Way	3-3	2 Three-Way
3 $\frac{1}{4}$, or 4 $\frac{1}{4}$	9-Way	3-6	1 Three-Way and 1 Six-Way

Natco Transposition Conduit

For Transposing or Twisting 2, 3 and 6-Way Conduit Lines



Natco Multiple Duct Conduit is also supplied in transposition shapes in 2, 3 and 6-way multiples, with right or left-hand twist. The degree or angle of twist is 22 $\frac{1}{2}$ ° for 3 $\frac{1}{4}$ -inch bore shapes, 18° for 3 $\frac{1}{2}$ -inch bore shapes and 15° for 4 $\frac{1}{4}$ -inch bore shapes, and the standard length is 24 inches.

The number of pieces required to effect a quarter turn of 90° from a flat to an edge position, or vice versa, is four pieces in the 3 $\frac{1}{4}$ -inch bore, five pieces in 3 $\frac{1}{2}$ -inch bore or six pieces in the 4 $\frac{1}{4}$ -inch bore sizes.

These transposition shapes are of considerable advantage in changing the position or height of conduit lines, in order to avoid certain street obstructions, or to cross viaducts or bridges, or to change the position of cables on their approach to manholes or cable vaults, all of which frequently eliminates the need of manholes.

Bore.....inches	3 $\frac{1}{4}$	3 $\frac{1}{2}$	4 $\frac{1}{4}$
Twist.....	22 $\frac{1}{2}$ °	18°	15°
No. of Pieces in $\frac{1}{4}$ Turn.....	4	5	6

Direction of twist, right or left hand.

Natco Pipe Connectors



Single Duct Connector



2-Way Connector



3-Way Connector



Rear View of Connector Ready to Receive Conduit

For the purpose of connecting clay conduit lines to iron pipe lines as in pole risers or to enter buildings, Natco Pipe Connectors are available in the sizes shown below.

These connectors are made of cast iron, one end is shaped to receive the end of the clay conduit line, while the opposite end of the connector is tapped and threaded to receive the iron pipe lines.

For connecting to smaller sizes of pipe, ordinary pipe bushings can be screwed into these connectors to accommodate any standard size pipe.

Single Duct Connector

For 3 $\frac{1}{4}$ -inch bore conduit 3-inch pipe or 4 $\frac{1}{4}$ -inch bore conduit 4-inch pipe.

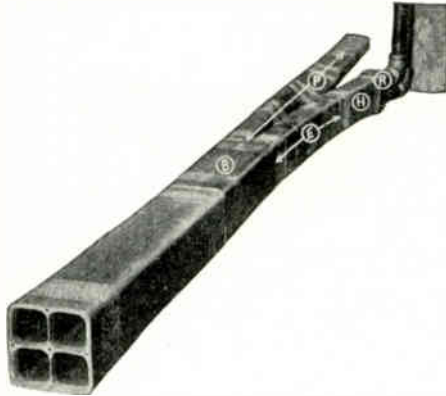
2-Way Connector

For 3 $\frac{1}{4}$ -inch bore conduit 3-inch pipe or 4 $\frac{1}{4}$ -inch bore conduit 4-inch pipe.

3-Way Connector

For 3 $\frac{1}{4}$ -inch bore conduit 3-inch pipe or 4 $\frac{1}{4}$ -inch bore conduit 4-inch pipe.

No. 106 Natco Conduit



Illustrating the conversion of a 4-way multiple duct line into two 2-way multiple duct lines in an edge position, one of which is flexed or curved to one side in the direction of a pole and terminated in two riser iron pipe lines, ascending the pole, while the other 2-way line is transposed or twisted 90° from an edge to a flat position in a distance of 8 feet and then continued straight on in the form of standard 2-way multiple duct conduit—in a flat position.

Specifications

B—One-piece 4-way type 2-2 branch conduit, 2 feet long (for dividing the 4-way line into two 2-way lines).

E—Six pieces 2-way mitred conduit—edge position—3° 10-inch radius—6¼ inches long, (for flexing or curving one of the 2-way lines to one side in the direction of the pole. The angle of flexure shown is 18° but any angle of flexure divisible by 3, may be attained by varying the number of mitred pieces).

H—One-piece 2-way standard conduit, 2 feet long (laid in edge position—to extend the flexed 2-way line on towards pole).

R—One cast iron 2-way connector for 3-inch wrought iron pipe.

P—Four pieces 2-way left-hand transposition conduit, 22½°, 2 feet long (for transposing the other 2-way line 90° from an edge to a flat position).

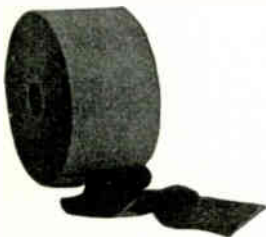
Dowel Pins



Pressed steel pins, 5/16x3 inches, with an integral central flange or collar, are generally used for joining or aligning individual sections of multiple duct, also certain sizes of square bore single duct conduit together.

Two pins are used at each joint or for each piece of conduit.

Joint Tape



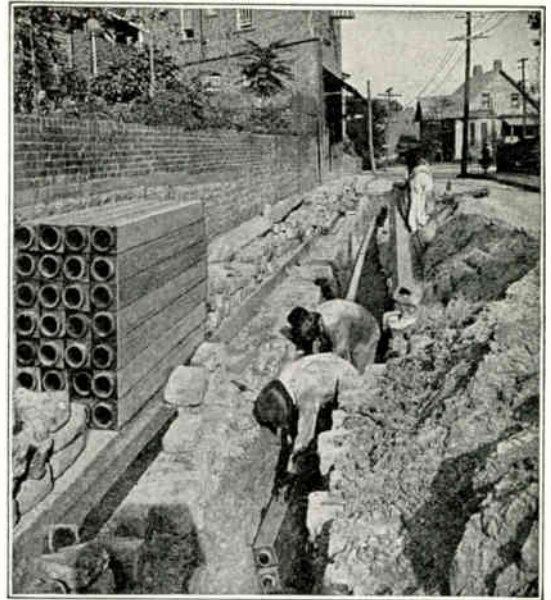
An especially prepared tape is frequently used for wrapping the joints of multiple duct conduit prior to the application of the joint mortar, also occasionally used for wrapping joints of single duct conduit in trench, subway or masonry structures, prior to the pouring of the concrete encasement.

This tape has an adhesive waterproof coating on one side, and is supplied in 4 and 6-inch widths, and put up in rolls of 25 linear yards.

Tape adheres closely and firmly to the glazed surface of the conduit and aids in sealing the joints.

In ordering, specify total number of linear yards required.

Rainier Wood Conduit



Wood conduit (pump-log) has been used by telephone and telegraph companies for over 50 years.

Manufactured from Southern yellow pine. Pressure creosoted. Furnished in random lengths, 2 to 10 feet, mostly in 6 to 8-foot lengths.

Each piece has a mortise at one end and a tenon on the other end, insuring a snug, secure joint.

No.	RC-734	RC-733-5	RC-733	RC-732
O.D. in.	5½x5½	5x5	4½x4½	3½x3½
Bore Diam. in.	4	3½	3	2
Wt. per Lin. Ft. lb.	7.5	6.4	5.3	4

Prices upon application.

Manhole Frames and Covers



Square

Cat. No.	SIZE, INCHES		Ht. In.	Wt., Lbs. Each	Price Each
	Opening	Flange			
229	17x22	31x36	6	340	\$25.00
271	18x30	26x38	5	375	26.00
278	28x32	38x42	7¼	620	49.00

Round

202	23	36	9	540	\$30.50
204	23	36	9	450	29.00
206	23	36	9	400	27.50
208	23	35	7	350	24.00
211	23	36	6	315	22.50
212	22	30	5¼	265	20.00

Diamond Manhole Cover Hooks

This is a useful tool for the subway construction force. It is designed to easily raise a heavy manhole cover by prying the wedged point end of the hook under the groove provided in the cover for the purpose.

The hook is made of an excellent quality of electric tool steel suitably hardened at and adjacent to the hook to prevent its bending, and at the same time sufficiently tough to prevent breaking off.

Price.....each \$1.50



Minerallac Insulating Compound

For Use in Cable Joints, Potheads and Terminal Bells



High Voltage Compound

No. 1. A compound having the consistency of molasses. Not affected by moisture. Especially effective in drying out tape and cloth, and between layers of such materials when wound on high-voltage electrical apparatus.

No. 2A. Cable joint or pothead compound. Melting point, 82°C. One of the most important characteristics of this compound is its ability to adhere to metal or porcelain. Suitable for use in warm climates.

No. 64. A compound suitable for use in mild climates where there is no great variation in temperature. A hard compound with a melting point of approximately 93°C.

No. 78. Cable joint or pothead compound. Dense and adhesive with little shrinkage. Recommended as an all-purpose insulating material. Low moisture absorption; pliable. Recommended for voltages 6000 and up. Melting point, 90°C. Dielectric strength 940 volts per mil at 30°C.

No. 80. Pothead compound. A hard compound for use on 6000 volts and over. Melting point, 130°C. Tests 990 volts per mil at 30°C.

No. 104. A semi-solid compound for use in cable joints on high voltage lines over 6000. Melting point, 50°C. Dielectric strength averages 800 volts per mil at 30°C.

No. 104A. A semi-solid compound with the same general characteristics as No. 104, except that it has a lower melting point (35°C.). Average viscosity, 800 seconds at 100°C. For use on high voltage potheads and cable joints where a low melting point compound is required.

Size Container.....gallons	1/2	1	2	5	*400
Per Gallon.....	\$2.25	1.75	1.70	1.55	.75

*Closed steel drum weighing approximately 400 pounds.

High Voltage Compound—Oil Insoluble

No. 33. For use in cable joints, potheads and terminals, and other electrical apparatus where a close seal against oil filtration is specified. For protection of transformer bushings on oil-filled transformers.

Size Container.....gallons	1	2	5
Per Gallon.....	\$2.75	2.70	2.55

Low Voltage Compound

High melting point compound for low voltage work. Softening point, 127°C. For use on low voltage distribution cables, street lighting, telephone work, etc. where a close seal is desired.

Size Container..gallons	1/2	1	2	5	*400	†400
Per Gallon.....	\$2.00	1.50	1.45	1.30	.60	.50

*Closed steel drum weighing approximately 400 pounds.

†Open headed sheet iron drum weighing approximately 400 pounds.

General Cable Unit Package Splicing and Jointing Materials

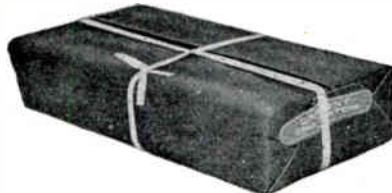


For convenience of customers, the complete materials required for splices and joints on all types of cable are put up in handy unit package form. By purchasing splicing and jointing materials in this manner, an accumulation of dead stock in the store room is prevented and the time and expense of buying the various items required for the work from more than one source is saved.

When ordering, specify number and size of conductors, thickness of insulation and lead sheath and voltage rating.

No. 2769 McGill Crescent Chatterton Compound

Domestic Brand



A para rubber compound for insulating 75% pure rubber. Gives complete assurance against danger of open contacts and terminals; can also be used for waterproofing. Used on all high grade electrical work. Formed in 1/4-pound sticks, 1 inch in diameter and 8 inches long.

Put up 10 sticks in a package; weight, 2 1/2 pounds.
No. 2769.....per pound \$2.00

No. 150 Minerallac Cable Pulling Compound

Minerallac Cable Pulling Compound is applied to the cable at the entrance of the cable feeder with a stiff brush. The properties of this compound cause it to cling to and lubricate the full length of the cable and conduit. The compound will follow through curves and bends in the conduit, eliminating damage to the cable sheath. No. 150 Cable Pulling Compound has the following features:

Chemically inert—no deterioration to either cable or conduit, including fiber conduit.

Economical—a comparatively small quantity is sufficient to pull a cable into the conduit: 5 to 7 pounds to pull a 2.83-inch diameter cable into approximately 400 feet of 3 1/2-inch tile conduit.

Not affected by temperature—cables may be pulled at temperatures as low as 10° above zero (F.).

Size Can.....pounds	12	25	60	*600
No. 150.....per pound	\$0.12	0.11	0.10	0.08

*Steel drum weighing approximately 600 pounds.

Cope Safety Compound Kettles



The double flue extending through the kettle bottom and up and out to the sides, conducts the heat to every part of the compound. This insures a uniform melting, thereby preventing all danger of explosion.

The short lip spout eliminates clogging and allows free pouring. The wide kettle opening provides ease in filling and also in dipping tubes and socking.

Made of heavy steel, welded throughout. Has an extra heavy bottom which is inset 1 inch from the base. Tight fitting lid prevents loss of compound.

Capacity, 3 gallons. Diameter, 10 inches; height, 12 inches. Each..... \$8.00

Ruberoid Rapid Asphalt Paint

(Formerly P & B Rapid Asphalt Paint)

Dries quickly to a hard, glossy coating, exceedingly tough and durable and with high insulating properties.

Adapted for cables, switchboards, battery boxes, shelving, conduit joints and all insulating requirements.

Made in medium brushing consistency.



Size Package.....gallon	50	5	1	1/4	1/8
Per Gallon.....	\$1.10	1.25	1.40	1.70	2.00

Ruberoid Black Air-Drying Varnish

(Formerly P & B Black Air-Drying Varnish)

A quick drying, acid resisting and moisture proof, insulating varnish, indispensable in the repair shop and in general construction work.

For quick repairs to dynamos and motors. For feed wires, cables, switchboards and all overhead and underground connections.

Size Package.....gallon	50	5	1	1/4
Per Gallon.....	\$1.00	1.15	1.30	1.60

Empire Duct Rods

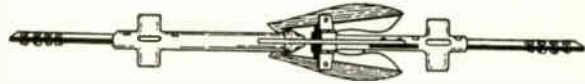


Furnished in two styles, tapered and straight. Tapered sticks are furnished when not otherwise specified. They measure 1 1/4 inches at the middle of the rod and taper to 1 inch at coupling. Straight sticks are furnished of uniform diameter 1 inch throughout.

Couplings are malleable iron. Ends are interchangeable. Axles are machined from brass rod, solid head and shouldered on coupling. Wheels are machined at hub to fit axle and shaped to conform to curve of duct. The rod is made of best selected straight grain well seasoned hickory, tapering to 1 inch at opening.

Length.....feet	3	4
With Wheels.....each	\$1.80	\$2.00
Without Wheels.....each	1.55	1.75

Lewis Rodding Pick-Up Tools



Used on long runs. Made for flat steel tape or any size wooden duct rod. Made to fit any size round or square duct. Rod in from each end and pick-up. Set consists of head and pick-up.

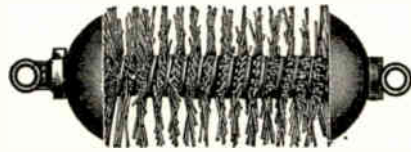
Head is of composition aluminum, copper, and nickel. Minimum tensile strength, 35,000 pounds per square inch. Minimum elongation, 5% in 2 inches. Brinell hardness, 60-80. Springs are of oil-tempered spring steel.

Has four manganese steel pick-up arms. Tensile strength, 68,000 pounds per square inch.

Weight: complete, 2 1/4 pounds; head, 3/4 pound; pick-up, 1 1/2 pounds.

Per Set..... \$20.00

Lewis Duct Brush Cleaners

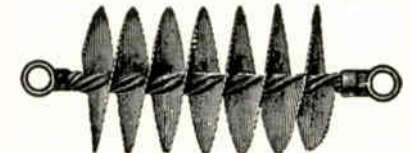


Round Edge Type

A steel wire bristle cleaner for stock work.

Can be pushed or pulled. Will clean and cut obstructions.

Solid steel shaft is made by the twisting of heavy tempered steel wires.



Saw Edge Type

For Round Duct In.

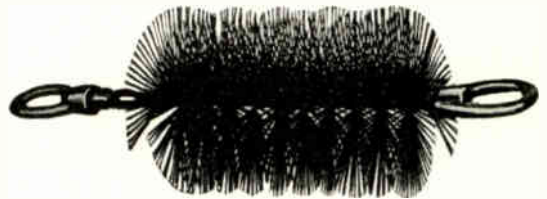
*Round Edge Type Each	\$2.40	\$2.40
3 1/2	2.40	2.40
4	2.40	2.40

Shaft: *1"; 1 1/4".

Cope Wire Brush Cleaners



Single End



Double End

Brush has a flat tempered steel bristle which will remove all sand and other light obstructions.

Made for all size conduits with either a rod connection or socket eyes on both ends.

Diameter.....inches	3	3 1/2	4
Single End.....each	\$2.50	\$2.75	\$3.00
Double End.....each	2.75	3.00	3.25

Diamond Screw Duct Rods



Couplings are made of government bronze. The hickory used in the shaft is selected stock, well seasoned. Threads are accurately cut to 3/4-inch U.S.S., 10 threads per inch. Rivets are countersunk. Hickory shafts are 1/8 inch in diameter.

3-Foot Length.....each	\$1.65
4-Foot Length.....each	1.80

Cope Underground Conduit Tools

Jar Hammers



Used in connection with all types of cutters for removal of stubborn obstructions such as heavy silt, cement, etc.

Made of 2-inch diameter steel tubing with heavy piston and hammer working inside the cylinder.

Size Stroke.....inches	8	12	18
Each.....	\$15.00	17.00	20.00

Laying Mandrels



Body is of well seasoned maple. Rear end is equipped with a leather wiping washer and the forward end with a counter-sunk steel hoop and tool steel cutting edge.

Length, 36 inches. In diameters to fit any size conduit.

Size.....inches	3	3 1/2	4
Each.....	\$4.50	5.00	6.00

Test Mandrels



Round

Square

Made to exact size for testing conduits after laying. Has tool steel cutting ends to remove concrete or other light obstructions. Length, 12 inches.

Size.....inches	3	3 1/2	4
Round.....each	\$4.00	\$5.00	\$6.00
Square.....each	5.00	6.00	7.00

Flexible Mandrels



For testing conduits having bends through which a rigid mandrel would not pass. Constructed of tool steel discs, mounted on a flexible wire rope, securely babbitted to the heavy socket eyes. Will withstand a pull of over 5000 pounds.

Each..... **\$25.00**

Pickups



Used to recover rods or tools lost in the conduit. Can also be used on long pulls where it is desirable to work from both ends.

Pickup has two steel shutters with beveled notches and spring action, so that it will recover and catch firmly no matter what position it may be in within the conduit.

Each..... **\$15.00**

Rod Grapples



Used where long lines of conduit are to be rodded. Permits rodding from both ends of conduit and provides positive connection where they meet. Several hooks engage opposite ends.

Each..... **\$7.50**

Sand Scoops



For removing loose sand and silt which may enter the conduit and prove harmful to lead sheathed cables.

Made of light weight tubing.

Size.....inches	3x15	3 1/2x18	4x20
Each.....	\$6.00	7.00	8.00

Perfection Flat Tape Conduit Rods



In general use by power, electric light, telephone, city fire alarm systems, street railway companies, and contractors in general.

This rod will handle laterals easily. One man can rod 300 feet, using the patent grip handle.

Rods have only one connection to every 200 feet; each length of rod is 100 feet.

The factor of broken rods has been eliminated. The average time required to rod 500 feet with two men is about twenty minutes, at an average cost of about 1/4 cent a running duct foot.

Connections are made quickly and easily with ordinary tools.

1/4x1/16-Inch Size. Will take right angles in 1 1/2-inch conduits. With flexible cleanout leader, ball roller, and adjustable hand grip. On safety holding frame.

In 100 to 500-foot lengths.
Per 100 Feet..... **\$6.00**

1/2x1/16-Inch Size. For 2 to 4-inch ducts. Flexible; will take laterals; will rod over another cable in ducts. Has ball roller and sliding rodding hand grip. On Safety holding frame.

In 100 to 400-foot lengths.
Per 100 Feet..... **\$11.25**

1/2x1/8-Inch Size. For 2 to 4-inch ducts. Rigid; for long runs; flexible enough to take laterals. Has ball roller which indicates clearance in duct where one or more cables are in and more cable is desired. Furnished with adjustable hand grip. On safety holding frame.

In 100 to 400-foot lengths.
Per 100 Feet..... **\$15.75**

3/4x1/16-Inch Size. For 2 to 4-inch ducts. This size is more flexible than the 1/2x1/8-inch size. Has ball roller and adjustable hand grip. On safety holding frame.

In 100 to 400-foot lengths.
Per 100 Feet..... **\$12.75**

3/4x1/8-Inch Standard Size. A standard duct size for long runs. For 3 to 4-inch ducts. This rod replaces the old type wooden rod.

Tensile strength, 225,000 pounds per square inch. Breaking strength, 21,000 pounds. On galvanized safety holding frame.

In 100, 200, and 300-foot lengths.
Net Weight per 100 feet, 33 pounds.
Per 100 Feet..... **\$22.00**

1x1/8-Inch Special Size. A rigid, yet sufficiently flexible rod to take laterals. On safety holding frame.

In 100-foot lengths.
Per 100 Feet..... **\$28.00**

Parts

*†Large Ball Feeding Rollers.....each	\$2.00
*†Small Ball Feeding Rollers.....each	2.00
*†Spear Boring Point, Solid.....each	1.75
16-Inch Sliding Hand Grips.....each	2.50
Pulling Shackles with Towing Bud.....per set	6.00
Mud and Sand Duct Cleaner.....each	8.00
Pick-Up Tools.....per set	20.00
Steel Brushes, All Sizes.....each	2.40
†Revolving Spear Heads, Large.....each	5.00
†Revolving Spear Heads, Small.....each	4.00

*Take laterals easily and slide rod through ducts rapidly.
†For 2 to 4-inch ducts.
†For small ducts or where rodding is done over another cable in ducts.

Reliable Cable Grips

Pulling grips for aerial or underground cable. Luffing grips for pulling slack or removing old cables. Split grips for moving cables where an end is not accessible. All supplied in a full range of sizes.

Single Eye Reinforced Flexible Pulling Grips



For pulling underground cables. Reinforcements protects wires of the grip at shoulder where wear is greatest.

Double Weave							
No.	Lgth. In.	No.	Lgth. In.	No.	Lgth. In.	For Cable Diam. Inches	
1023	24	1033	36	1043	48	1 to 1 3/8	
1024	24	1034	36	1044	48	1 1/2 to 1 7/8	
1025	24	1035	36	1045	48	2 to 2 3/8	
1026	24	1036	36	1046	48	2 1/2 to 2 7/8	
1027	24	1037	36	1047	48	3 to 3 3/8	
1028	24	1038	36	1048	48	3 1/2 to 3 7/8	

Single Eye Plain Flexible Pulling Grips



Single weave for pulling aerial cable. Double weave for pulling underground cables where wear is light and use of reinforced grips is not warranted.

Single Weave				Double Weave				For Cable Diam. Inches
No.	Lgth. In.	No.	Lgth. In.	No.	Lgth. In.	No.	Lgth. In.	
821	18	831	24	...	...	...	...	1/2 to 5/8
822	24	832	36	...	...	...	...	3/4 to 7/8
823	24	833	36	...	...	...	...	1 to 1 3/8
824	24	834	36	924	24	934	36	1 1/2 to 1 7/8
825	24	835	36	925	24	935	36	2 to 2 3/8
826	24	836	36	926	24	936	36	2 1/2 to 2 7/8
827	24	837	36	927	24	937	36	3 to 3 3/8
828	24	838	36	928	24	938	36	3 1/2 to 3 7/8

Single Eye Hard Wire Pulling Grips



These grips are very tough and rather stiff and they withstand great wear. Grip must fit exactly for proper performance.

Double Weave								For Cable Diam. Inches
No.	Length Inches	No.	Length Inches	No.	Length Inches	No.	Length Inches	
801	18	811	24	...	...	...	...	1/2 to 5/8
802	22	812	30	...	...	...	...	3/4 to 7/8
803	22	813	30	...	...	...	...	1 to 1 3/8
804	22	814	30	...	...	...	...	1 1/2 to 1 7/8
805	22	815	30	...	...	...	...	2 to 2 3/8
806	30	816	45	...	...	...	...	2 1/2 to 2 7/8
807	30	817	45	...	...	...	...	3 to 3 3/8
808	30	818	45	...	...	...	...	3 1/2 to 3 7/8

Double Eye Luffing Cable Grips



For pulling slack or removing old cables. Single weave grips for light pulls. Double weave grips for heavy pulls.

Single Weave				Double Weave				For Cable Diam. Inches
No.	Lgth. In.	No.	Lgth. In.	No.	Lgth. In.	No.	Lgth. In.	
842	18	852	24	...	...	...	...	3/4 to 7/8
843	18	853	24	...	...	...	...	1 to 1 3/8
844	18	854	24	944	18	954	24	1 1/2 to 1 7/8
845	18	855	24	945	18	955	24	2 to 2 3/8
846	18	856	24	946	18	956	24	2 1/2 to 2 7/8
847	18	857	24	947	18	957	24	3 to 3 3/8
848	18	858	24	948	18	958	24	3 1/2 to 3 7/8

Prices upon application.

Reliable Cable Grips

Single Eye Luffing Cable Grips



The eye of the grip lies flat against the cable when the strain is applied.

Single Weave				Double Weave				For Cable Diam. Inches
No.	Lgth. In.	No.	Lgth. In.	No.	Lgth. In.	No.	Lgth. In.	
1842	18	1852	24	...	...	...	...	3/4 to 7/8
1843	18	1853	24	...	...	...	...	1 to 1 3/8
1844	18	1854	24	1944	18	1954	24	1 1/2 to 1 7/8
1845	18	1855	22	1945	18	1955	24	2 to 2 3/8
1846	18	1856	24	1946	18	1956	24	2 1/2 to 2 7/8
1847	18	1857	24	1947	18	1957	24	3 to 3 3/8
1848	18	1858	24	1948	18	1958	24	3 1/2 to 3 7/8

Double Eye Split Cable Grips



These grips are for moving working cables or any cables where the end is not accessible.

Single Weave				Double Weave				For Cable Diam. Inches
No.	Lgth. In.	No.	Lgth. In.	No.	Lgth. In.	No.	Lgth. In.	
862	18	872	24	...	...	...	...	3/4 to 7/8
863	18	873	24	...	...	...	...	1 to 1 3/8
864	18	874	24	964	18	974	24	1 1/2 to 1 7/8
865	18	875	24	965	18	975	24	2 to 2 3/8
866	18	876	24	966	18	976	24	2 1/2 to 2 7/8
867	18	877	24	967	18	977	24	3 to 3 3/8
868	18	878	24	968	18	978	24	3 1/2 to 3 7/8

*No hooks, rawhide lacing furnished.

Single Eye Split Cable Grips



Eye lies flat against the cable when strain is applied.

Single Weave				Double Weave				For Cable Diam. Inches
No.	Lgth. In.	No.	Lgth. In.	No.	Lgth. In.	No.	Lgth. In.	
1862	18	1872	24	...	...	...	...	3/4 to 7/8
1863	18	1873	24	...	...	...	...	1 to 1 3/8
1864	18	1874	24	1964	18	1974	24	1 1/2 to 1 7/8
1865	18	1875	24	1965	18	1975	24	2 to 2 3/8
1866	18	1876	24	1966	18	1976	24	2 1/2 to 2 7/8
1867	18	1877	24	1967	18	1977	24	3 to 3 3/8
1868	18	1878	24	1968	18	1978	24	3 1/2 to 3 7/8

Multiple Wire Pulling Grips



Used for pulling any number of insulated wires through conduits.

No.	Capacity Wires							
	WIRE GAGE NUMBER							
	14	12	10	8	6	4	2	1/0 Str.
205	2-5	2-4	2-3	2	...	1	1	...
407	4-7	3-7	2-5	2-4	2	...	1	1
509	5-9	5-9	3-7	2-5	2-3	2	...	1
712	7-12	7-12	4-9	4-7	2-4	2-3	...	...
1220	12-20	11-19	8-13	7-11	3-6	3-5	2-4	...
2030	20-30	18-28	10-16	5-10	6-8	4-6	3-5	2-3

Prices upon application.

Cope Manhole Guard Rails

Made of 3/4-inch standard black steel pipe with seamless steel tubing sleeves. Made with a completely welded construction.

Unless otherwise ordered, all rails are painted with two coats of Signal Red Enamel.

Type 264



This guard closely follows the design of the new American Telephone and Telegraph Company's standard. The bow-shaped wing brace holds the rail absolutely rigid against collapse when in place, leaving the open side entirely free for work. The chains allow this rail to be padlocked to pole, etc.

Open 23x32x42 inches high, folded 32x2x42 inches.

Weight, 49 pounds.

Each..... \$15.50

Type 110



This is somewhat lighter construction than the No. 264 while still holding to the same material.

It is equipped with Flag holder and steel hook for holding it rigid while open.

Open 32x32x42 inches high, closed 32x3x42 inches.

Weight, 40 pounds.

Each..... \$12.50

Cope Cable Benders

Designed to form and bend large cable in underground construction. Also may be used for straightening cable.

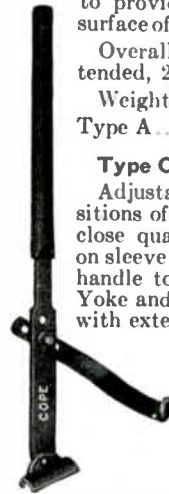
Type A. A light, convenient tool.

Made of forged tool steel with steel tube extension handle to provide greater leverage. Large surface of shoe prevents injury to cable.

Overall dimensions with handle extended, 26 to 36 inches.

Weight, 9 pounds.

Type A..... each \$10.00



Type A

Type C. Designed for heavy work.

Adjustable yoke provides seven positions of handle and permits work in close quarters. Simply pulling back on sleeve releases ratchet and permits handle to be moved in any position. Yoke and arm are alloy steel castings with extension handle of steel tubing.

Wide bearing surface and rounded edges of shoes prevent injury or deformation of cable sheath.

Overall dimensions, 36 inches.

Weight, 14 pounds.

Type C..... each \$15.00



Type C

Cope Cable Pulling Rigging



Type B

Designed to provide a direct pull through the conduit. When in the manhole, the lower sheave is located opposite the conduit with the upper sheave above the street line to lead to the winch.

Constructed of 6-inch 8.2 lb. channel, welded. The two sheaves with 10-inch minimum diameter have large, well finished grooves to prevent injury to the cable. Each sheave is mounted on a 1-inch steel shaft.

Length.....feet	9	10	12
Type B.....each	\$32.00	34.00	40.00

B & L Star Brand Pulling-In Frames



No. PU 26

The pulling-in frame is constructed to help install cable in underground ducts.

The sheave support consists of two 13-foot sections of 6-inch steel channels, fastened together at each end by two sections of 4-inch steel channels. Each 13-foot section is provided with 24 holes on 6-inch centers in order to allow the two sheaves to be adjusted to the proper position on the sheave support for any cable installation.

Two aluminum sheaves are used with each sheave support: one large sheave and one small sheave which have diameters of 20 and 5 3/4 inches respectively. The diameter and groove of large sheave are of sufficient size to allow a cable to be pulled over it without harming the cable sheath, when this procedure is necessary to obtain sufficient cable in the manhole for splicing. An important feature is that each sheave is provided with Graphite Bronze self-lubricating bushing which makes the use of lubricant unnecessary.

Shipping weight, 260 pounds.

No. PU'26, Complete..... \$120.00

Cope Pull-In-Guide or Cable Feeders



Used to lead the cable from the street reel into the mouth of the conduit without injury.

Constructed with heavy brass bell, completely finished, securely fixed to a length of heavy steel tubing. The conduit end has a steel sleeve which will accommodate various size brass nozzles to fit the several sizes of conduit.

Guides, Length.....feet	9	12	16	20
Each.....	\$45.00	48.00	52.00	56.00
Nozzles, For Conduit...inches	3	3½	4	
Each.....	\$7.50	8.50	10.00	

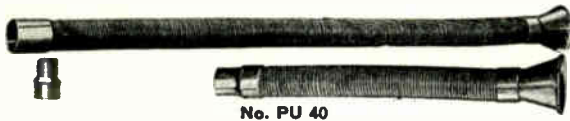
Cope Cable Drawing-In Protectors



A heavy brass bell carefully machined and finished. To be used in the mouth of the conduit to protect the lead sheath of the cable from injury while being drawn into the conduit.

Round						
Diameter.....inches	2	2½	3	3½	4	4½
Each.....	\$3.50	3.75	4.00	4.25	4.50	5.00
Square						
Size.....inches			3	4		
Each.....			\$4.50	5.00		

B & L Star Brand Cable Feeders



No. PU 40

Designed to protect and guide underground cables into ducts, particularly in congested manholes.

The standard cable feeder consists of: One 7-foot length of 4-inch galvanized metal hose and one 3-foot length of 4-inch galvanized metal hose which may be joined together, to make up an uninterrupted length.

Also two nozzles: One No. 2 for 3-inch ducts and one No. 3 for 3¼, 3½ and 3¾-inch ducts.

Lengths of hose furnished separate with any size nozzle required for proper size ducts.

When ordering always specify size ducts to be used.

Approximate shipping weight, 100 pounds.

Extra Nozzles No..	1	1A	2	3	4	5
For Ducts.....in.	2	2½	3	3¼, 3½, 3¾	4, 4½, 4¾	4½, 5

Prices upon application.

B & L Star Brand Cable Sheaves and Shackles



No. PU 27

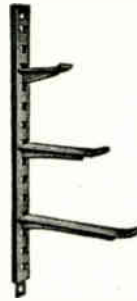
The cable sheave and shackle may be used in place of the pulling-in frame when it is possible or advisable to locate the rear of the truck directly over the manhole. The device is attached to the manhole pulling iron and the winch line goes over a roller or sheave at the rear of the truck then down and under the cable sheave and shackle and thus into the duct. The sheave is made of special aluminum alloy for light weight, 20 inches in diameter, with a groove large enough to take a 2½-inch cable. The hook is drop-forged.

Approximate weight, 51 pounds.

No. PU27.....	\$80.00
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Peirce Underground Cable Racks

Hot Galvanized



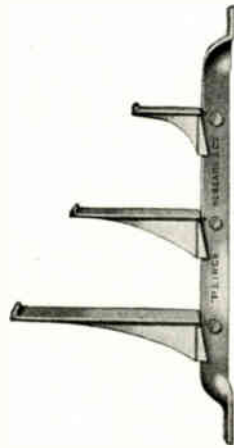
Rack section is made in three lengths which can be combined into almost any desired length. Section is made from 1½x3½x½-inch open hearth steel channel, amply strong to support the heaviest cable. Should be fastened to manhole wall with ½x4-inch Peirce Expansion Bolts.

Hook is cut from open hearth steel T section and has a smooth, well rounded top surface 1½ inches wide which will not injure the sheaths of cable. Steel size, 1½x1½x½ inches. Easily attached and with the weight of the cable on it, holds securely to the channel back.

Racks			
No.....	*2124	*†2125	*†2126
Per 100.....	\$44.60	79.50	93.70
No. of Holes.....	8	14	18
Hook Hole Spacing.....inches	1½	1½	1½
Overall Length.....inches	15	24	30
Bolt Hole Spacing.....inches	13½	22½	28½
Ship. Wt. per 100.....lb.	155	265	315
Hooks			
No.....	*†2131	*†2132	*†2133
Per 100.....	\$42.50	61.00	75.20
Extension from Face of Rack inches	4	7½	10
Ship. Wt. per 100.....pounds	61	110	135
†A.T. & T. Co. Std. *Western Union Std.			

Hubbard Underground Cable Racks

Hot Galvanized



Furnished to accommodate from one to four hooks. Combinations may be used for a greater number of hooks if desired.

Hook furnished in three lengths made from certified malleable iron, hot galvanized. Hook is placed in position by raising the outer end slightly above horizontal so that the supporting lug will engage the opening in the rack. It is then moved to alignment and allowed to drop into place where it is held against side movement by web braces which engage the back on both sides.

Locktype Racks				
No.....	2281	2282	2283	2284
Per 100.....	\$121.00	164.90	199.20	232.80
No. of Holes.....	1	2	3	4
Hook Hole Spacing.....inches	7	7	7	7
Length Overall.....inches	14¾	21¾	28¾	35¾
Bolt Hole Spacing.....inches	13	20	27	34
Ship. Wt. per 100.....pounds	280	385	535	645
Locktype Hooks				
No.....	2254	2258	2262	
Per 100.....	\$110.10	140.20	179.20	
Extension.....inches	4¼	8¼	12¼	
Width.....inches	2	2	2	
Ship. Wt. per 100.....pounds	183	260	341	

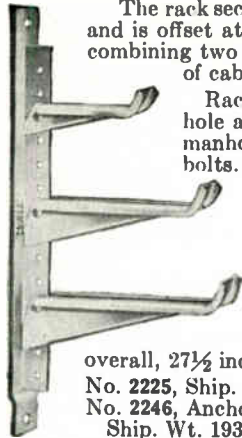
Cable Rack Insulators



For Peirce Racks			
No.....	2120	2122	2123
Per 100.....	\$23.80	23.80	57.20
Radius for Cable.....in.	1½	1½	2¼
Length Along Hook.....in.	3	3	3½
Width.....in.	2¾	3	3
Ship. Wt. per 100.....lb.	105	129	160
*For Locktype hooks.			

No. 2225 Peirce Heavy Cable Racks

Hot Galvanized



The rack section is 2 1/4 x 2 1/4 x 1/4-inch steel T section and is offset at the lower end for overlapping when combining two racks together. Any desired length of cable rack can be made in this manner.

Rack is provided with 1/16-inch mounting hole at top and bottom and is fastened to manhole walls with 1/2 x 4-inch expansion bolts. Anchor bolt No. 2246 is also used for this purpose. It consists of hook head which is cemented in masonry, opposite end being threaded and equipped with nut for attachment.

Number of holes, 14. Hook hole spacing, 1 1/2 inches; bolt hole spacing, 25 1/2 inches. Length overall, 27 1/2 inches.

No. 2225, Ship. Wt. 800 Pounds. per 100 \$176.80
 No. 2246, Anchor Bolt, 1/2 x 6 Inches, Ship. Wt. 193 Pounds. per 100 21.30

Peirce Underground Heavy Cable Rack Hooks

Hot Galvanized

Made of one-piece 3/16-inch steel pressed to channel shape. Edges are rounded, and there is a smooth surface for cable to rest upon. Width, 2 1/2 inches.

Used with or without an insulator.

No.	2231	2232	2233
Per 100	\$96.60	123.50	175.70
Extension inches	6	10 1/2	15
Shipping Weight per 100 pounds	180	308	489

Peirce White Glaze Insulators

Insulator fits snugly on cable hooks. Weight of cable holds it in place. Width, 3 3/4 inches.

No.	2117	2118	2121
Per 100	\$53.60	59.50	59.50
Radius for Cable inches	3/4	1 1/2	2 5/8
Length Along Hook inches	2 1/4	3	3 3/4
Shipping Weight per 100 pounds	90	115	125

Hubbard Cable Duct Shields

Zinc and Hot Galvanized Steel



No. 9142

This shield is used to protect cable sheaths at the entrance of ducts.

.050-Inch Sheet Zinc

No.	Diameter Inches	Length Inches	Shipping Weight per 100
9141	3	6	63
9122	3	8	68
9123	3	10	84
9125	3 1/4	6	53
9126	3 1/4	8	71
9127	3 1/4	10	78
9129	3 1/2	6	55
9130	3 1/2	8	75
9131	3 1/2	10	94
9133	4	6	62
9134	4	8	82
9144	4	10	103
9137	4 1/2	6	68
9138	4 1/2	8	91
9139	4 1/2	10	115

No. 20-Gage Sheet Steel

*9140	3	6	67
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No. 12-Gage Sheet Steel

9142	2 5/8	9	187
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*A. T. & T. Co. Std.

Hubbard Manhole Ladders

Hot Galvanized



Made to the specifications of the largest telephone and central station companies.

Rung spacing, 12 inches. Width inside, 12 inches. Rungs are 5/8 inch round.

No.	Per 100	Overall Feet	No. of Rungs	Ship. Wt. Lb.
†9110	\$753.80	6	5	25
†9111	840.90	6 1/2	6	27
†9112	1035.30	8	7	33
†9113	1211.50	10	9	42
†9114	1443.20	11	10	46
†9115	1552.00	12	11	50
†9116	1712.70	13	12	54
†9117	1810.20	14	13	59

†A.T. & T. Co. Std.

No. 9145 Hubbard Plain Dowel Pins

For Clay Conduit



Used in the ends of multiple duct clay conduit for preserving alignment of adjacent sections. Made of 5/16-inch diameter steel with a shoulder in the center. Overall length, 3 3/4 inches. Collar diameter, 5/8 inch.

No. 9145, Ship. Wt. 9 Pounds. per 100 \$2.70

Hubbard Pulling-In Irons

For Manholes

Hot Galvanized



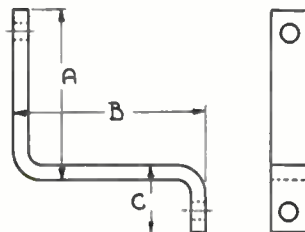
This iron is set into the concrete or brick walls of street vaults opposite duct entrances to provide a convenient and strong attachment for block and tackle when installing or removing cables.

No.	†9119	*†9120
Per 100	\$154.70	164.80
Diameter Steel in.	7/8	7/8
Extension from Wall in.	9	12
Ship. Wt. per 100 lb.	550	660

†A.T. & T. Co. Std. *Western Union Std.

Hubbard Cable Rack Extensions

Hot Galvanized















Used for mounting racks away from the wall because of obstructions, limited space or to escape water seepage. If used away from wall, racks can be mounted on approximately 4 1/2 inches less wall space than is needed for the rack. If extension is turned around and mounted, it will occupy 10 to 13 inches more wall space than the length of rack.

Mounting is generally accomplished by means of two No. 13, 1/2 x 4-inch Peirce Expansion Bolts. Furnished 1 and 1 1/4 inches wide in 1/2-inch stock. Mounting holes are for 1/2-inch bolts. Order two for each rack mounting.









No.	2101	2102
Per 100	\$31.60	59.70
Steel Size inches	1/2 x 1	1/2 x 1 1/4
Dimension A inches	4 1/4	5 3/4
Dimension B inches	3 3/8	6 1/16
Dimension C inches	2 1/4	2 5/8
Diameter Holes inches	3/8	3/8
Ship. Weight per 100 pounds	176	270

Electrical Wiring Symbols














General Outlets

Symbol	Description
	Outlet.
	Capped Outlet.
	Drop Cord.
	Electrical Outlet—for Use Only When Circle Used Alone Might Be Confused with Columns, plumbing symbols, Etc.
	Fan Outlet.
	Junction Box.
	Lamp Holder.
	Lamp Holder with Pull Switch.
	Pull Switch.
	Outlet for Vapor Discharge Lamp.
	Exit Light Outlet.
	Clock Outlet (Lighting Voltage).

Convenience Outlets




	Duplex Convenience Outlet.
	Convenience Outlet Other Than Duplex. 1=Single, 3=Triplex, Etc.
	Weatherproof Convenience Outlet.
	Range Outlet
	Switch and Convenience Outlet.
	Radio and Convenience Outlet.
	Special Purpose Outlet (Desc. in Spec.)
	Floor Outlet.

Switch Outlets

	Single Pole Switch.
	Double Pole Switch.
	Three Way Switch.
	Four Way Switch.
	Automatic Door Switch.
	Electrolier Switch.
	Key Operated Switch.
	Switch and Pilot Lamp.
	Circuit Breaker.
	Weatherproof Circuit Breaker.
	Momentary Contact Switch.
	Remote Control Switch.
	Weatherproof Switch.

Special Outlets

Any Standard Symbol As Given Above with the Addition of a Lower Case Subscript Letter May Be Used to Designate Some Special Variation of Standard Equipment of Particular Interest In a Specific Set of Architectural Plans.
















-  _{a,b,c- etc}
-  _{a,b,c- etc}
-  _{a,b,c- etc}

When Used They Must Be Listed In the Key of Symbols On Each Drawing and If Necessary Further Described In the Specifications.
























These symbols have been prepared by a technical sub-committee of ASA, Committee Z32, Standardization of Graphical Symbols and Abbreviations for use on Drawings, and have been submitted for approval as an American Standard to replace the symbols shown in ASA C10-1924.

The electrical symbols for architectural plans as finally approved by the ASA as an American Standard will be announced by that body in due course of time.

Panels, Circuits and Miscellaneous

Symbol	Description
	Lighting Panel.
	Power Panel.
	Branch Circuit—Ceiling or Wall.
	Branch Circuit—Floor.
	Note: Any Circuit without Further Designation Indicates a Two-Wire Circuit. For a Greater Number of Wires Indicate As Follows:  (3 Wires),  (4 Wires), Etc.
	Feeders. Note: Use Heavy Lines and Designate By Number Corresponding to Listing In Feeder Schedule.
	Underfloor Duct & Junction Box—Triple System. Note: For Double or Single Systems Eliminate One or Two Lines. This Symbol is Equally Adaptable to Auxiliary System Layouts.
	Generator.
	Motor.
	Instrument.
	Transformer.
	Controller.
	Isolating Switch.

Auxiliary Systems

	Push Button.
	Buzzer.
	Bell.
	Annunciator.
	Telephone.
	Telephone Switchboard.
	Clock (Low Voltage).
	Electric Door Opener.
	Fire Alarm Bell.
	Fire Alarm Station.
	City Fire Alarm Station.
	Fire Alarm Central Station.
	Automatic Fire Alarm Device.
	Watchman's Station.
	Watchman's Central Station.
	Horn.
	Nurse's Signal Plug.
	Maid's Signal Plug.
	Radio Outlet.
	Signal Central Station.
	Interconnection Box.
	Battery.
	Auxiliary System Circuits.

Note: Any Line without Further Designation Indicates a 2-Wire Circuit. For a Greater Number of Wires Designate with Numerals In Manner Similar to --- 12-No. 18W-3/4"-C., or Designated by Number Corresponding to Listing In Schedule.

Special Auxiliary Outlets. Sub-Script Letters Refer to Notes on Plans or Detailed Description In Specifications.

 _{a,b,c}

Wiring Tables

Wire sizes given are A.W.G. or C.M.

2% Loss on 110 Volts

Cap. Amp.	LENGTH OF CIRCUIT, FEET (ONE WAY)																	
	20	30	40	50	60	70	80	90	100	120	140	160	180	200	240	280	320	360
1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	14	14	14	14
1.5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	14	14	14	14
2	..	..	..	..	..	..	..	..	..	14	14	14	14	14	12	12	12	10
3	..	..	..	..	..	..	..	14	14	14	14	12	12	12	10	10	10	8
4	..	..	..	..	14	14	14	14	14	12	12	12	10	10	10	8	8	8
5	..	..	..	14	14	14	14	14	12	12	10	10	10	10	8	8	8	6
6	..	..	14	14	14	14	14	12	12	10	10	10	8	8	8	8	6	6
7	..	14	14	14	14	12	12	12	10	10	10	8	8	8	6	6	6	6
8	..	14	14	14	12	12	12	10	10	10	8	8	8	8	6	6	6	5
9	..	14	14	12	12	12	10	10	10	8	8	8	8	6	6	6	5	5
10	14	14	14	12	12	10	10	10	10	8	8	8	6	6	6	5	5	4
12	14	14	12	12	10	10	10	8	8	8	8	6	6	6	5	5	4	4
14	14	14	12	12	10	10	10	8	8	8	8	6	6	6	5	5	4	4
16	11	12	12	10	10	8	8	8	8	6	6	6	5	5	4	3	3	2
18	12	12	10	10	8	8	8	8	6	6	6	5	5	4	4	3	2	2
20	12	12	10	10	8	8	8	6	6	6	5	5	4	4	3	2	2	1
25	10	10	10	8	8	6	6	6	6	5	4	4	3	3	2	1	1	0
30	8	8	8	8	6	6	6	6	5	4	4	3	3	2	1	1	0	0
35	8	8	8	6	6	6	5	5	4	4	3	2	2	1	1	0	00	00
40	6	6	6	6	6	5	5	4	4	3	2	2	1	1	0	00	00	000
45	6	6	6	6	6	5	4	4	3	3	2	1	1	0	00	000	000	000
50	6	6	6	6	6	5	4	4	3	3	2	1	1	0	00	000	000	0000
60	4	4	4	4	4	4	3	3	2	1	1	0	0	00	000	000	0000	0000
70	4	4	4	4	4	3	2	2	1	1	0	00	00	000	000	0000	0000	.....
80	3	3	3	3	3	2	2	1	1	0	00	00	000	000	0000	0000	.....	.....
90	2	2	2	2	2	2	1	1	0	00	00	000	000	0000	0000	.....	.....	.....
100	1	1	1	1	1	1	1	0	0	00	000	000	0000	0000	.....	.....	.....	.....
120	0	0	0	0	0	0	0	0	00	00	000	0000	0000	.....	.....	.....	.....	.....

2% Loss on 220 Volts

Cap. Amp.	LENGTH OF CIRCUIT, FEET (ONE WAY)																	
	20	30	40	50	60	70	80	90	100	120	140	160	180	200	240	280	320	360
1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	14	14
1.5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	14	14
2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	14	14	14	14
3	..	..	..	..	..	..	..	..	..	..	..	..	14	14	14	14	12	12
4	..	..	..	..	..	..	..	..	..	14	14	14	14	14	12	12	12	10
5	..	..	..	..	..	..	..	..	..	14	14	14	14	12	12	10	10	10
6	..	..	..	..	..	..	..	14	14	14	14	14	12	12	10	10	10	8
7	..	..	..	..	..	14	14	14	14	14	14	12	12	12	10	10	8	8
8	..	..	..	..	14	14	14	14	14	12	12	12	10	10	10	8	8	8
9	..	..	..	..	14	14	14	14	14	12	12	12	10	10	10	8	8	8
10	..	..	..	14	14	14	14	14	12	12	12	10	10	10	8	8	8	6
12	..	..	14	14	14	14	12	12	12	10	10	10	8	8	8	8	6	6
14	..	14	14	14	14	12	12	12	10	10	10	8	8	8	6	6	6	6
16	..	12	12	12	12	12	12	10	10	10	8	8	8	8	6	6	6	6
18	..	12	12	12	12	12	10	10	10	8	8	8	8	6	6	6	5	5
20	12	12	12	12	12	10	10	10	10	8	8	8	6	6	6	5	5	4
25	10	10	10	10	10	10	10	8	8	8	6	6	6	6	5	4	4	3
30	8	8	8	8	8	8	8	8	8	6	6	6	6	5	4	4	3	3
35	8	8	8	8	8	8	8	8	6	6	6	5	5	4	4	3	2	2
40	6	6	6	6	6	6	6	6	6	6	5	5	4	4	3	2	2	1
45	6	6	6	6	6	6	6	6	6	6	5	4	4	3	3	2	1	1
50	6	6	6	6	6	6	6	6	6	5	4	4	3	3	2	1	1	0
60	4	4	4	4	4	4	4	4	4	4	4	3	3	2	1	1	0	0
70	4	4	4	4	4	4	4	4	4	4	3	2	2	1	1	0	00	00
80	3	3	3	3	3	3	3	3	3	3	2	2	1	1	0	00	00	000
90	2	2	2	2	2	2	2	2	2	2	2	2	1	0	00	00	000	000
100	1	1	1	1	1	1	1	1	1	1	1	1	1	0	00	000	000	0000
120	0	0	0	0	0	0	0	0	0	0	0	0	0	00	000	000	0000	0000

Number of Conductors in Conduit or Tubing

1 to 9 Conductors—Synthetic

Types SN and RU—600 Volts

N.E.C. Table 7

For rewiring in existing raceways as provided in N.E.C.

Size Conductor A.W.G.	MINIMUM SIZE OF CONDUIT, INCHES								
	No. of Conductors								
	1	2	3	4	5	6	7	8	9
14	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
12	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	3/4
10	1/2	1/2	1/2	1/2	1/2	1/2	3/4	3/4	3/4
8	1/2	1/2	1/2	3/4	3/4	3/4	1	1	1
6	1/2	3/4	3/4	1	1	1 1/4	1 1/4	1 1/4	1 1/4
5	1/2	3/4	3/4	1	1 1/4	1 1/4	1 1/4	1 1/4	1 1/2
4	1/2	3/4	1	1	1 1/4	1 1/4	1 1/4	1 1/2	1 1/2
3	1/2	1	1	1 1/4	1 1/4	1 1/2	1 1/2	1 1/2	2
2	1/2	1	1	1 1/4	1 1/4	1 1/2	1 1/2	2	2
1	3/4	1 1/4	1 1/4	1 1/2	2	2	2	2	2 1/2
0	3/4	1 1/4	1 1/4	1 1/2	2	2	2	2 1/2	2 1/2
00	3/4	1 1/4	1 1/2	2	2	2	2 1/2	2 1/2	2 1/2
000	3/4	1 1/2	1 1/2	2	2	2 1/2	2 1/2	3	3
0000	1	1 1/2	2	2	2 1/2	2 1/2	3	3	3

Type SN conductors recognized in sizes No. 14 to No. 0000; Type RU recognized in sizes No. 14 to No. 10.

3-Conductor Convertible System—Rubber-Covered

Types R, RW, RP and RH—600 Volts

N.E.C. Table 10

SIZE CONDUCTOR	C.M.	Size Conduit or Tubing Inches
2-14 and 1-	10	3/4
2-12 and 1-	8	3/4
2-10 and 1-	6	1
2-8 and 1-	4	1
2-6 and 1-	2	1 1/4
2-5 and 1-	1	1 1/4
2-4 and 1-	0	1 1/2
2-3 and 1-	00	1 1/2
2-2 and 1-	000	1 1/2
2-1 and 1-	0000	2
2-0 and 1-	250,000	2
2-00 and 1-	350,000	2 1/2
2-000 and 1-	400,000	2 1/2
2-0000 and 1-	550,000	3
2-250,000 and 1-	600,000	3
2-300,000 and 1-	800,000	3
2-400,000 and 1-	1,000,000	3 1/2
2-500,000 and 1-	1,250,000	4
2-600,000 and 1-	1,500,000	4
2-700,000 and 1-	1,750,000	4 1/2
2-800,000 and 1-	2,000,000	4 1/2

Combination of Conductors

N.E.C. Table 11

For groups or combinations of conductors not included in the preceding tables, it is recommended that the conduit or tubing be of such size that the sum of the cross-sectional areas of the individual conductors will not be more than the percentage of the interior cross-sectional area of the conduit or tubing than as shown in the following table:

Per Cent Area of Conduit or Tubing

Description	No. of Conductors			
	1	2	3	4 Over 4
Conductors (Not Lead-Covered)	53	31	43	40
Lead-Covered Conductors	55	30	40	38
For Rewiring Existing Raceways with Thinner Insulated Conductors	60	40	50	50

Full-Load Currents of Motors

Currents are for motors running at speeds usual for belted motors and motors with normal torque characteristics. Motors built for low speeds or high torques may require more running current, therefore use nameplate current.

D.C. Motors

N.E.C. Table 21

Hp.	AMPERES			Hp.	AMPERES			Hp.	AMPERES		
	115V.	230V.	550V.		115V.	230V.	550V.		115V.	230V.	550V.
1/2	4.5	2.3	...	7 1/2	58	28.7	12	50	364	180	75
3/4	6.5	3.3	1.4	10	75	38.0	16	60	436	215	90
1	8.4	4.2	1.7	15	112	56.0	23	75	540	268	111
1 1/2	12.5	6.3	2.6	20	140	74.0	30	100	...	357	146
2	16.1	8.3	3.4	25	185	92.0	38	125	...	443	184
3	23.0	12.3	5.0	30	220	110.0	45	150	...	...	220
5	40.0	19.8	8.2	40	294	146.0	61	200	...	...	295

Single-Phase, A.C. Motors

N.E.C. Table 22

Hp.	AMPERES		Hp.	AMPERES		Hp.	AMPERES	
	110 V.	220 V.		110 V.	220 V.		110V.	220V.	440V.
1/6	3.34	1.67	1	11.0	5.5	5	46	23
1/4	4.8	2.4	1 1/2	15.2	7.6	7 1/2	68	34
1/2	7.0	3.5	2	20.0	10.0	10	86	43
3/4	9.4	4.7	3	28.0	14.0	...	...	...

2-Phase, A.C. Motors—4-Wire

N.E.C. Table 23

Hp.	Induction Type				Synchronous Type			
	Squirrel-Cage and Wound Rotor		Unity Power Factor		Squirrel-Cage and Wound Rotor		Unity Power Factor	
	110V.	220V.	440V.	550V. 2200V.	220V.	440V.	550V.	2200V.
1/2	4.3	2.2	1.1	9	...	...	...	...
3/4	4.7	2.4	1.2	1.0	...	...	...	...
1	5.7	2.9	1.4	1.2	...	...	...	...
1 1/2	7.7	4.0	2.0	1.6	...	...	...	...
2	10.4	5.0	3.0	2.0	...	...	...	...
3	...	8.0	4.0	3.0	...	...	...	...
5	...	13.0	7.0	6.0	...	...	...	...
7 1/2	...	19.0	9.0	7.0	...	...	...	...
10	...	24.0	12.0	10.0	...	...	...	...
15	...	33.0	16.0	13.0	...	...	...	...
20	...	45.0	23.0	19.0	...	...	...	...
25	...	55.0	28.0	22.0	6	47	24	19
30	...	67.0	34.0	27.0	7	56	29	23
40	...	88.0	44.0	35.0	9	75	37	31
50	...	108.0	54.0	43.0	11	94	47	38
60	...	129.0	65.0	52.0	13	111	56	44
75	...	156.0	78.0	62.0	16	140	70	57
100	...	212.0	106.0	85.0	22	182	93	74
125	...	268.0	134.0	108.0	27	228	114	93
150	...	311.0	155.0	124.0	31	...	137	110
200	...	415.0	208.0	166.0	43	...	182	145

3-Phase, A.C. Motors

N.E.C. Table 24

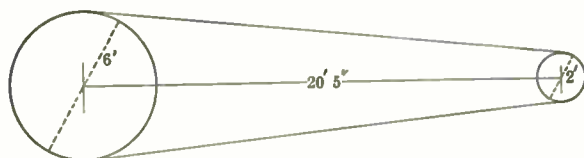
Hp.	AMPERES			Hp.	AMPERES			Hp.	AMPERES		
	110V.	220V.	440V.		110V.	220V.	440V.		110V.	220V.	440V.
1/2	5.0	2.5	1.3	1.0	...	...	...	...	...	...
3/4	5.4	2.8	1.4	1.1	...	...	...	...	...	...
1	6.6	3.3	1.7	1.3	...	...	...	...	...	...
1 1/2	9.4	4.7	2.4	2.0	...	...	...	...	...	...
2	12.0	6.0	3.0	2.4	...	...	...	...	...	...
3	...	9.0	4.5	4.0	...	...	...	...	...	...
5	...	15.0	7.5	6.0	...	...	...	...	...	...
7 1/2	...	22.0	11.0	9.0	...	...	...	...	...	...
10	...	27.0	14.0	11.0	...	...	...	...	...	...
15	...	38.0	19.0	15.0	...	...	...	...	...	...
20	...	52.0	26.0	21.0	...	...	...	...	...	...
25	...	64.0	32.0	26.0	7	54	27	22	5.4		
30	...	77.0	39.0	31.0	8	65	33	26	6.5		
40	...	101.0	51.0	40.0	10	86	43	35	8.6		
50	...	125.0	63.0	50.0	13	108	54	44	10.8		
60	...	149.0	75.0	60.0	15	128	64	51	13.0		
75	...	180.0	90.0	72.0	19	161	81	65	16.0		
100	...	246.0	123.0	98.0	25	211	106	85	21.0		
125	...	310.0	155.0	124.0	32	264	132	106	26.0		
150	...	360.0	180.0	144.0	36	...	158	127	32.0		
200	...	480.0	240.0	195.0	49	...	210	168	42.0		

*For 90 and 80 per cent power factor the above figures should be multiplied by 1.1 and 1.25 respectively.

For full-load currents of 208 and 200-volt motors, increase the corresponding 220-volt motor full-load current by 6 and 10 per cent, respectively.

Rules for Measuring Belts

Rule 1—For Finding Length of Straight Belts



A.—Multiply one half the sum of the diameters of the pulleys by $3\frac{1}{4}$.

B.—Add to above twice the distance between centers.

C.—If one pulley is much larger than the other, it is necessary to add to the above a sum varying from one to ten or twelve inches, or more, and obtained by the following method: Square the difference in the diameters in pulleys in inches and divide by four times the distance between centers in inches.

EXAMPLE

Large pulley, 58".

Small pulley, 12".

Distance between centers, 10' = 120".

To find A— $58" + 12" = 70"$; $70" \times \frac{1}{2} = 35"$; $35" \times 3\frac{1}{4} = 110"$.

To find B— $10' = 120"$; $2 \times 120" = 240"$.

To find C— $58" - 12" = 46"$.

$46"$ squared = 2116".

4 times distance between centers is $4 \times 120" = 480"$.

$2116"$ divided by $480 = 5"$ approximately.

Total length A + B + C = $110" + 240" + 5" = 297"$, answer.

Rule 2—For Finding Length of Cross Belts

A.—Multiply one half the sum of the diameters of the pulleys by $3\frac{1}{4}$.

B.—Square one-half the sum of the diameters of the pulleys. Square the distance between centers. Add these two squares and take the square root. Multiply this by 2 and add to the result found in paragraph A.

EXAMPLE

Large pulley, 58".

Small pulley, 12".

Distance between centers, 10' = 120".

To find A—Same as Rule 1 = 110".

To find B—Half the sum of the diameters of the pulleys = 35".

Square $35" = 1225"$.

Square distance between centers ($120"$) = 14400".

Add 1225" and 14400" = 15625".

The square root of 15625" = 125".

Twice 125" = 250".

A + B = $110" + 250" = 360" = 30'$, answer.

Rule for Measuring Belts in the Roll

Add to the diameter of the roll in inches the diameter of the hole in the center of the roll. Multiply this sum by the number of coils in the roll, and multiply this product by 1.32. The three figures on the left represent number of feet in roll.

EXAMPLE

Roll of 5-inch single leather belt measures $37\frac{5}{8}$ inches in diameter; hole, $4\frac{1}{8}$ inches in diameter; number of coils in roll, 84:

$37\frac{5}{8} + 4\frac{1}{8} = 42\frac{1}{4} \times 84 = 3,549 \times 1.32 = 468,468$; or (taking the first three figures on the left) equals $468\frac{1}{2}$ feet.

Length of roll by actual measurement, 469 feet.

Rules for Piecing out Belts

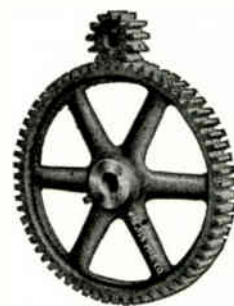
In order to calculate the changed length of belt when different size pulley is put on in place of one removed, take out of the belt, or put in one and a half times the difference of the diameter of the pulleys.

EXAMPLE

Take off a 20-inch pulley and put on a 24-inch = 4-inch \times $1\frac{1}{2}$ inch = 6-inch of a new belt to the existing one.

Useful Information

Pulleys and Gears



For single reduction or increase of speed by means of belting where the speed at which each shaft should run is known, and one pulley is in place:

Multiply the diameter of the pulley which you have by the number of revolutions per minute that its shaft makes; divide this product by the speed in revolutions per minute at which the second shaft should run. The result is the diameter of pulley to use.

Where both shafts with pulleys are in operation and the speed of one is known:

Multiply the speed of the shaft by diameter of its pulley and divide this product by diameter of pulley on the other shaft. The result is the speed of the second shaft.

Where a countershaft is used, to obtain size of main driving or driven pulley, or speed of main driving or driven shaft, it is necessary to calculate, as above, between the known end of the transmission and the countershaft, then repeat this calculation between the countershaft and the unknown end.

A set of gears of the same pitch transmits speeds in proportion to the number of teeth they contain. Count the number of teeth in the gear wheel and use this quantity instead of the diameter of pulley, mentioned above, to obtain number of teeth cut in unknown gear, or speed of second shaft.

Rule for Finding Size of Pulleys

$$d = \frac{D \times S}{S'} \qquad D = \frac{d \times S'}{S}$$

d = diameter of driven pulley.

D = diameter of driving pulley.

S = number of revolutions per minute of driving pulley.

S' = number of revolutions per minute of driven pulley.

Shafting, Belting, Pulleys and Gears

Shafting

The rule for determining the size of shaft for transmitting a given power at a given speed (8-foot centers for hangers) is as follows:

$$\sqrt[3]{\frac{H. P. \times 80}{R. P. M.}} = \text{diameter in inches.}$$

When "H. P." = the horse power to be transmitted
"R. P. M." = the revolutions per minute.

Belts

The following formula is used to determine the length of belting:

$$\frac{(D + d \times 3.16)}{2} \times 2D^1 = \text{length.}$$

When D = diameter of large pulley, d = diameter of small pulley, and D¹ = distance between centers of shafting.

Depth of Pole Setting

In sandy or swamp ground, oil barrels or casks set in the ground will materially assist in securing substantial pole foundations. The following specifications are recommended for the depth in feet of holes:

Line (Height)	Solid Ground		Soft Ground		Solid Rock
	Poles (Depth)	Corners	Line	Corners	
22	5	5	5	5	3
25	5	5½	5½	6	3
30	5	5½	6	6½	3½
35	6	6½	6½	7	4
40	6½	7	7	7½	4
45	6½	7	7	7½	4½
50	7	7½	7½	8	4½
55	7½	8	8	8½	5
60	8	8½	8½	9	5½
65	8½	9	9	9½	5½

Guy stubs should be set not less than 7 feet in any soil except solid rock.

Cedar Poles for Electric Light Work

Height Feet	Size Top Inches	Average Wt., Lbs. Each	No. of Poles to a Car	Height Feet	Size Top Inches	Average Wt., Lbs. Each	No. of Poles to a Car
25	5½	225	130	40	6	800	80
25	6	250	100	40	7	900	75
28	7	400	80	45	6	900	70
30	5	300	110	45	7	1000	65
30	6	350	90	50	6	1200	55
30	7	420	75	55	6	1400	45
35	6	550	100	..	..	..	..

Wind Pressures

Velocity	37	53	65	75	83	91	105	119	130
Pounds per Sq. Ft.	5	10	15	20	25	30	40	50	60

The pressures given above are such as would be exerted against a flat surface set perpendicularly to the direction of the wind. For a cylindrical surface like a pole or wire, the effective pressure is two-thirds of what it would be for a square surface of the same area as the cylinder. It is considered that an allowance of from 20 to 30 pounds per square foot of area for pole lines is ample. The above table was calculated from Professor Langley's formula, $P = .0036V^2$, in which P is the pressure per square foot of surface in pounds, and V is the velocity of the wind.

General Construction Rules

SIZE OF HOLES.—The holes should be large enough to permit the free entrance of the poles, and should be full size at the bottom so as to admit of the use of tampers.

TAMPING POLE HOLES.—All pole holes, except those in very hard gravel or rock formations, should be tamped so thoroughly that the necessity for hauling away excess dirt is obviated.

PROTECTING POLES.—Where corner poles or other poles are exposed to injury from whittling, pole butt should be well painted and heavily sanded. If this is not sufficient in any special case, the pole butt should be wound with No. 10 galvanized wire, spaced ½ inch apart, painted and sanded.

PAINTING POLES.—The top and gaens of all poles should be painted with one or more coats of approved paint. All poles which are protected by strain plates or shims from the cutting of messengers or guys, should be painted with one or more coats of approved paint on the space occupied by the strain plate.

FACING ARMS (CITY CONSTRUCTION).—At long spans the cross arms should be placed on the side of the poles away from the long spans. Arms on poles should face the originating source of the lead, or face to face, depending on the general condition, except corner pole; then it should face the corner. At the terminals of a lead, the last two poles should face away from the originating source. On corners, arms should face the point of intersection of curb lines, thus facing each other. First arm each side of the corner should ordinarily face the corner.

ON CURVES.—Arms each side of center of curve should face the center of curve.

LOCATION OF POLES AND ANCHORAGES.—Special attention should be given to location of poles, where the ground washes badly, where there are cuts or excavations and along the banks of creeks or streams. Do not locate poles along the edges of cuts or embankments.

General Construction Rules

Continued

SPACING POLES.—In locating pole line, if it becomes necessary to either reduce or lengthen distance between poles on account of obstacles, objections of property holders, etc., the preference should be for the shorter spans.

LOCATION OF POLES AT STREET CROSSINGS.—In leading away from the originating end of the line when a cross street is reached, pole should not be located on the corners, but should be spaced to fall on the property line. In this connection, alleys may be regarded as street crossings.

ON STREETS.—Poles and stubs on streets should be set inside of and as near the curb line as possible.

IN ALLEYS.—Poles in alleys should be set as close as possible to the side lines of the alleys.

ON PROPERTY LINES.—Poles on streets should be located on or near property lines.

DISTRIBUTION OF POLES.—In distributing the poles, care should be taken to select the heaviest poles for corners and terminals and to place the straightest and best-looking poles on streets and in front of residences.

POLE FITTING AND SETTING—TRIMMING.—All poles that are rough in appearance should be smoothed, and knots should be trimmed close. Top of pole should be leveled with one cut of saw at right angles to length of pole, and edge should be beveled ¾ of an inch with a draw-knife.

FRAMING POLES.—Poles should be raised at the top and placed in a framing buck so that the heaviest sag or curve will be nearest the ground. If the pole be crooked or badly shaped it should be turned with cant hooks until the best side for framing is brought uppermost and the pole securely chocked. In this position it should first be roofed. Seven inches should be measured from the top of the pole, and this point should be the center of the top gaen. The succeeding gaens should be spaced 18 inches on centers. Gaens should be leveled with a straight edge or sighting sticks.

NOTE.—In alleys, poles stepped in line with alley as high as 12 to 15 feet; then turn at right angles to alley and continue to the top. This is to prevent liability of danger to top wagons in narrow alleys.

BUTTING POLES.—Every pole should be squared across the bottom before setting. This should be done with a crosscut saw, and not with an ax.

BRACES AND CROSS-ARM FITTING.—Arms should be sighted and leveled at right angles to pole length, and not parallel with the ground. This includes all corner poles.

A spirit level should not be used for leveling arms.

CANTING ARMS ON CORNERS.—When a lead makes a double corner or changes from one side of the street to the other, the last arm should set at right angles to the line of direction leading to the corner, and the first arm leading away should set at right angles to the line of direction leading away from the corner.

If the change of direction forms an angle of less than forty-five degrees, one or both corner arms may be canted slightly to secure the greatest space between lines. This should not be permissible where the angle is forty-five degrees or over.

CANTING ARMS ON SINGLE-POLE CORNERS.—The arm should set in a line that will divide in half the angle formed by the two lines of direction of the route.

On curves the inside of the arms should point to the common center of a circle of which the lead curve forms the circumference.

Single pole corners are not desirable and should not be used when the pull is over 20 feet, unless it is an unavoidable case.

GUY STUBS.—A guy stub in no case should be smaller in diameter at butt or top than the pole it supports, and should be as straight as possible on account of the tendency to buckle. A stub at the head of heavy lines should be as massive as possible.

A guy stub should be raked to position before filling hole, and should not be set straight and raked with the anchor guys. In the proportion that stub is curved or buckled its strength is decreased. No stub should be raked less than 24 inches.

Guy stubs holding a strain greater than a one-arm lead should measure 12 inches across the top or more, if procurable.

American or B. & S. Gauge

The resistance given in the table is that of pure copper wire; ordinary commercial copper has a resistance from 3% to 5% greater.

Gauge No.	Diam. in Mils	Area in Circular Mils	Weight in Lbs. per 1000 Feet	Feet per Pound	RESISTANCE OF PURE COPPER IN INTERNATIONAL OHMS AT 20°C. OR 68°F.		
					Ohms per Ft.	Feet per Ohm	Ohms per Lt.
0000	460.0	211600.	640.5	1.56	.0000489	20440.	.00007631
000	409.6	167800.	508.0	1.97	.0000617	16210.	.0001215
00	364.8	133100.	402.8	2.49	.0000778	12850.	.0001931
0	324.9	105600.	319.5	3.13	.0000981	10190.	.0003071
1	289.3	83690.	253.3	3.95	.0001237	8083.	.0004883
2	257.6	66370.	200.9	4.98	.0001560	6410.	.0007763
3	229.4	52630.	159.3	6.28	.0001967	5084.	.001235
4	204.3	41740.	126.4	7.91	.0002480	4031.	.001963
5	181.0	33100.	100.2	9.98	.0003128	3197.	.003122
6	162.0	26250.	79.46	12.58	.0003944	2535.	.004963
7	144.3	20820.	63.02	15.87	.0004973	2011.	.007892
8	128.5	16510.	49.98	20.01	.0006271	1595.	.01255
9	114.4	13090.	39.63	25.23	.0007808	1265.	.01965
10	101.9	10380.	31.43	31.85	.0009872	1003.	.03173
11	90.74	8234.	24.93	40.12	.001257	795.5	.05045
12	80.81	6530.	19.77	50.58	.001586	630.5	.08022
13	71.96	5178.	15.68	63.78	.001999	500.1	.1276
14	64.08	4107.	12.43	80.45	.002521	396.6	.2028
15	57.07	3257.	9.86	101.4	.003179	314.5	.3225
16	50.82	2583.	7.82	127.9	.004009	249.4	.5128
17	45.26	2048.	6.20	161.3	.005055	197.8	.8153
18	40.30	1624.	4.92	203.4	.006374	156.9	1.296
19	35.89	1288.	3.90	256.5	.008038	124.4	2.061
20	31.96	1022.	3.09	323.4	.01014	98.62	3.278
21	28.46	810.1	2.45	407.8	.01278	78.24	5.212
22	25.35	642.6	1.95	514.2	.01612	62.05	8.287
23	22.57	509.5	1.54	648.4	.02032	49.21	13.18
24	20.10	404.0	1.22	817.6	.02563	39.02	20.95
25	17.90	320.4	.97	1031.	.03231	30.95	33.32
26	15.94	254.1	.77	1300.	.04075	24.54	52.97
27	14.20	201.5	.61	1639.	.05138	19.46	84.23
28	12.64	159.8	.48	2067.	.06479	15.43	133.9
29	11.26	126.7	.38	2607.	.08170	12.24	213.0
30	10.03	100.5	.30	3287.	.1030	9.707	338.6
31	8.928	79.71	.24	4145.	.1299	7.698	538.4
32	7.950	63.20	.19	5227.	.1638	6.105	856.2
33	7.080	50.13	.15	6591.	.2066	4.841	1361.
34	6.305	39.75	.12	8311.	.2605	3.830	2165.
35	5.615	31.52	.10	10480.	.3284	3.045	3441.
36	5.000	25.00	.08	13210.	.4142	2.414	5473.
37	4.453	19.83	.06	16660.	.5222	1.915	8702.
38	3.965	15.72	.05	21010.	.6585	1.519	13870.
39	3.531	12.47	.04	26500.	.8304	1.204	22000.
40	3.145	9.89	.03	33410.	1.047	.955	34980.

Tables Showing the Differences Between Wire Gauges

No.	Brown & Sharpe	Old English or London	Stubs' or Birmingham	New British Standard	No.	Brown & Sharpe	Old English or London	Stubs' or Birmingham	New British Standard
0000	.460	.454	.454	.400	19	.03589	.040	.042	.040
000	.40964	.425	.425	.372	20	.03196	.035	.035	.036
00	.36480	.380	.380	.348	21	.02846	.0315	.032	.032
0	.32495	.340	.340	.324	22	.025347	.0295	.028	.028
1	.28930	.300	.300	.300	23	.022571	.027	.025	.024
2	.25763	.284	.284	.276	24	.0201	.025	.022	.022
3	.22942	.259	.259	.252	25	.0179	.023	.020	.020
4	.20431	.238	.238	.232	26	.01594	.0205	.018	.018
5	.18194	.220	.220	.212	27	.014195	.01875	.016	.016
6	.16202	.203	.203	.192	28	.012641	.0165	.014	.014
7	.14428	.180	.180	.176	29	.011257	.0155	.013	.013
8	.12849	.165	.165	.160	30	.010025	.01375	.012	.012
9	.11443	.148	.148	.144	31	.008928	.01225	.010	.011
10	.10189	.134	.134	.128	32	.00795	.01125	.009	.010
11	.09074	.120	.120	.116	33	.00708	.01025	.008	.010
12	.08081	.109	.109	.104	34	.0063	.0095	.007	.009
13	.07196	.095	.095	.092	35	.00561	.009	.005	.008
14	.06408	.083	.083	.080	36	.005	.0075	.004	.007
15	.05706	.072	.072	.072	37	.00445	.0065	.....	.....
16	.05082	.065	.065	.064	38	.003965	.00575	.....	.....
17	.04525	.058	.058	.056	39	.003531	.005	.....	.....
18	.04030	.049	.049	.048	40	.003144	.0045	.....	.....

Properties of Galvanized Telephone and Telegraph Wires

Based on Standard Specifications

Size B. W. G.	Diameter in Mils = d	Area in Circular Mils = d²	APPROXIMATE WEIGHT IN POUNDS		APPROXIMATE BREAKING STRAIN IN POUNDS			RESISTANCE PER MILE (INTERNATIONAL OHMS) AT 68° F. OR 20° C.		
			Per 1000 Feet	Per Mile	Ex. B. B.	B. B.	Steel	Ex. B. B.	B. B.	Steel
0	340	115,600	313	1,655	4,138	4,634	4,965	2.84	3.38	3.99
1	300	90,000	244	1,289	3,223	3,609	3,867	3.65	4.34	5.0
2	284	80,656	218	1,155	2,888	3,234	3,465	4.07	4.85	5.6
3	259	67,081	182	960	2,400	2,688	2,880	4.90	5.83	6.7
4	238	56,644	153	811	2,028	2,271	2,433	5.80	6.91	8.0
5	220	48,400	131	693	1,732	1,940	2,079	6.78	8.08	9.3
6	203	41,209	112	590	1,475	1,652	1,770	7.97	9.49	11.0
7	180	32,400	87	463	1,158	1,296	1,389	10.15	12.10	14.0
8	165	27,225	74	390	975	1,092	1,170	12.05	14.36	16.7
9	148	21,904	60	314	785	879	942	14.97	17.84	20.7
10	134	17,956	49	258	645	722	774	18.22	21.71	25.2
11	120	14,400	39	206	515	577	618	22.82	27.19	31.5
12	109	11,881	32	170	425	476	510	27.65	32.94	38.2
13	95	9,025	25	129	310	347	372	37.90	45.16	52.4
14	83	6,889	19	99	247	277	297	47.48	56.56	65.6
15	72	5,184	14	74	185	207	222	63.52	75.68	87.8
16	65	4,225	11	61	152	171	183	77.05	91.80	108.5

Equivalent Values in Different Units

1 H.P. =	{	746 watts .746 K.W. 33,000 ft.-lbs. per minute 550 ft.-lbs. per second 2,545 heat-units per hour 42.4 heat units per minute .707 heat-units per second .175 lb. carbon oxidized per hour 2.64 lbs. water evaporated per hour from and at 212° F.
1 H.P. Hour =	{	746 K.W. hours 1,980,000 ft.-lbs. 2,545 heat-units 273,740 k.g.m. .175 lb. carbon oxidized with perfect efficiency 2.64 lbs. water evaporated from and at 212° F. 17.0 lbs. water raised from 62° to 212° F.
1 Kilo-watt =	{	1,000 watts 1.34 H.P. 2,654,200 ft.-lbs. per hour 44,240 ft.-lbs. per minute 737.3 ft.-lbs. per second 3,412 heat-units per hour 56.9 heat-units per minute .948 heat-units per second .2275 lb. carbon oxidized per hour 3.53 lbs. water evaporated per hour from and at 212° F.
1 Watt per Sq. In. =	{	8.9 heat-units per sq. ft. per minute 6,371 ft.-lbs. per sq. ft. per minute .193 H.P. per sq. ft. 7.233 ft.-lbs.
1 Kilo-gram Meter =	{	.0000365 H.P. hour .0000272 K.W. hour .0093 heat-units
1 Lb. Water Evaporated from and at 212° F. =	{	.283 K.W. hour .379 H.P. hour 965.7 heat-units 103,900 k.g.m. 1,019,000 joules 751,300 ft.-lbs. .0664 lb. of carbon oxidized
1 Heat-Unit =	{	1,055 watt seconds 778 ft.-lbs. 107.6 kilogram meters .000293 K.W. hour .000393 H.P. hour .0000688 lb. carbon oxidized .001036 lb. water evaporated from and at 212° F.
1 Heat-Unit per Sq. Ft. per Min. =	{	.122 watt per sq. in. .0176 K.W. per sq. ft. .0236 H.P. per sq. ft.

Wiring Formula

Ohm's law is practically the basis for the various formulae in general use for determining the proper size of wire to use to carry various currents. It is essential to know the amount of current expressed in amperes, the distance, and to decide upon the loss to allow in transmission; the best rule is as follows:

The cross section (CM) of the necessary wire is found by multiplying twice the distance one way (2D) by the amount of current expressed in amperes (C) and this by the resistance of one mil-foot (10.7) and dividing by the loss in transmission expressed in volts (v).

$$\text{or, CM} = \frac{2D \times C \times 10.7}{v} \quad \text{or, CM} = \frac{D \times C \times 21.4}{v}$$

Equivalent Values in Different Units

Continued

1 Watt =	{	1 joule per second .00134 H.P. 3,412 heat-units per hour .7373 ft.-lbs. per second .0035 lb. water evaporated per hour 44.24 ft.-lbs. per minute
1 K.W. Hour =	{	1,000 watt hours 1.34 H.P. hours 2,654,200 ft.-lbs. 3,600,000 joules 3,412 heat-units 367,000 kilogram meters .235 lb. carbon oxidized with perfect efficiency 3.53 lbs. water evaporated from and at 212° F. 22.75 lbs. of water raised from 62° to 212° F.
1 Joule =	{	1 watt second .00000278 K.W. hour .102 k.g.m. .0009477 heat-units .7373 ft.-lb.
1 Ft.-Lb. =	{	1.356 joules .1383 k.g.m. .00000377 K.W. hours .001285 heat-units .0000005 H.P. hour
1 lb. Carbon Oxidized with Perfect Efficiency =	{	14,544 heat-units 1.11 lb. anthracite coal oxidized 2.5 lbs. dry wood oxidized 21 cu. ft. illuminating gas 4.26 K.W. hours 5.71 H.P. hours 11,315,000 ft.-lbs. 15 lbs. of water evaporated from and at 212° F.

Equivalent of Electrical Units

1 H.P. =	{	33,000 foot-pounds per minute 746 watts 42.746 B.T.U. (British Thermal Unit) per minute 2564.76 B.T.U. per hour
1 K.W. =	{	44,235 foot-pounds per minute 1.34 H.P. 0.955 B.T.U. per second 57.3 B.T.U. per minute 3,438 B.T.U. per hour
1 B.T.U. =	{	772 foot-pounds 17,452 watt minutes 0.2909 watt hours
1 Watt =	{	44.236 foot-pounds per minute 2,654.16 foot pounds per hour

Latent heat of evaporation of water = 966 B.T.U.

Latent heat of melting of water = 142 B.T.U.

To evaporate 1 lb. water from and at 212° = 16.859 K.W. minutes

To evaporate 1 lb. water from and at 212° = 0.281 K.W. hours

Weight per cu. ft. of water = 62.42 lbs.

Weight per gallon of water = 8.33 lbs.

Physical Data

The equivalent of one B.t.u. of heat = 778 foot-pounds.
 The equivalent of one calorie of heat = 426 kg-m., = 3.968 B.t.u.
 One cubic foot of water weighs 62.355 pounds at 62° Fahr.
 One cubic foot of air weighs 0.0807 pounds at 32° Fahr. and one atmosphere.
 One cubic foot of hydrogen weighs 0.00557 pounds.
 One foot-pound = 1.3562×10^7 ergs.
 One h.p. hour = $33,000 \times 60$ foot-pounds.
 One h.p. = 33,000 foot-pounds per min. = 550 foot-pounds per second = 746 watts, = 2545 B.t.u. per hour.
 Acceleration of gravity (g) = 32.2 feet per second. = 980 mm. per second.
 One atmosphere = 14.7 pounds per square inch. = 2116 pounds per square foot. = 760 mm. of mercury.
 Velocity of sound at 0° Cent. in dry air = 332.4 meters per sec. = 1091 feet per sec.
 Velocity of light in vacuum = 299,853 km. per sec. = 186,325 miles per sec.
 Specific heat of air at constant pressure = 0.237.
 A column of water 2.3 feet high corresponds to a pressure of 1 pound per square inch.
 Coefficient of expansion of gases = $1/273 = 0.00367$.
 Latent heat of water = 79.24.
 Latent heat of steam = 535.9.

Handy Table

Diameter of a circle $\times 3.1416$ = circumference.
 Radius of a circle $\times 6.283185$ = circumference.
 Square of the diameter of a circle $\times 0.7854$ = area.
 Square of the circumference of a circle $\times 0.07958$ = area.
 Half the circumference of a circle \times half its diameter = area.
 Circumference of a circle $\times 0.159155$ = radius.
 Square root of a circle $+ 0.56419$ = radius.
 Circumference of a circle $\times 0.31831$ = diameter.
 Square root of the area of a circle $\times 1.12838$ = diameter.
 Diameter of a circle = 0.86 = side of inscribed equilateral triangle.
 Diameter of a circle $\times 0.7071$ = side of an inscribed square.
 Circumference of a circle $+ 0.225$ = side of an inscribed square.
 Circumference of a circle $+ 0.282$ = side of an equal square.
 Diameter of a circle $\times 0.8862$ = side of an equal square.
 Base of a triangle $\times \frac{1}{2}$ the altitude = area.
 Multiplying both diameters and .7854 together = area of an ellipse.
 Surface of a sphere $\times \frac{1}{6}$ of its diameter = solidity.
 Circumference of a sphere \times its diameter = surface.
 Square of the diameter of a sphere $\times 3.1416$ = surface.
 Square of the circumference of a sphere $\times 0.3183$ = surface.
 Cube of the diameter of a sphere $\times 0.5236$ = solidity.
 Cube of the radius of a sphere $\times 4.1888$ = solidity.
 Cube of the circumference of a sphere $\times 0.016887$ = solidity.
 Square root of the surface of a sphere $\times 0.56419$ = diameter.
 Square root of the surface of a sphere $+ 1.772454$ = circumference.
 Cube root of the solidity of a sphere $\times 1.2407$ = diameter.
 Cube root of the solidity of a sphere $\times 3.8978$ = circumference.
 Radius of a sphere $\times 1.1547$ = side of an inscribed cube.
 Square root of ($\frac{1}{3}$ of the square of) the diameter of a sphere = side of inscribed cube.
 Area of its base $\times \frac{1}{3}$ of its altitude = solidity of a cone or pyramid, whether round, square, or triangular.
 Area of one of its sides $\times 6$ = surface of a cube.
 Altitude of trapezoid $\times \frac{1}{2}$ the sum of its parallel sides = area.

Useful Information

Decimal Equivalents of Parts of an Inch

Fraction	Decimal	Fraction	Decimal	Fraction	Decimal
1/64	.01563	23/64	.35938	45/64	.70313
1/32	.03125	3/8	.375	23/32	.71875
3/64	.04688	25/64	.39063	47/64	.73438
1/16	.0625	13/32	.40625	3/4	.75
5/64	.07813	27/64	.42188	49/64	.76563
3/32	.09375	7/16	.4375	25/32	.78125
7/64	.10938	29/64	.45313	51/64	.79688
1/8	.125	15/32	.46875	13/16	.8125
9/64	.14063	31/64	.48438	53/64	.82813
5/32	.15625	1/2	.5	27/32	.84375
11/64	.17188	33/64	.51563	55/64	.85938
3/16	.1875	17/32	.53125	7/8	.875
13/64	.20313	35/64	.54688	57/64	.89063
7/32	.21875	9/16	.5625	29/32	.90625
15/64	.23438	37/64	.57813	59/64	.92188
1/4	.25	19/32	.59375	15/16	.9375
17/64	.26563	39/64	.60938	61/64	.95313
9/32	.28125	5/8	.625	31/32	.96875
19/64	.29688	41/64	.64063	63/64	.98438
5/16	.3125	21/32	.65625	1	1.00000
21/64	.32813	43/64	.67188	...	.....
11/32	.34375	11/16	.6875	...	.....

Metric Conversion Table

Millimetres $\times .03937$ = Inches.
 Millimetres $\div 25.4$ = Inches.
 Centimetres $\times .3937$ = Inches.
 Centimetres $\div 2.54$ = Inches.
 Metres $\times 39.37$ = Inches.
 Metres $\times 3.281$ = Feet.
 Metres $\times 1.094$ = Yards.
 Kilometres $\times .621$ = Miles.
 Kilometres $\div 1.6093$ = Miles.
 Kilometres $\times 3280.8693$ = Feet.
 Sq. Millimetres $\times .00155$ = Sq. Inches.
 Sq. Millimetres $\div 645.1$ = Sq. Inches.
 Sq. Centimetres $\times .155$ = Sq. Inches.
 Sq. Centimetres $\div 6.451$ = Sq. Inches.
 Sq. Metres $\times 10.764$ = Sq. Feet.
 Sq. Kilometres $\times 247.1$ = Acres.
 Hectare $\times 2.471$ = Acres.
 Cu. Centimetres $\div 16.383$ = Cu. Inches.
 Cu. Centimetres $\div 3.69$ = Fl. Drams.
 Cu. Centimetres $\div 29.57$ = Fl. Oz.
 Cu. Metres $\times 35.315$ = Cu. Feet.
 Cu. Metres $\times 1.308$ = Cu. Yards.
 Cu. Metres $\times 264.2$ = Gals. (231 Cu. Inches).
 Litres $\times 61.022$ = Cu. Inches.
 Litres $\times 33.84$ = Fluid Oz.
 Litres $\times .2642$ = Gals. (231 Cu. Inches).
 Litres $\div 3.78$ = Gals. (231 Cu. Inches).
 Litres $\div 28.316$ = Cu. Feet.
 Hectolitres $\times 3.531$ = Cu. Feet.
 Hectolitres $\times 2.84$ = Bu. (2150.42 Cu. Inches).
 Hectolitres $\times .131$ = Cu. Yards.
 Hectolitres $\div 26.42$ = Gals. (231 Cu. Inches).
 Grammes $\times 15.432$ = Grains.
 Grammes $\div 981$ = Dynes.
 Grammes (Water) $\div 29.57$ = Fluid Oz.
 Grammes $\div 28.35$ = Oz. Avoirdupois.
 Joule $\times .7373$ = Ft. Lbs.
 Kilogrammes $\times 2.2046$ = Lbs.
 Kilogrammes $\times 35.3$ = Oz. Avoirdupois.
 Kilogrammes $\div 907.2$ = Tons (2000 Lbs.)
 Kilogrammes—Per Sq. Cent. $\times 14.223$ = Lbs. per Sq. Inch.
 Kilo-Gram-Metres $\times 7.233$ = Ft. Lbs.
 Kilo-Gram per Metre $\times 7.233$ = Ft. Lbs.
 Kilo-Gram-Metre $\times .672$ = Lbs. per Ft.
 Kilo-Gram per Cu. Metre $\times .062$ = Lbs. per Cu. Ft.
 Kilo-Gram per Cheval $\times 2.235$ = Lbs. per H. P.
 Watts $\div 746$ = Horse-power.
 Watts $\times .7373$ = Ft. Pounds Per Second.
 Calorie $\times 3.968$ = B. T. U.
 Cheval Vapeur $\times .9863$ = Horse-power.
 (Centigrade $\times 1.8$) $+ 32$ = Degrees Fahr.
 Acceleration due to Gravity at Paris = 980.94 Centimeures per Second.

Tables

Metric System of Weights and Measures

Measures of Lengths			
1 Millimeter	=	0.001 Meter	= 0.0394 Inch
1 Centimeter	=	0.01 Meter	= 0.3937 Inch
1 Decimeter	=	0.1 Meter	= 3.937 Inch
1 Meter	=	1 Meter	= 39.37 Inch
1 Dekameter	=	10 Meters	= 393.7 Inch
1 Hectometer	=	100 Meters	= 328 Feet 1 Inch
1 Kilometer	=	1000 Meters	= 3280 Feet 10 In.
1 Myriameter	=	10000 Meters	= 6.2137 Miles

It will be noticed that 10 Millimeters equal 1 Centimeter
10 Centimeters equal 1 Decimeter and so on.

Measures of Volumes			
1 Milliliter	=	0.001 Liter	= 0.061 Cu. In.
1 Centiliter	=	0.01 Liter	= 0.6102 Cu. In.
1 Deciliter	=	0.1 Liter	= 6.1022 Cu. In.
1 Liter	=	1 Liter	= 0.9081 Quart
1 Dekaliter	=	10 Liters	= 9.081 Quarts
1 Hectoliter	=	100 Liters	= 2 Bu. 3.35 Pks.
1 Kiloliter	=	1000 Liters	= 1.308 Cu. Yds.

Weights			
1 Milligrm.	=	0.001 Gramme	= 0.0154 Grain
1 Centigrm.	=	0.01 Gramme	= 0.1543 Grain
1 Decigrm.	=	0.1 Gramme	= 1.5432 Grains
1 Gramme	=	1 Gramme	= 15.432 Grains
1 Dekagrme.	=	10 Grammes	= 0.3527 Ounce
1 Hectogrme.	=	100 Grammes	= 3.5274 Ounces
1 Kilogramme	=	1000 Grammes	= 2.2046 Pounds
1 Myriagramme.	=	10000 Grammes	= 22.046 Pounds

Measures of Surface			
1 Hectare	=	10000 Sq. Meters	= 2.471 Acres
1 Are	=	100 Sq. Meters	= 119.6 Sq. Yds.
1 Centiare	=	1 Sq. Meter	= 1.550 Sq. Ins.

Metric and English Equivalents

1 Inches	=	Millimeters	÷	25
1 Feet	=	Meters	×	3 2803
1 Yards	=	"	×	1 09361
1 Miles	=	Kilometers	÷	1 60935
1 Square Inches	=	Sq. Millimeters	×	00155
1 Square Feet	=	Square Meters	×	10 7641
1 Acres	=	Sq. Kilometers	×	247 114
1 Cubic Inches	=	Cu. Centimeters	÷	16 3870
1 Cubic Feet	=	Cubic Meters	×	35 3140
1 lbs. Avoirdupois	=	Kilogrammes	×	2 40262
1 Tons (2000 lbs.)	=	Kilogrammes	÷	907 18
1 lbs. per foot	=	Kilo per meter	×	67196
1 lbs. per cwt. ft.	=	Kilo per cu. meter	×	06243
1 Square Millimeters	=	Square inches	×	645 137
1 Square Meter	=	Square Feet	×	0929
1 Grammes	=	Ounces	×	28 3495
1 Grammes	=	Pounds	×	453 5926
1 Kilogrammes	=	Pounds	×	45359

Field Current in D. C. Dynamos

It has been found that a fair average for the field amperes of different sized dynamos, is as follows:—

C. W.	1	5	10	20	30	50	75	100
Per Cent	8	6	5	4	3.5	3	3	2.75

The field current (expressed as a percentage of full load current on lines) is determined with all of the resistance out, that is, with rheostat on first notch.

Copper Wire Resistance

The basis for computation of resistance of copper wires is a wire one foot long and one circular mil of cross section known as a mil-foot, and which has a resistance of 24° C., or 75° F., of about 10.7 Ohms. The resistance of a copper wire varies directly as its length and inversely as its cross section: hence,

The resistance (R) of a copper wire is equal to its length (D) multiplied by the resistance of a mil-foot and divided by the cross section in circular mils (CM).

$$\text{Or, } R = \frac{D \times 10.7}{\text{CM}} \text{ also}$$

The cross section (CM) in circular mils of a wire is equal to its length (D) multiplied by the resistance of a mil-foot, divided by its resistance (R).

$$\text{CM} = \frac{D \times 10.7}{R} \text{ also}$$

The length (D) of a wire is equal to the cross section in circular mils (CM) multiplied by its resistance (R) and divided by the resistance of a mil-foot.

$$D = \frac{\text{CM} \times R}{10.7}$$

Table of Comparison of Centigrade and Fahrenheit Scales

Thermometer Scales							
Cent.	Fahr.	Cent.	Fahr.	Cent.	Fahr.	Cent.	Fahr.
0	32.0	13	55.4	26	78.8	39	102.2
1	33.8	14	57.2	27	80.6	40	104.0
2	35.6	15	59.0	28	82.4	41	105.8
3	37.4	16	60.8	29	84.2	42	107.6
4	39.2	17	62.6	30	86.0	43	109.4
5	41.0	18	64.4	31	87.8	44	111.2
6	42.8	19	66.2	32	89.6	45	113.0
7	44.6	20	68.0	33	91.4	46	114.8
8	46.4	21	69.8	34	93.2	47	116.6
9	48.2	22	71.6	35	95.0	48	118.4
10	50.0	23	73.4	36	96.8	49	120.2
11	51.8	24	75.2	37	98.6	50	122.0
12	53.6	25	77.0	38	100.4	51	123.8
52	125.6	65	149.0	78	172.4	91	195.8
53	127.4	66	150.8	79	174.2	92	197.6
54	129.2	67	152.6	80	176.0	93	199.4
55	131.0	68	154.4	81	177.8	94	201.2
56	132.8	69	156.2	82	179.6	95	203.0
57	134.6	70	158.0	83	181.4	96	204.8
58	136.4	71	159.8	84	183.2	97	206.6
59	138.2	72	161.6	85	185.0	98	208.4
60	140.0	73	163.4	86	186.8	99	210.2
61	141.8	74	165.2	87	188.6	100	212.0
62	143.6	75	167.0	88	190.4	...	...
63	145.4	76	168.8	89	192.2	...	...
64	147.2	77	170.6	90	194.0	...	...

Seventy-five deg. Fahr., or 23.8 deg. Cent. is the standard temperature for measuring electrical resistances in submarine cable tests.

Sixty deg. Fahr., or 15.5 deg. Cent. is the standard temperature for measuring the electrical resistance of wire for general telegraphic and electric light purposes; it is assumed to be the average temperature of the air.

Nine deg. Fahr. = 5 deg. Centigrade = 4 deg. Reaumur.

One deg. Fahr. = .5556 deg. Centigrade.

One deg. Centigrade = 1.8 deg. Fahr.

To convert Fahr. to Centigrade, subtract 32, multiply by 5 and divide by 9.

To convert Fahr. to Reaumur, subtract 32, multiply by 4 and divide by 9.

To convert Centigrade to Fahr., multiply by 9, divide by 5 and add 32.

To convert Centigrade to Reaumur multiply by 4 and divide by 5.

To convert Reaumur to Fahr., multiply by 9, divide by 4 and add 32.

To convert Reaumur to Centigrade, multiply by 5, divide by 4.

If temperature is below freezing, the above formula should read "subtract from 32" in place of "subtract 32" and "add 32."

Bus Bar Copper Data

Thick-ness	Width	CARRYING CAPACITY		Thick-ness	Width	CARRYING CAPACITY			
		Lin. Ft. @ 1000	@ 800 Amps.			Lin. Ft. @ 1000	@ 800 Amps.		
1/16	1/2	.121	31	25	1/4	1	.964	250	200
1/16	3/4	.181	47	38	1/4	1 1/4	1.21	313	250
1/16	1	.241	63	50	1/4	1 1/2	1.45	375	300
1/8	1/2	.241	63	50	1/4	1 3/4	1.69	438	350
1/8	3/4	.362	94	75	1/4	2	1.93	500	400
1/8	1	.482	125	100	1/4	2 1/2	2.41	625	500
1/8	1 1/4	.603	156	125	1/4	3	2.89	750	600
1/8	1 1/2	.723	188	150	3/8	1	1.45	375	300
1/8	1 3/4	.844	219	175	3/8	1 1/4	1.81	469	375
1/8	2	.964	250	200	3/8	1 1/2	2.17	563	450
1/8	2 1/2	1.21	313	250	3/8	1 3/4	2.53	657	525
1/8	3	1.45	375	300	3/8	2	2.89	750	600
1/4	1 1/2	.482	125	100	3/8	2 1/2	3.62	938	750
1/4	3/4	.723	188	150	3/8	3	4.34	1125	900

Per Cent of Profit Table

Profit is a percentage of the selling price and not of the cost. To have a profit of 25% upon sales, it is necessary that 33 1/3% be added to cost price, and all other percentages in a similar way, as per table below.

To obtain a profit of—

12 1/2% Add to Cost	*15% 33 1/3% Add to Cost	50%
15% Add to Cost	17 1/2% 35% Add to Cost	*55%
16 2/3% Add to Cost	20% 37 1/2% Add to Cost	60%
20% Add to Cost	25% 40% Add to Cost	*65%
25% Add to Cost	33 1/3% 42 1/2% Add to Cost	*75%
27 1/2% Add to Cost	*37 1/2% 45% Add to Cost	*80%
30% Add to Cost	*45% 50% Add to Cost	100%

*These figures are a fraction from being exact, but are near enough for practical use

Tables of Discounts

Rate, Per Cent.	10	12 1/2	15	20	25	30
Net	.9000	.8750	.8500	.8000	.7500	.7000
And 2 1/2	.8775	.8531	.8287	.7800	.7312	.6825
" 5	.8550	.8312	.8075	.7600	.7125	.6650
5 and 2 1/2	.8336	.8105	.7873	.7410	.6947	.6484
5 " 5	.8122	.7897	.7671	.7220	.6769	.6317
5, 5 and 2 1/2	.7919	.7699	.7479	.7039	.6600	.6160
And 7 1/2	.8325	.8094	.7862	.7400	.6937	.6475
7 1/2 and 2 1/2	.8117	.7891	.7666	.7215	.6764	.6313
7 1/2 " 5	.7909	.7689	.7469	.7030	.6591	.6151
And 10	.8100	.7875	.7650	.7200	.6750	.6300
10 and 2 1/2	.7897	.7678	.7459	.7020	.6581	.6142
10 " 5	.7695	.7481	.7267	.6840	.6412	.5985
10, 5 and 2 1/2	.7503	.7294	.7086	.6669	.6252	.5835
10 and 10	.7290	.7087	.6885	.6480	.6075	.5670
10, 10 and 5	.6925	.6732	.6541	.6156	.5771	.5386
10, 10 " 10	.6561	.6378	.6196	.5832	.5467	.5103

Table for Figuring Net Profits

If your cost of doing business figured on sales is represented by one of these figures:

%	10%	11%	12%	13%	14%
3	7 1/10 loss	8 1/10 loss	9 1/10 loss	10 1/10 loss	11 1/10 loss
5	5 1/5 loss	6 1/5 loss	7 1/5 loss	8 1/5 loss	9 1/5 loss
10	0 1/10 loss	1 1/10 loss	2 1/10 loss	3 1/10 loss	4 1/10 loss
15	3 1/11 loss	2 1/11 loss	1 1/11 loss	0 1/11 loss	0 1/11 loss
20	6 2/5 loss	5 2/5 loss	4 2/5 loss	3 2/5 loss	2 2/5 loss
25	10 loss	9 loss	8 loss	7 loss	6 loss
30	13 1/3 loss	12 1/3 loss	11 1/3 loss	10 1/3 loss	9 1/3 loss
33 1/3	15 loss	14 loss	13 loss	12 loss	11 loss
35	15 2/7 loss	14 2/7 loss	13 2/7 loss	12 2/7 loss	11 2/7 loss
40	18 2/5 loss	17 2/5 loss	16 2/5 loss	15 2/5 loss	14 2/5 loss
50	23 1/2 loss	22 1/2 loss	21 1/2 loss	20 1/2 loss	19 1/2 loss
60	27 1/2 loss	26 1/2 loss	25 1/2 loss	24 1/2 loss	23 1/2 loss
75	32 2/3 loss	31 2/3 loss	30 2/3 loss	29 2/3 loss	28 2/3 loss
100	40 loss	39 loss	38 loss	37 loss	36 loss

If your cost of doing business figured on sales is represented by one of these figures:

%	15%	16%	17%	18%	19%	20%
3	12 3/10 loss	13 3/10 loss	14 3/10 loss	15 3/10 loss	16 3/10 loss	17 3/10 loss
5	10 1/5 loss	11 1/5 loss	12 1/5 loss	13 1/5 loss	14 1/5 loss	15 1/5 loss
10	5 1/10 loss	6 1/10 loss	7 1/10 loss	8 1/10 loss	9 1/10 loss	10 1/10 loss
15	1 1/11 loss	2 1/11 loss	3 1/11 loss	4 1/11 loss	5 1/11 loss	6 1/11 loss
20	1 2/5 loss	0 3/5 loss	0 4/5 loss	1 1/5 loss	2 1/5 loss	3 1/5 loss
25	5 loss	4 loss	3 loss	2 loss	1 loss	0 loss
30	8 1/3 loss	7 1/3 loss	6 1/3 loss	5 1/3 loss	4 1/3 loss	3 1/3 loss
33 1/3	10 loss	9 loss	8 loss	7 loss	6 loss	5 loss
35	10 2/7 loss	9 2/7 loss	8 2/7 loss	7 2/7 loss	6 2/7 loss	5 2/7 loss
40	13 2/5 loss	12 2/5 loss	11 2/5 loss	10 2/5 loss	9 2/5 loss	8 2/5 loss
50	18 1/2 loss	17 1/2 loss	16 1/2 loss	15 1/2 loss	14 1/2 loss	13 1/2 loss
60	22 1/2 loss	21 1/2 loss	20 1/2 loss	19 1/2 loss	18 1/2 loss	17 1/2 loss
75	27 2/3 loss	26 2/3 loss	25 2/3 loss	24 2/3 loss	23 2/3 loss	22 2/3 loss
100	35 loss	34 loss	33 loss	32 loss	31 loss	30 loss

If your cost of doing business figured on sales is represented by one of these figures:

%	21%	22%	23%	24%	25%
3	18 3/10 loss	19 3/10 loss	20 3/10 loss	21 3/10 loss	22 3/10 loss
5	16 1/5 loss	17 1/5 loss	18 1/5 loss	19 1/5 loss	20 1/5 loss
10	11 1/10 loss	12 1/10 loss	13 1/10 loss	14 1/10 loss	15 1/10 loss
15	7 1/11 loss	8 1/11 loss	9 1/11 loss	10 1/11 loss	11 1/11 loss
20	4 2/5 loss	5 2/5 loss	6 2/5 loss	7 2/5 loss	8 2/5 loss
25	1 loss	2 loss	3 loss	4 loss	5 loss
30	2 1/3 loss	1 2/3 loss	0 1/3 loss	0 2/3 loss	1 1/3 loss
33 1/3	4 loss	3 loss	2 loss	1 loss	0 loss
35	4 2/7 loss	3 2/7 loss	2 2/7 loss	1 2/7 loss	0 2/7 loss
40	7 2/5 loss	6 2/5 loss	5 2/5 loss	4 2/5 loss	3 2/5 loss
50	12 1/2 loss	11 1/2 loss	10 1/2 loss	9 1/2 loss	8 1/2 loss
60	16 1/2 loss	15 1/2 loss	14 1/2 loss	13 1/2 loss	12 1/2 loss
75	21 2/3 loss	20 2/3 loss	19 2/3 loss	18 2/3 loss	17 2/3 loss
100	29 1/2 loss	28 loss	27 loss	26 loss	25 loss

Your percentage of net profit is represented by the figure at the junction of the two columns:

Explanation—If your cost of doing business is 15% of your gross sales and you mark goods at 25% above cost, your net profit is 5% on sales—as shown in diagram. If your cost of doing business is 18% and you mark your goods at 60% above cost, your net profit is 19 1/2% on sales.

Rate, Per Cent..	33 1/3	35	37 1/2	40	45	47 1/2
Net	.6667	.6500	.6250	.6000	.5500	.5250
And 2 1/2	.6500	.6337	.6094	.5850	.5362	.5119
" 5	.6333	.6175	.5937	.5700	.5225	.4987
5 and 2 1/2	.6175	.6021	.5789	.5557	.5094	.4863
5 " 5	.6017	.5866	.5641	.5415	.4964	.4738
5, 5 and 2 1/2	.5866	.5720	.5499	.5280	.4840	.4620
And 7 1/2	.6167	.6012	.5781	.5550	.5087	.4856
7 1/2 and 2 1/2	.6012	.5862	.5637	.5411	.4960	.4735
7 1/2 " 5	.5859	.5712	.5492	.5272	.4833	.4613
And 10	.6000	.5850	.5625	.5400	.4950	.4725
10 and 2 1/2	.5850	.5704	.5484	.5265	.4826	.4607
10 " 5	.5700	.5557	.5344	.5130	.4702	.4489
10, 5 and 2 1/2	.5557	.5419	.5210	.5002	.4585	.4376
10 and 10	.5400	.5265	.5062	.4860	.4455	.4252
10, 10 and 5	.5130	.5002	.4809	.4617	.4232	.4040
10, 10 " 10	.4860	.4738	.4556	.4374	.4009	.3827

Rate, Per Cent..	50	55	60	62 1/2	65	66 2/3
Net	.5000	.4500	.4000	.3750	.3500	.3333
And 2 1/2	.4875	.4387	.3900	.3656	.3412	.3250
" 5	.4750	.4275	.3800	.3562	.3325	.3167
5 and 2 1/2	.4631	.4168	.3705	.3473	.3242	.3087
5 " 5	.4512	.4061	.3610	.3384	.3159	.3009
5, 5 and 2 1/2	.4400	.3960	.3520	.3300	.3080	.2934
And 7 1/2	.4625	.4162	.3700	.3469	.3237	.3083
7 1/2 and 2 1/2	.4509	.4058	.3607	.3382	.3157	.3006
7 1/2 " 5	.4394	.3954	.3515	.3295	.3076	.2929
And 10	.4500	.4050	.3600	.3375	.3150	.3000
10 and 2 1/2	.4387	.3949	.3510	.3291	.3071	.2925
10 " 5	.4275	.3847	.3420	.3206	.2992	.2850
10, 5 and 2 1/2	.4168	.3751	.3334	.3126	.2918	.2779
10 and 10	.4050	.3645	.3240	.3037	.2835	.2700
10, 10 and 5	.3847	.3463	.3078	.2886	.2693	.2565
10, 10 " 10	.3645	.3280	.2916	.2734	.2551	.2430

Rate, Per Cent..	70	75	77 1/2	80	85	87 1/2
Net	.3000	.2500	.2250	.2000	.1500	.1250
And 2 1/2	.2925	.2437	.2194	.1950	.1462	.1219
" 5	.2850	.2375	.2137	.1900	.1425	.1187
5 and 2 1/2	.2779	.2316	.2084	.1852	.1389	.1158
5 " 5	.2707	.2256	.2031	.1805	.1354	.1128
5, 5 and 2 1/2	.2640	.2200	.1980	.1760	.1320	.1100
And 7 1/2	.2775	.2312	.2081	.1850	.1387	.1156
7 1/2 and 2 1/2	.2706	.2255	.2029	.1804	.1353	.1127
7 1/2 " 5	.2636	.2197	.1977	.1757	.1318	.1098
And 10	.2700	.2250	.2025	.1800	.1350	.1125
10 and 2 1/2	.2632	.2194	.1974	.1755	.1316	.1097
10 " 5	.2565	.2137	.1924	.1710	.1282	.1069
10, 5 and 2 1/2	.2501	.2084	.1876	.1667	.1250	.1042
10 and 10	.2430	.2025	.1822	.1620	.1215	.1012
10, 10 and 5	.2308	.1924	.1731	.1539	.1154	.0962
10, 10 " 10	.2187	.1822	.1640	.1458	.1093	.0911

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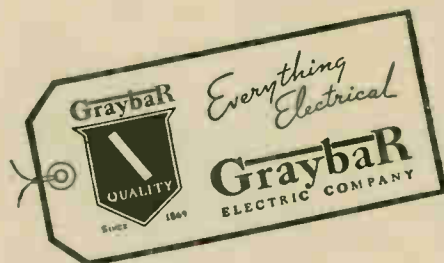
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Columbia

TENNESSEE

Chattanooga
Knoxville
Memphis
Nashville

TEXAS

Beaumont
Dallas
Fort Worth
Houston
San Antonio

UTAH

Salt Lake City

VIRGINIA

Norfolk
Richmond
Roanoke

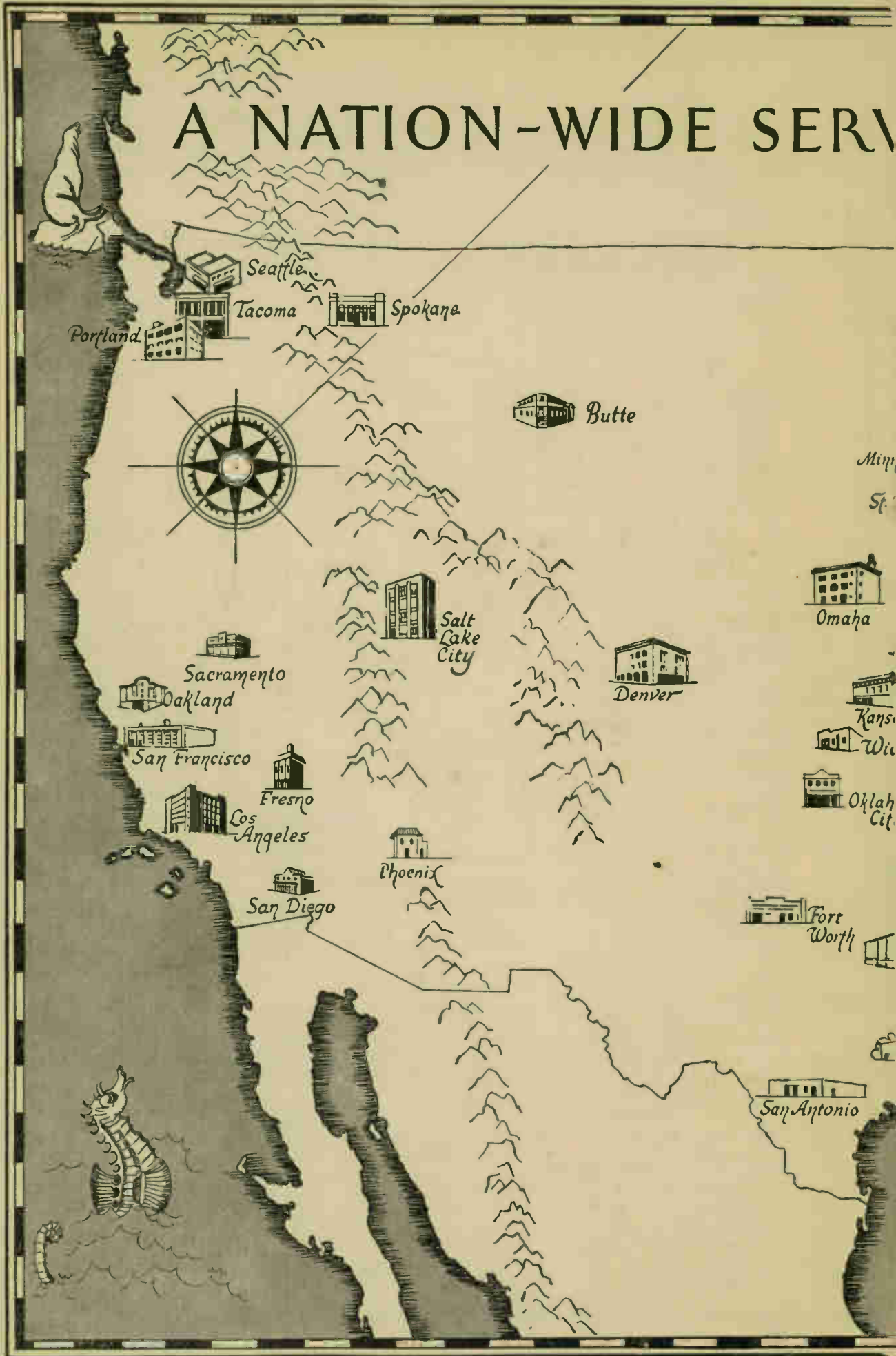
WASHINGTON

Seattle
Spokane
Tacoma

WISCONSIN

Milwaukee

A NATION-WIDE SERV



Portland

Seattle

Tacoma

Spokane

Butte

Minn

Sf

Omaha

Sacramento

Oakland

Denver

Kans

Wic

San Francisco

Fresno

Los Angeles

Oklah
Cit

Phoenix

San Diego

Fort
Worth

San Antonio